Clinical education:

Introduction to HIV

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MSHC
MELBOURNE SEXUAL HEALTH CENTRE

Part of AlfredHealth

KEY STATS

NUMBER OF HIV NOTIFICATIONS FROM 2014

2014	2015	2016	2017	2018
1,084	1,026	1,013	937	**833**

28,180 people were estimated to be living with HIV at the end of 2018.
2,690 people were unaware they were HIV positive.

KEY POINTS

The fall in diagnoses is a result of community efforts to increase HIV testing, PrEP and HIV treatment.

Further reductions will be driven by:
- Prompt implementation of the National HIV Strategy
- Investment in community-led education campaigns
- Decriminalisation of sex work

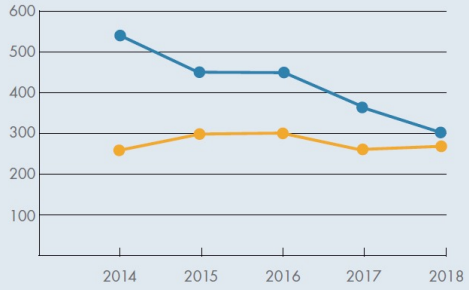
HIV transmission among Aboriginal and Torres Strait Islander people and continues to rise.

Access to HIV treatment and PrEP for people ineligible for Medicare is urgently needed.

afao AUSTRALIAN FEDERATION OF AIDS ORGANISATIONS

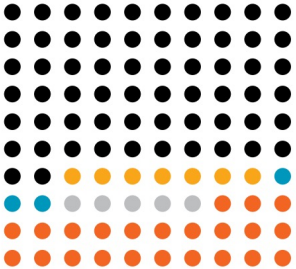
HIV IN AUSTRALIA 2020 [1]

HIV notifications among gay, bisexual and other MSM Australian-born vs overseas-born (2014-2018)



The proportion of HIV notifications among gay and bisexual men born overseas has **increased** from **29%** in 2009 to **47%** in 2018.

HIV TRANSMISSION IN AUSTRALIA: 2018 DATA



62% MEN WHO HAVE SEX WITH MEN (MSM)
7% MSM AND INJECTING DRUG USE
3% INJECTING DRUG USE
5% OTHER/UNSPECIFIED
23% HETEROSEXUAL SEX

INNOVATIONS IN HIV

PrEP (Pre-Exposure Prophylaxis): The use of HIV medication by people at risk of HIV to prevent HIV acquisition.

Since April 2018, PrEP has been available through the PBS. As of March 2019, there were an estimated 23,020 accessing PrEP. However, there are 62,200 who are eligible for PrEP. [2]

PEP (Post-Exposure Prophylaxis): Month-long daily treatment to prevent HIV acquisition following exposure to risk.

TasP (Treatment as Prevention): There is zero risk of sexual transmission from someone on HIV treatment with an undetectable viral load.

HIV self-testing: HIV test device that enables HIV tests at home.

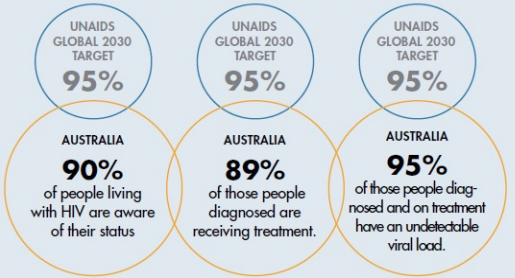
In November 2018, the first HIV self-test was approved. Australian research shows HIV self-testing devices increase testing among infrequent and non-testers. For the benefits of self-tests to be realised, availability needs to be expanded to pharmacies.

ABORIGINAL AND TORRES STRAIT ISLANDER PEOPLE

The rate of diagnosis is around twice as high among Aboriginal and Torres Strait Islander people than Australian born non-Indigenous people (4.7 v 2.3 per 100,000).

An improved and sustained response to HIV and STIs among Aboriginal and Torres Strait Islander communities needs to be planned and implemented.

GLOBAL TARGET



27% OF PEOPLE LIVING WITH HIV IN AUSTRALIA DO NOT HAVE A SUPRESSED VIRAL LOAD

Who should be offered screening for HIV?

- Men who have Sex with Men (MSM)
- Individuals co-infected with Hepatitis B and C (shared routes transmission)
- Partners of known HIV positive people
- Heterosexuals who have recently changed sexual partners
- Aboriginal and Torres Strait Islanders
- Immigrants from High Prevalence countries for HIV
- Travellers having sex high prevalence countries (HPC)
- Pregnant women
- People who inject drugs
- Sex workers

People from some of the above groups might be at ongoing risk of HIV exposure and should potentially be assessed for PrEP suitability.

HIV is only transmitted in certain body fluids

Body fluids with HIV	Body fluids without HIV
• Blood • Semen • Cervico-vaginal secretions • Rectal secretions • Breast milk • CSF	• Urine • Faeces • Tears • Saliva (inhibitory substance)

Routes of HIV Transmission

- main route of transmission is sexual transmission through condomless anal or vaginal sex
- shared injecting equipment
- vertical/perinatal transmission
- contaminated medical / dental procedures in resource poor countries.

Clinical Syndromes Associated with HIV

- HIV seroconversion illness (Primary HIV)
  - Experienced by 50-90% of patients
  - Usually occurs between 10 days to 6 weeks after exposure. Median 21 days
  - Non specific mononucleosis-like illness. Symptoms may include fever, sweating, malaise, anorexia, nausea, myalgia, arthralgia, headache, sore throat, diarrhoea, lymphadenopathy.
- **Clinical latent period +/- generalised lymphadenopathy**
  - Most have few symptoms. Might have dermatological conditions such as seborrhoeic dermatitis.
- **Late Disease**
  - Progressive weakening of the immune system leads to increasing constitutional symptoms such as weight loss, fatigue, myalgias, neuropathic symptoms and headaches.
  - When CD4 count < 200 cells mm^3 person at risk of AIDS defining opportunistic infections and malignancies

Understanding and interpreting the HIV screening Test

1. Laboratory testing

- most laboratories in Australia use a 4th generation combined HIV antigen / antibody test
- this is a screening test
- if the screening test is reactive the laboratory will automatically organize a confirmatory Western Blot test.
- do not give a diagnosis of HIV based on the screening test. Wait until you have received the Western Blot result. Western Blot may take up to 7 days
- HIV Ab test has a window period- the time between potential exposure to HIV and the point when the test will give an accurate result when HIV antibodies are made
- most new cases of HIV will be detected within 6 weeks
- gold standard for the window period is still regarded as 12 weeks
- if the screening test is negative consider the window period in someone with recent high risk exposure to HIV

Understanding and interpreting the HIV screening Test

Specialist telephone advice can be obtained:

- **Pathology service** that performed the test
- **HIV GP Connect**. 0418 459 168. Mon – Fri 8 am to 5 pm.
- **Melbourne Sexual Health Service** 1800 032 017
- **High Case Load GP Clinics.** The Centre Clinic, Northside, Prahran Market

Pathology Report — Victorian Infectious Diseases Reference Laboratory

VIDRL
Victorian Infectious Diseases Reference Laboratory

792 Elizabeth St, Melbourne, Vic. 3000
t: (03) 9342 9600 f: (03) 9342 9655
MH (APA) ABN 73 802 706 972792
NATA/RCPA Accredited Laboratory No 2576

Supervising Pathologists
Dr M Catton Dr B Howden
Dr S Locarnini Dr D Williamson
Dr E Chew Dr G Kelsey

Address for Reports
FOR LAB USE ONLY!
DR. TEST DOC1 (FAX #)

Requesting Doctor
DR. VERY (11265) FAKE (VHA) (FX&PRT)
ATT: INFO SYSTEMS
ADDRESS LINE 2 NORTH MELBOURNE 3051

Patient

Name: BLOGGS, SASSY
Sender's UR:
Address: TEST ADDRESS 1, STREET 1, NORTH MELBOURNE, 3051
Date of Birth: 21/10/1967
Age: 51.4
Gender: Female

Specimen

Lab Number: 19999999
Collection Date: 06/03/2019
Registration Date: 06/03/2019
Sender's Reference:
Specimen Type received: Serum
Specimen Type tested: Serum
Specimen Site:

HIV 1/2 Serology

Test Description	Assay	Result
HIV 1/2 Ag-Ab CLIA	Liaison XL	Reactive
HIV 1/2 Western Blot	MP Diagnostics	Reactive
HIV 1/2 Ag-Ab EIA	Biorad Genscreen Ultra	Reactive
HIV-1 p24 Ag EIA	Biorad Genscreen	Reactive

Comment

Comment 1
Comment 2
Comment 3
Comment 4

Interpretation

Comment 5
Comment 6

HIV GP Connect is a Victorian HIV Service program offering support to Victorian GPs managing new HIV diagnoses

- advice and support delivering a positive HIV result
- access to an HIV nurse practitioner for advice and support
- access to HIV specialist care & support
- assistance with patient-preferred HIV pathways to care

From Monday to Friday, 8am-5pm, contact 0418 459 168

R2 Tests:HIV7 Validated by rob1 12:09 09 Apr 2019 Page 1 of 1

Clinical interpretation of HIV test result: always take into consideration the context of testing

An approach to various testing scenarios		
Test result	Interpretation of HIV test results	Action
Screening test negative	The person does not have HIV infection OR The person is in the window period	Repeat HIV test if the person is potentially still in the window period ie recent exposure
Screening test reactive Western blot negative/indeterminate	The person has evolving HIV infection (window period) OR The person has a false positive	Further testing after advice from HIV specialist
Screening test reactive Western blot positive	The person has HIV infection	Early assessment Referral for treatment

Understanding and interpreting the HIV screening Test

2. Point of Care Rapid HIV Testing

These are either HIV Ab tests or combined 4th Generation HIV Ag/Ab tests.

Advantages

- patient can be provided with a result within 30 minutes
- facilitates rapid initiation onto PrEP

Disadvantages

- If HIV Antibody test only, it will have a longer window period than a combined 4th Generation HIV Ag / Ab test.
- If the test is reactive, the person will need to have a sample of blood taken and sent for a combined 4th generation HIV Ag /Ab test for confirmation +/- Western Blot.

Role in PrEP? Can facilitate rapid initiation PrEP especially in people with high behavioural risk but is good practice to send a combined HIV Ag / Ab test as well.

Understanding and interpreting the HIV screening Test

3. Home HIV Self testing

- new in Australia
- only one brand currently registered. *Atomo HIV Self Test*
- same technology as HIV Rapid Tests
- HIV antibody test only
- only available online for purchase

What to do if screening confirms the patient is HIV Positive

- most new cases of HIV in Australia diagnosed in general practice
- PrEP initiation involves screening people who have been assessed as moderate to high risk for HIV
- possible that a patient will be newly diagnosed with HIV as part of the baseline PrEP assessment

The Newly Diagnosed HIV Positive Person

- HIV is now a treatable condition
- people living with HIV can expect a near normal life expectancy
- newer anti-retroviral therapy (ART) is safe and well-tolerated
- early initiation of ART at any CD4 count is recommended to preserve immune function and decrease morbidity and mortality
- late diagnosis (CD4 count <350cells/mm^3) of HIV in Australia is common
- newly diagnosed people need a comprehensive assessment of how unwell they are
- unwell patients with a late diagnosis need urgent referral to an HIV specialist for management
- Treatment as Prevention (TASP). U=U

Assessment of the newly diagnosed HIV positive Person

- **Complete history and examination**. Determine duration infection if possible. Urgent referral to tertiary centre if unwell and profoundly immunosuppressed.
- **Social Assessment**. Assess risk factors for transmission and individual's understanding HIV. Social Supports. Impact on Occupation and family
- **Psychological assessment**. Assess risk of depression, adjustment disorders, suicidal ideation, maladaptive behavioural responses, underlying mental health issues.
- **Disclosure to others**. Complex. Both the patient and the doctor may need assistance. Refer to support services such as The Positive Living Centre (https://thorneharbour.org/) and ASHM resources for GPs https://www.ashm.org.au/resources/hiv-resources-list/
- **Laboratory investigations**.
- Screening for **co-morbidities**. HIV positive people have an increased incidence of cardiovascular, renal, bone, liver disease and some cancers
- **General health**. Smoking. BMI. Vaccinations. Exercise.
- **Contact Tracing.** Can be difficult. Expert assistance available from Public Notification Officers. Contact Tel : 03 9096 3367 ; email contact.tracers@dhhs.vic.gov.au

Laboratory Investigations in the newly diagnosed HIV positive person

- Confirmation diagnosis with repeat Western Blot
- CD4 cell count (Late diagnosis <350 cells/mm^3 ; advanced diagnosis <200 cells/mm^3)
- HIV Viral Load
- HIV Genotype
- HLA B*57-01 (screening for potential abacavir hypersensitivity)
- Baseline FBE, U+E/Cr, eGFR; LFT, Lipids, HbA1c; Urine protein: creatinine ratio
- Viral Hepatitis A, B, and C
- Complete STI screen. http://www.sti.guidelines.org.au/standard-asymptomatic-check-up
- Baseline screening for cytomegalovirus, toxoplasmosis and serum cryptococcal Ag if CD4 < 100 cells/mm^3
- +/- Pregnancy test

Where can I refer to?

- https://melbourne.healthpathways.org.au
- GP Connect. 0418 459 168
- High case load GP Clinics.
  - The Centre Clinic. 03 9525 5866
  - Northside Clinic. 03 9485 7700
  - The Prahran Market Clinic. 03 9514 0888
- Melbourne Sexual Health Service HIV Clinic.
  03 9341 6214
- HIV s100 Prescribers. https://www.ashm.org.au/HIV/HIV-prescribers/
- Tertiary Hospital Infectious Diseases Clinics.

Undetectable = Untransmittable U=U

- HIV treatment as prevention
- An undetectable viral load means that ART has been effective in suppressing viral replication.
- There is effectively no risk of sexually transmitting the virus to a HIV-negative partner.

ashm
Australasian Society for HIV, Viral Hepatitis and Sexual Health Medicine

A guide for clinicians to discuss

U=U

UNDETECTABLE = UNTRANSMITTABLE

https://www.ashm.org.au/HIV/UequalsU/

What is Non-Occupational Post Exposure Prophylaxis (NPEP)?

- use of antiretroviral drugs after exposure to reduce the likelihood of HIV infection
- evidence – no RCT. Based on animal data, case control, occupational exposure, MTCT prevention data
- **no longer recommended if the the source has a known undetectable HIV viral load**
- 2-3 drugs given for 30 days
- transitioned from PEP to PrEP
- < 72 hours post-exposure (preferably as soon as possible)
- non s100 indication
- national guidelines available on ASHM website (www.ashm.org.au/HIV/hiv-management/PEP/)

NPEP in Victoria

- NPEP is not funded by the PBS
- Means referring the patient to an NPEP service.
- Ideally NPEP should be started as soon as possible and must be started < 72 hours after the exposure.

How to refer for NPEP

- NPEP Service based at the Alfred Hospital (hub and spoke model)
- NPEP starter packs available at
  - Emergency Departments (metro and regional)
  - Melbourne Sexual Health Centre
  - High caseload clinics (The Centre Clinic, Northside, The Prahran Market Clinic)
  - Other GPs
- phone advice line Victorian NPEP line 1800 889 887. 9am-5pm.

PEP guidelines

- PEP guidelines
- https://www.ashm.org.au/HIV/PEP/