



衛生防護中心 Centre for Health Protection

Scientific Committee on AIDS and STI (SCAS)

Recommendations on HIV Testing in Hong Kong

Purpose and scope

The Scientific Committee on AIDS and STI (SCAS) developed this set of local recommendations on HIV testing taking reference from major international guidelines and made adaptations based on local epidemiology and sociocultural context. This document supersedes the paper “*Principles of Consent, Discussion and Confidentiality Required of the Diagnostic HIV Test*” issued by the Advisory Council on AIDS and SCAS in July 2011. It intends to provide a framework to guide healthcare providers and other community personnel who are involved in offering HIV testing to their patients and clients in different care settings, with an aim to increase the uptake of HIV testing across the territory, facilitating early identification of individuals with HIV infection, and effectively linking individuals to respective prevention, treatment and care services, based upon their status and needs.

2. This document covers the following sections to illustrate the key recommendations involved in the provision of HIV testing services:

- I. Overarching principles to deliver HIV testing services;
- II. Who to get tested;
- III. How frequent to get tested;
- IV. Consent and pre-test information;
- V. How to test;
- VI. Laboratory diagnostic algorithm; and
- VII. Post-test care and referral pathway.



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Background

3. With the advancement of antiretroviral therapy (ART), Human Immunodeficiency Virus (HIV) infection has evolved from a fatal condition to a manageable chronic health condition. Early diagnosis, timely linkage to care and treatment initiation, support for long-term adherence and subsequent achievement of viral suppression constitute the essential components along the HIV care continuum that are critical not only in maintaining the health of people living with HIV (PLHIV), but also in preventing transmission as a result of “Treatment as Prevention” (TasP).

4. With an ultimate goal of ending the HIV epidemic, the Joint United Nations Programme on HIV/AIDS (UNAIDS) 2025 targets call for 95% of all PLHIV knowing their HIV status, 95% who know their HIV-positive status taking antiretroviral treatment, and 95% of those receiving treatment having suppressed viral load¹. Facilitating the first 95, via a multi-pronged approach to address the barriers to testing is, therefore, foundational to allow for linking individuals with HIV to appropriate care settings, and subsequent achievement of the second and third 95.

Local epidemiology

5. Locally, sexual contact remains the most common route of transmission accounting for over 95% of the newly reported cases with known route of transmission in the past decade. While the annual number of newly reported HIV infection has shown a declining trend from its peak in 2015, it is largely contributed by a drop in new cases acquiring the infection via homosexual contact, whereas those acquiring the infection via heterosexual contact has shown a static trend. The decline is also more obvious among those at a younger age (i.e. <50 years) and among Chinese. Overall, the decline in total number of newly reported cases is likely attributed to a combination of preventive strategies including universal ART initiation leading to the observation of TasP and potentially via a wider adoption of HIV pre-exposure prophylaxis (PrEP) as an additional preventive measure among the local men who have sex with men (MSM) community^{2,3}.

6. Despite of such, an increasing proportion of late presenters (defined as having a CD4 count of less than 200 cells/mm³ at the time of HIV diagnosis) among newly reported cases with known CD4 count has been observed in Hong Kong, rising from 28.5% in 2014 to 47.0% in 2023. Those who presented late were more likely to be aged 50 or above, non-Chinese Asian and male or female contracting HIV via heterosexual contact. Similar phenomenon is also observed globally with the proportion of late presenters reaching above 40-70% in different parts of the world^{4,5,6,7}. Older age at diagnosis and heterosexual route of transmission are common epidemiological factors associated with late presentation in their settings^{8,9}.

7. People who present late are at increased risks of clinical complications including concurrent opportunistic infections and/or malignancies. They tend to have poorer immune recovery and suffer from a higher mortality rate. With an unsuppressed viral load, the HIV transmission rate from people unaware of their HIV status is approximately 3.5 times higher than early presenters¹⁰.

8. This alarmingly high and rising proportion of late presenters calls for a need to understand the multiple barriers to HIV testing¹¹ and to devise a systematic approach to address the gaps and challenges along the HIV prevention and care continuum, which includes strategies to reduce the barriers to testing and expanding HIV testing coverage to a wider population for more proactive case finding¹².

Barriers to HIV testing and normalisation of testing

9. Barriers to HIV testing can occur at societal level, under the healthcare system or due to individual factors¹¹. Social stigma and the fear related to the diagnosis of HIV create barriers for individuals to seek HIV testing. Location and capacity of the testing services may limit the accessibility to testing services. Healthcare providers may lack the updated knowledge and awareness on the indications for testing, and the necessary communication skills for conveying the test results and to advise on subsequent referral.

10. These barriers can lead to delay in diagnosing HIV which would result in not only serious illness in an individual, but also onward transmission in the community. Studies conducted in Asia identified several factors that could have contributed to HIV late presentation, including fear of stigmatisation and discrimination to both testing and accessing treatment; lack of perceived risk and lack of knowledge by individuals; and lack of referral for testing by healthcare providers¹⁰.

11. Integration of HIV testing to other medical services could reduce stigma, normalise HIV testing and increase testing coverage. Previous local study has demonstrated HIV testing has a high acceptance in general outpatient clinics¹³. HIV testing should be introduced in services which care for disease with similar route of transmission, e.g. viral hepatitis and other sexually transmitted infections. Training to healthcare providers should be conducted to update the local HIV epidemiology and for capacity building to strengthen their role along the HIV prevention and care continuum. The public can be engaged through campaigns that focus on health education, raising awareness and stigma reduction.

12. Adopting a strategic mix of different testing approaches such as inclusion of the options of HIV self-testing and focused community-based testing services targeting key populations, amongst existing healthcare facilities based testing, could potentially lead to service expansion and increase programme coverage. Self-testing and community-based testing services provided by trained lay providers reduce individual barrier for HIV testing and are important components of a comprehensive HIV prevention care package. Apart from different non-governmental organisations offering HIV self-testing as an option, the Department of Health has launched the HIV self-testing service (<https://www.hivtest.gov.hk/en/index.html>) since November 2023 with good utilisation and acceptance.

I) Overarching principles to deliver HIV testing services

Key recommendations:

- *Service providers offering HIV testing services should follow the World Health Organization (WHO) “5 Cs” standard (Consent, Confidentiality, Counselling, Correct test results and Connection/linkage to prevention, care and treatment).*
- *A status-neutral approach, that delivers comprehensive services addressing the needs of individuals regardless of their HIV status, should be adopted.*

13. All settings providing HIV testing services should observe and follow the WHO 5Cs standard¹⁴.

- **Consent:** refer to “Consent and pre-test information”
- **Confidentiality:** see below
- **Counselling:** refer to “Post-test care and counselling and referral pathway”
- **Correct test results:** refer to “How to test” and “Laboratory diagnostic algorithm”
- **Connection/linkage to prevention, care and treatment:** refer to “Post-test care and counselling and referral pathway”

Confidentiality

14. Individuals should be informed about HIV testing prior to the test being performed. The environment where HIV testing is conducted should be safe and supportive to ensure privacy and confidentiality during the process, and an individual’s HIV test result should be kept confidential by all means. This is the basis for trust that makes quality care possible. In the era of electronic medical records, enhanced information security is crucial in preventing inadvertent disclosure.

15. Unless there is consent by an individual, it is inappropriate to disclose the test results to a third party. In the event that an individual has lost mental capacity to comprehend such results and health care decisions

based on HIV status need to be made, the guardian, if available, should be informed and guided to make decision for the best interests of the individual. In the absence of a guardian, the doctor may proceed with treatment that is necessary and beneficial.

16. In the attempt to identify at risk partners for counselling and testing, the question may arise as to whether involuntary disclosure is necessary in order to protect a third party at risk. In this regard, general guidance is provided by the Medical Council of Hong Kong¹⁵. Each case should be examined carefully on its own merits and referred to the institutional ethics committee (or its equivalent) before any decision is made to breach confidentiality.

Status neutral approach

17. A status neutral approach¹⁶ to HIV prevention and care emphasises the need to deliver comprehensive health services to people during every engagement irrespective of their HIV status. This approach carries the benefits of providing universal access to services without stigmatising or segregating people based on their HIV status, enhancing prevention efforts and reducing stigma. For individuals screened negative for HIV infection, they should be offered advice on HIV combination prevention and linked to relevant preventive services, whereas individuals screened positive for HIV infection should be counselled on subsequent care plan and linked to HIV care facilities promptly.

II) Who to get tested

Key recommendations:

HIV testing is indicated in the following contexts:

A) As part of integral clinical care with an “opt-out” approach in the following settings:

- Pregnant women at antenatal checkup under the Universal Antenatal Testing Programme (UATP), retesting required for those with ongoing risk of acquisition during pregnancy*
- People diagnosed with tuberculosis*
- Attendees of methadone clinics*
- Attendees of sexual health clinics or people seeking testing and management of sexually transmitted infections*

B) For individuals with epidemiological or behavioural risk factors that put them at increased risk of exposure to HIV:

- People who have multiple sex partners, or people whose sex partner(s) have multiple sex partners*
- Sex workers and their clients*
- People who inject drugs*
- Men who have sex with men (MSM)*
- People in the transgender community who have sex with men*
- Sex partner of people living with HIV with unknown treatment status or detectable viral load*
- People originated from areas of unknown or high HIV prevalence, or whose sex partners did*

C) For individuals with clinical indicators:

- Individuals receiving HIV pre- or post-exposure prophylaxis*
- Individuals attending healthcare facilities for drug-related mental health conditions associated with risk behaviours, in particular those associated with methamphetamine and related psychostimulant use*
- People with a diagnosis that would impact the way either HIV or the disease itself is managed, e.g. people with hepatitis B infection, in particular those who are indicated for antiviral treatment*

- *People presented with AIDS-defining clinical conditions (see **Table 1**)*
- *People presented with HIV indicator conditions (see **Table 1**), including:*
 - *People diagnosed with a condition that shares a transmission route with HIV, such as any sexually transmitted infections (STIs), hepatitis B, hepatitis C, or mpox*
 - *People presented with any symptoms or conditions that suggest underlying dysregulated immunity which could be indicative of underlying HIV infection, e.g. recurrent zoster infection, chronic diarrhea or weight loss of unknown cause*

D) For general population without the above-mentioned factors:

- *People who have had sex and are uncertain of their own HIV status*
- *Anyone with self-initiated request to a health-care service for an HIV test*

As part of integral clinical care with an “opt-out” approach

18. With an “opt-out” approach, the HIV testing is offered as standard of care where an individual can actively decline if they do not wish to be tested. Opt-out testing was found to be associated with a higher test uptake rate when compared with opt-in testing¹⁷.

19. Integration of HIV testing into other relevant healthcare services improves test acceptance and coverage; as well as normalises HIV testing. Currently, HIV testing is offered to all pregnant women at antenatal checkup under the UATP¹⁸. Same approach has been adopted for all persons diagnosed with tuberculosis and attendees of methadone and sexual health clinics. Overall it had been well implemented and highly accepted.

Individuals with epidemiological or behavioural risk factors that put them at increased risk of exposure to HIV

20. People who have multiple sex partners, or people whose sex partner(s) have multiple sex partners; sex workers and their clients; people

who inject drugs; men who have sex with men (MSM); people in the transgender community who have sex with men; sex partner of people living with HIV with unknown treatment status or detectable viral load; and people originated from areas of unknown or high HIV prevalence, or whose sex partners did are generally recognised as having epidemiological or behavioural risk factors that are associated with increased risk of exposure to HIV. They are routinely recommended for HIV testing in various guidelines^{19,20,21,22}.

Individuals with clinical indicators

21. All persons receiving HIV post-exposure prophylaxis (PEP) should be tested for HIV infection before initiation of prophylaxis and upon follow up²³. Individuals adopting HIV pre-exposure prophylaxis (PrEP) should receive HIV testing before initiation and regularly at 3-month interval to allow timely diagnosis of HIV infection in case of the rare occurrence of failure while on PrEP²⁴. Failure for early diagnosis under these circumstances increases the risks for resistance emergence to antiretroviral medications.

22. Methamphetamine and related psychostimulant use during chemsex (defined as the use of drugs in a sexualised context by MSM) is known to be associated with a higher risk of HIV and STI acquisition. Individuals attending healthcare facilities for drug-related mental health conditions should be enquired about risk behaviours and offered HIV testing.

23. People with a diagnosis that would impact the way either HIV or the disease itself is managed should be tested for HIV. Hepatitis B infection, for example, in particular those who are indicated for antiviral treatment, should be tested for HIV because of treatment interaction and the potential development of drug resistance of the otherwise undiagnosed HIV infection.

24. Apart from those presenting with AIDS-defining clinical conditions, people presenting with symptoms and/or signs consistent with an HIV indicator condition, which is defined as any medical condition which associated with an undiagnosed HIV seroprevalence of ≥ 1 per 1 000^{19,21} should also be offered HIV testing. HIV indicator conditions include medical conditions that have the same transmission mode as HIV, e.g. STIs, hepatitis

B, hepatitis C or mpox, and conditions that suggest underlying dysregulated immunity, e.g. recurrent zoster infection, chronic diarrhea or weight loss of unknown cause. Studies have demonstrated that late presenters might have presented to the healthcare system with different HIV indicator conditions prior to the diagnosis of HIV^{25,26}, highlighting the opportunities that healthcare professionals, other than those specialising in HIV care, could assist in offering HIV testing during these encounters to facilitate earlier HIV diagnosis. A list of AIDS-defining clinical conditions and HIV indicator conditions are shown in *Table 1*.

General population

25. Absence of the above-mentioned clinical, epidemiological or behavioural indications does not preclude the need for HIV testing. Study has demonstrated offering one-time screening for non-key populations at countries with extremely low HIV prevalence to be cost-effective²⁷.

26. Different jurisdictions have implemented different strategies to screen individuals according to their local epidemiology and contexts, for instance

- The Centers for Disease Control and Prevention of the United States (US CDC) recommends all patients between the ages of 13 and 64 get tested for HIV at least once as part of routine health care²⁰.
- The Singapore National HIV Programme recommends HIV screening to be offered to all persons aged more than 21 years old at least once in their lifetimes, except for females above the age of 65 years without risk factors warranting repeated testing as they have a seroprevalence of less than 0.1% in the local population²².
- The British HIV Association is recommending all patients accessing primary and secondary healthcare in areas of high (2-5 per 1 000) and extremely high HIV seroprevalence (>5 per 1 000), including emergency departments to receive HIV testing²¹.

27. In Hong Kong, given that over 95% of the new cases reported locally contracted HIV via sexual contact, **it is recommended that people who have had sex should get tested at least once.** This strategy aims at increasing the uptake of HIV testing locally to allow earlier detection and identification of individuals with HIV infection, especially among those who lack the behavioural and epidemiological risk factors and are disproportionately represented among late presenters.

28. It is important to note that obtaining a detailed history is not a prerequisite for testing, especially in the context of a client-initiated testing in the absence of indications. In this case, a person's preference not to disclose risk factors should be respected and HIV testing should be conducted.

III) How frequent to get tested

Key recommendations:

- *People who have had sex and are uncertain of their own HIV status should get tested at least once*
- *Those with new or ongoing risk exposure should undergo regular HIV testing*
- *Pregnant woman should receive retesting at 34-36 weeks of pregnancy if they or their sex partners have ongoing risks for HIV acquisition*

29. Recommendations for repeat testing should be based on assessment for any risk exposure and clinical judgement, for example, partner change, emergence of a new clinical indicator condition, ongoing risk exposure or those using PrEP as part of ongoing monitoring etc.

30. Amongst all, SCAS has recommended sexually active MSM with higher risk behaviours, especially if there have been multiple partners, unprotected sexual contact (oral, genital or anal) with a new partner with unknown HIV status, and practice of chemsex, to undergo 3-monthly testing²⁸.

31. SCAS has also recommended retesting for pregnant women at 34-36 weeks of gestation if they (or their sex partners) have epidemiological and behavioural risk factors that put them at increased risk of HIV infection during the antepartum period¹⁸.

IV) Consent and pre-test information

Key recommendations:

- *Verbal consent is sufficient for HIV testing*
- *Pre-test information should be concise and tailored based on one's knowledge and prior experience with HIV testing. Opportunities should be provided for users to discuss any concerns and ask questions*

Consent

32. Pre-test informed consent is essential as it respects client autonomy and is regarded as prudent considering the still stigmatising nature of an HIV diagnosis. Verbal consent is sufficient and a separate written consent form for HIV testing is not required or recommended.

33. When offering HIV testing to minors or a mentally incompetent person who are unable to give consent on their own, informed consent is sought from the parent or guardian. It is necessary to ensure that consent in this context be based on the best interests of the subject, and not those of the person giving consent. The capacity of a minor under 18 years of age to give consent on their own depends on one's ability to understand the nature and implications of HIV testing and to weight up options. Thorough explanation and discussion would be necessary to ensure that the minor has this capacity.

Pre-test information

34. Concise pre-test information should include the type of test, reasons for testing (if deemed necessary), the benefits of testing, the meaning and implications of a positive or negative result and the available services related to HIV prevention, treatment and care.

35. It should be noted that pre-test information should not be overcomplicated as it might otherwise lead to unintentional deterrence against testing. Its content can be tailored based on one's knowledge and prior experience with HIV testing, e.g. while a first-time tester would need more thorough education on the implications of a HIV test, it might not be necessary to deliver the same amount of information to a regular tester or when testing low-risk individuals during the course of clinical care. (*Appendix 1*)

V) How to test

Key recommendations:

- *Different HIV testing options can be employed to provide person-centred care and to address the needs of a variety of population groups. These include i) conventional laboratory-based testing, ii) point-of-care testing, and iii) self-testing*
- *It is essential that service providers offering HIV testing with either of these options are familiar with the limitations of the type of testing that they are providing in their facility, and can communicate these limitations to their service users. And in the case of self-testing, that the package insert or any other attaching information address these limitations*

Testing options

36. Different HIV testing options can be employed to provide person-centred care and to address the needs of a variety of population groups. These include:

- i) **conventional laboratory-based testing** that involves taking blood from a vein and sending the specimen to a laboratory where trained technicians perform the test, followed by confirmatory tests if necessary;
- ii) **point-of-care testing (POCT) / rapid test** that involves obtaining a blood drop from a finger-tip or oral fluid by swabbing the gums, performing the test on-site and reading the result in about 20 minutes by a healthcare worker or a trained community worker; and
- iii) **HIV self-testing** where an individual collects his/her own specimen, performs a test and interprets the test result by oneself to check his/her own status. The procedure of HIV self-testing and POCT is the same. The only difference is that self-testing requires the users to read and interpret the results by themselves. HIV self-testing provides opportunities to improve access to testing and increase frequency of testing²⁹ among people who might otherwise experience barriers associated with conventional testing. It has been demonstrated to be highly acceptable and easy to use with little to no support from trained staff³⁰.

37. It is essential that service providers offering HIV testing with either of these options are familiar with the limitations of the type of testing that they are providing in their facility and can communicate these limitations to their service users. And in the case of self-testing, that the package insert or any other attaching information address these limitations. Please refer to **Table 2** for the comparison between the three testing options.

Window period

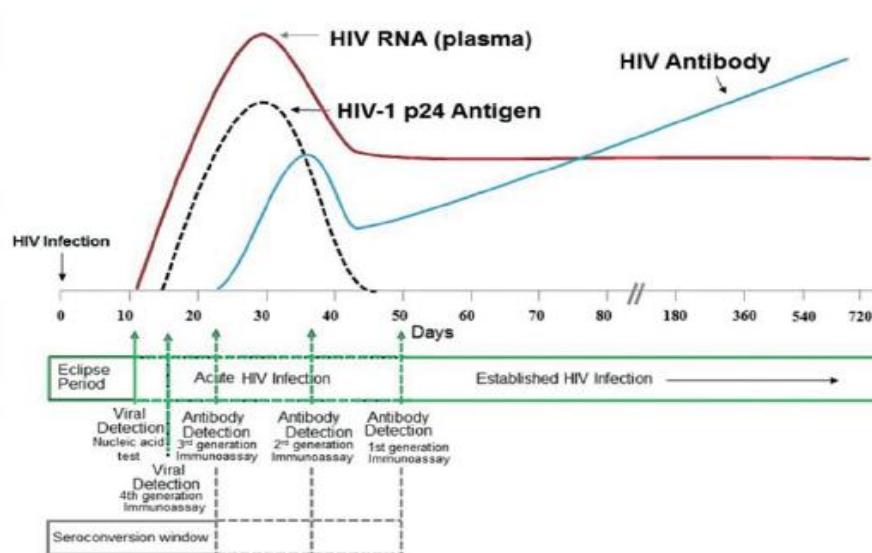
38. No HIV test can detect HIV infection immediately after exposure. It is important to keep in mind the HIV test window period, which is the time interval between HIV exposure and accurate detection of HIV infection.

39. HIV test window period varies with the type of HIV test and the exposed individual's immune response. HIV antibody usually takes 3-4 weeks to develop, while other markers such as p24 antigen, which could be detected by HIV antigen/ antibody combination assay (also known as 4th generation test), could be detected earlier. HIV tests have evolved considerably since the start of the epidemic, and have developed different generation of tests. Earlier generation of tests is associated with a longer window period. Understanding the window period of different HIV tests (*Figure 1*) is crucial for service providers to offer the appropriate test, at the most appropriate time, and to advise accordingly.

Figure 1 - Diagram showing the early dynamics of virus replication and antibody development, and the sequence of appearance of laboratory markers for HIV-1 infection*

x-axis: approximate time (days since index exposure when infection takes place) for reactivity using first-, second-, third-, and fourth-generation enzyme immunoassays and molecular tests

y-axis: units not included as the magnitude differs for RNA, p24 antigen and HIV-antibody



40. Window period of different tests

- i) **conventional laboratory-based testing:** 18-45 days (in Hong Kong, most laboratories use 4th generation HIV antigen/ antibody combination assay as screening)
- ii) **point-of-care testing (POCT) / rapid test:** 18-90 days (detect HIV antigen/ antibody) / 23-90 days (detect HIV antibody only)
- iii) **HIV self-test:** 23-90 days (various products detecting either HIV antibody only or detecting both HIV antigen/antibody)

41. A negative HIV antibody test performed 90 days (i.e. around 3 months) from an exposure can safely declare an individual not infected by HIV in the absence of further exposure. This approach considers all antibody-based tests associated with different window periods.

*Source: Laboratory Testing for the Diagnosis of HIV Infection: Updated Recommendations. Centers for Disease Control and Prevention and Association of Public Health Laboratories, 2014.

42. All reactive POCT or self-test results must be followed by submission of blood specimen to the laboratory for confirmatory testing.

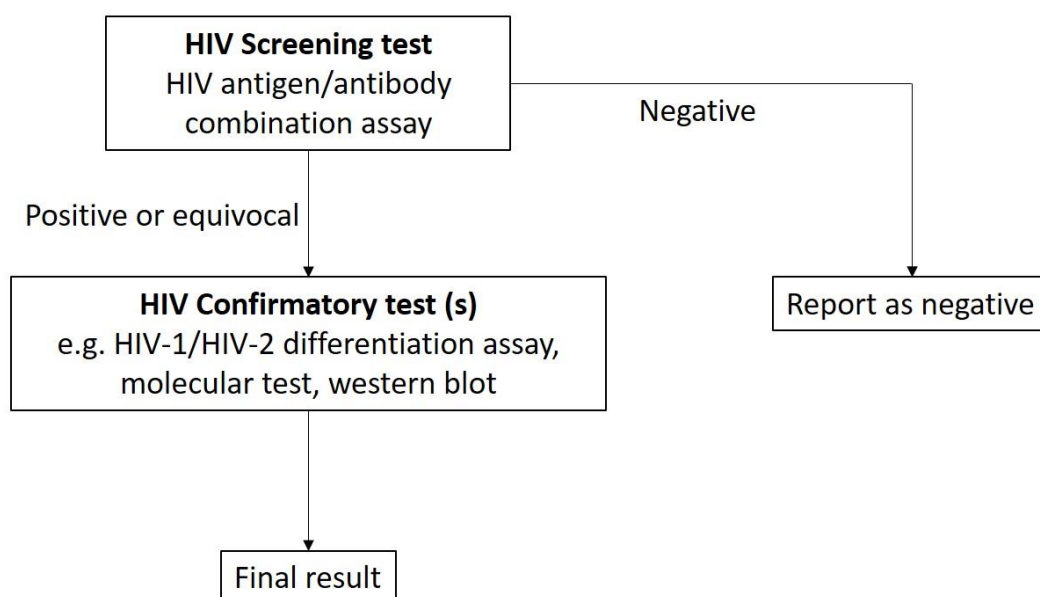
VI) Laboratory diagnostic algorithms

Key recommendations:

- *A two-step approach should be used in establishing the diagnosis of HIV. All specimens screened positive or equivocal should be subjected to confirmatory laboratory testing. HIV testing should be repeated if result was indeterminate; with recent exposure within the preceding 3 months; or as clinically indicated*
- *Exposure to long-acting injectable cabotegravir (CAB-LA) as PrEP affects viral replication, HIV antibody response and symptomatology. All individuals using PrEP; especially CAB-LA, should be under regular monitoring of HIV status by specialised units with experiences in following up PrEP users*

43. A two-step approach should be used in establishing the diagnosis of HIV (**Figure 2**)³¹. All specimens screened positive or equivocal should be subjected to confirmatory laboratory testing. Examples of confirmatory test include western blot and HIV-1/HIV-2 antibody differentiation immunoassay. HIV-1/HIV-2 antibody differentiation immunoassay is gaining popularity for HIV confirmation due to its faster turn-around time, easier operation and better identification of HIV-2 infection as compared with western blot. Molecular tests could also be used in case of diagnostic uncertainty, in addition to diagnosing HIV infection among infants and screening of blood products.

Figure 2 - HIV laboratory diagnostic algorithm



44. HIV testing should be repeated if result was indeterminate, with recent exposure within the preceding three months or as clinically indicated.

45. An area with emerging concern would be a phenomenon called long-acting early viral inhibition syndrome (LEVI Syndrome) where there is a delay in HIV presentation and diagnosis resulting from exposure to long-acting injectable cabotegravir (CAB-LA) as PrEP³². Viral replication is suppressed with diminished or delayed HIV antibody response affecting the sensitivity of different HIV testing modalities. Absence or minimal symptoms from acute HIV infection may result in delay in seeking medical attention. Overall, a failure in timely diagnosis and treatment leads to increased risk for development of drug resistance towards integrase inhibitors. The US CDC currently recommends the use of both HIV antibody/antigen combined assay and molecular tests for monitoring of HIV status while an individual is taking PrEP³³ whereas the latest WHO guideline has not yet incorporated this recommendation. Special assessment and consideration should be made by specialists with experiences in following up PrEP users when offering HIV testing to individuals intended to start PrEP, taking PrEP or have recently stopped using PrEP. Tailored counselling and assessment should be provided with reference to the individual's risks for HIV acquisition, exposure, and need of other preventive measures.

VII) Post-test care and referral pathway

Key recommendations:

- *Positive HIV test result is preferred to be delivered face-to-face where privacy can be ensured. Attention should be paid to the acceptance of test result by the individual and referral for counselling and support group should be made promptly as needed*
- *Services providing POCT / rapid HIV testing should have a clear linkage to clinical and pathology services for the conduct of confirmatory testing*
- *Individuals diagnosed with HIV should be linked to clinical care as soon as possible*
- *Healthcare providers are strongly encouraged to report all HIV diagnosis to the HIV/AIDS voluntary reporting system using the HIV/AIDS report form (DH2293)*
- *Individuals who are tested negative and with ongoing risk of HIV infection should be counselled for regular testing and adoption of tailored preventive strategies to minimise the risk of HIV acquisition*

Post-test care and counselling

46. Although HIV infection is now a manageable chronic health condition, a positive diagnosis of a lifelong condition remains a significant psychosocial event. Post-test care and counselling is a crucial component of HIV testing and should encompass key elements to ensure that individuals receive comprehensive support and information (**Appendix 2**). Service providers should, irrespective of the specific test result, ensure that appropriate mechanisms and protocols are in place for delivering and communicating the test results to the testers.

47. Positive HIV test result is preferred to be delivered face-to-face where privacy can be ensured. Concerns and fear towards the diagnosis should be addressed with empathy and sensitivity. Attention should be paid to the acceptance of test result by the individual and referral for counselling and support group should be made promptly as needed.

48. Services providing POCT, either in community-based testing services or in outreach settings, should establish a clear workflow to link to clinical and/or laboratory services for the conduct of confirmatory testing. Services providing self-test kits to their clients should include information to facilitate the users to seek assistance and support as needed.

Linkage to care for those with positive HIV test result

49. All efforts must be made to ensure that individuals with HIV are linked to clinical care as soon as possible, preferably within 2 weeks after diagnosis. Individuals should be counselled on HIV as a chronic condition which could be managed with effective ART and the benefits of early treatment initiation. The concept of “**Treatment as Prevention**” and “**Undetectable = Untransmittable**” can be introduced at the time of diagnosis to encourage linkage to care and subsequent adherence with treatment. In Hong Kong, there are currently three public HIV clinics providing HIV-related medical services with a multidisciplinary approach to provide comprehensive care to PLHIV (*Table 3*).

Reporting to the HIV/AIDS voluntary reporting system

50. The HIV/AIDS voluntary reporting system has been in place since 1984 and is an anonymous and confidential system (<https://www.aids.gov.hk/english/surveillance/form.html>). Data collected is crucial for understanding the local HIV epidemiology and analysis of the data can inform relevant policies in driving the HIV prevention and control efforts. Aggregate statistics on HIV/AIDS is released regularly at www.aids.gov.hk.

51. While HIV infection is not a statutory notifiable disease in Hong Kong, physicians and providers of HIV testing are strongly encouraged to report cases of newly diagnosed HIV/AIDS to the HIV/AIDS voluntary reporting system using the **HIV/AIDS report form (DH2293)** (*Appendix 3*). The completed form can be submitted electronically, via fax or mail to Special Preventive Programme under the Department of Health. All data submitted will be handled in the strictest confidence.

Linkage to preventive services for those with negative HIV test result

52. For individuals who are tested negative but with ongoing risks of HIV infection, counselling for regular testing and adoption of different preventive strategies to minimise the risk of HIV acquisition should be offered, and referral to preventive services should be offered where applicable. Currently, the Department of Health is running a one-stop comprehensive sexual health clinic offering integrated care for HIV/viral hepatitis/STI prevention and care for gay and transgender community with high-risk sexual behaviours (https://www.21171069.gov.hk/en/bye_bye_stis/checkup.html).

Summary

53. HIV testing marks the beginning of both the HIV prevention and care continuum under the status neutral approach and plays an important role in achieving the UNAIDS goal of ending the HIV epidemic by 2030. Change in local disease epidemiology calls for a review of testing recommendations and expansion of HIV testing to the general population. The goal of HIV testing is to increase the number of people who are aware of their HIV status and to facilitate referral to engage them to respective prevention and care services. Coordinated efforts between healthcare providers and community stakeholders are required to create demand and improve acceptance for HIV testing, reduce barrier for testing and to ensure effective delivery of HIV testing services based on the local context.

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Table 1 - AIDS-defining conditions and HIV indicator conditions

(Adopted from HIV Manual, Fourth Edition, ASHM. National HIV testing policy 2020 and British HIV Association/British Association for Sexual Health and HIV/British Infection Association adult HIV testing guidelines 2020)

	AIDS-defining conditions	HIV indicator conditions
Sexually transmitted infections (STI)		- Gonorrhoea, chlamydia, hepatitis B or C, syphilis or other STI
Respiratory infections	- Tuberculosis (only if CD4 <200 cells/uL) - Pneumocystis jirovecii pneumonia - Recurrent bacterial pneumonia - Candidiasis, bronchial/ tracheal/ pulmonary - Coccidioidomycosis, disseminated or pulmonary - Herpes simplex bronchitis or pneumonitis	- Aspergillosis - Invasive pneumococcal disease
Neurological conditions	- Cerebral toxoplasmosis - Primary cerebral lymphoma - Cryptococcal meningitis - Progressive multi-focal leukoencephalopathy - Encephalopathy, HIV-related	- Aseptic meningitis/ encephalitis - Cerebral abscess - Space occupying lesion of unknown cause - Guillain-Barre syndrome - Transverse myelitis or multiple sclerosis-like disease - Mononeuritis - Peripheral neuropathy - Subcortical dementia - Leukoencephalopathy
Dermatological conditions	- Kaposi sarcoma	- Severe seborrhoeic dermatitis - Severe or atypical psoriasis - Multi-dermatomal or recurrent herpes zoster - Mpox

	AIDS-defining conditions	HIV indicator conditions
Gastroenterological conditions	-Persistent cryptosporidiosis (>1 month's duration) -Oesophageal candidiasis -Herpes simplex oesophagitis -Isosporiasis, chronic (>1 month's duration)	-Chronic oral candidiasis -Oral hairy leucoplakia -Chronic diarrhoea of unknown cause -Weight loss of unknown cause -Non-typhoidal salmonella (bacteraemia, osteomyelitis and septic arthritis), recurrent enteric salmonellosis, shigellosis or campylobacter -Hepatitis B or C infection
Oncology	-Non-Hodgkin lymphoma	-Anal cancer or high-grade anal squamous intraepithelial lesion -Penile cancer -Seminoma -Human papillomavirus-related head and neck cancer -Hodgkin lymphoma -Castleman disease
Gynaecology	-Cervical cancer, invasive	-Vaginal, vulval or cervical high-grade intraepithelial lesion
Haematology		-Any unexplained blood dyscrasia, including anaemia, thrombocytopenia, neutropenia or lymphopenia
Ophthalmology	-Cytomegalovirus retinitis (with loss of vision)	-Infective retinal diseases including herpesvirus and toxoplasma
Ear, nose and throat		-Lymphadenopathy of unknown cause -Chronic parotitis -Lymphoepithelial parotid cysts
Dental		-Acute necrotising ulcerative stomatitis, gingivitis, or periodontitis

	AIDS-defining conditions	HIV indicator conditions
Others	-Cryptococcosis, extrapulmonary -Cytomegalovirus (CMV) disease (other than liver, spleen or nodes) -Herpes simplex: chronic ulcer(s) (>1 month's duration) -Histoplasmosis, disseminated or extrapulmonary -<i>Mycobacterium</i> tuberculosis; extrapulmonary -<i>Mycobacterium</i> tuberculosis involving cervical lymph nodes (only if CD4 <200 cells/uL) -<i>Talaromyces marneffei</i> infection, disseminated -<i>Mycobacterium</i>, other species or unidentified species, disseminated or extrapulmonary -Salmonella septicaemia, recurrent -Wasting syndrome due to HIV	-Mononucleosis-like syndrome -Pyrexia of unknown origin -Any lymphadenopathy of unknown cause

Table 2 – Comparison between different HIV testing modalities

	Conventional laboratory-based testing	Point-of-care testing/ Rapid test	Self-testing
Cost	Free service provided by Government service^ and some local AIDS non-governmental organisations (NGOs)	Free service provided by Government service^ and some local AIDS NGOs	- Free self-test kits available under Government service^ and some local AIDS NGOs - Self-purchase at community outlets
Privacy and confidentiality	- Anonymous and confidential in AIDS Hotline of Department of Health and local AIDS NGOs - Personal information required if performed in hospitals or clinics other than the above	Anonymous and confidential in AIDS Hotline of Department of Health and local AIDS NGOs	Greater privacy with autonomy
Turnover time and accuracy of result	Confirmatory result available in 5-7 days and is a definitive diagnosis	- Results available in 20-30 minutes. Positive results require another confirmatory test - Misinterpretation is not common with training test performers	- Self-testing results available in 20-30 minutes. Positive results require another confirmatory test - Risk of misinterpretation of results by users themselves

	Conventional laboratory-based testing	Point-of-care testing/ Rapid test	Self-testing
Accuracy (Sensitivity and Specificity)	• Very high accuracy and regarded as gold-standard	• High accuracy with trained personnel	• Accuracy slightly reduced in untrained hands • Risk of procedural error
Window period	• Shorter window period with the 4th generation technique employed in Hong Kong Government laboratory	• Depends on the generation of test adopted. Shorter window period when 4th generation test kits are used	• Longer window period if lower generation kits are used
Counselling, support service and linkage to care	• Good	• Good	• Risk of insufficient counselling and support service • Lack of or delayed linkage to care
Other advantages and disadvantages			• Greater convenience in time and space

^Information on HIV, HIV testing, booking of free AIDS Counselling and Testing Service and online ordering of self-test kits are available at <https://www.hivtest.gov.hk>

Table 3 - Public HIV Clinics in Hong Kong

Clinic	Address	Contact
Kowloon Bay Integrated Treatment Centre, Department of Health	Kowloon Bay Health Centre, 9 Kai Yan Street, Kowloon Bay	Tel: 2117 0896 Fax: 2117 0809
HIV Clinical Service, Queen Elizabeth Hospital, Hospital Authority	7/F, Block T, Queen Elizabeth Hospital	Tel: 3506 5855 Fax: 2783 7415
Infectious Disease Special Medical Clinic, Princess Margaret Hospital, Hospital Authority	Block K, Princess Margaret Hospital	Tel: 6461 0613/ 2990 2065 Fax: 2990 2046

Appendix 1 – Pre-test counselling^{19,34}

Principle for pre-test counselling

- to encourage individuals to return for test results, provide risk-reduction counselling and prepare individual in coping with a potential HIV-positive diagnosis;
- to provide concise messages to people receiving HIV testing with general information, answering their questions, addressing their concerns and offering an opportunity to refuse testing; and
- the information provided should be based on individual's needs and understanding of HIV infection.

The following information can be tailored based on one's knowledge and prior experience with HIV testing to cover their need before conducting the test:

(1) Type of test

- the type of test being offered and the testing procedure;
- in case of a POCT being offered, the individual should be counselled that a confirmatory test would be needed if the test shows a positive result;

(2) Benefits of testing

- the benefits of HIV testing, implications of undiagnosed HIV, and the potential implications of not being tested;
- benefits of early ART and the fact that people with HIV who achieve and maintain an undetectable viral load cannot transmit HIV sexually to their partners (U=U);

(3) Test results

- the confidentiality of the test result and any information shared by the individual;
- the meaning and implications of a positive or negative result;

(4) Available services related to HIV prevention, treatment and care

- the services available to those who are tested positive;
- the importance of disclosure and encouragement for partner testing;

- prevention options, including risk and harm-reduction information, that are relevant and available, especially for those with ongoing risks;

(5) Other related issues

- the individual's right to refuse testing and that declining testing will not affect the client's access to HIV-related services or general medical care;
- the importance of telling the provider if one was previously diagnosed with HIV; the potential for incorrect results if a person already on ART is tested and the services available if those taking ART want further testing; and

(6) The opportunity to ask further questions

Appendix 2 – Post-test counselling³⁴

Principles for post-test counselling

- to provide clear and concise counselling messages tailored according to individual's test result and situations;
- to refer individual tested positive for linkage to care as soon as possible, and preferably to facilities that support rapid ART initiation; and
- to facilitate linkage to HIV prevention, treatment and care services and other relevant support services.

The following messages are to be considered when communicating with individuals who have received HIV testing:

(1) Test results

- the confidentiality of the test result and any information shared by the individual;
- the meaning of a positive result and the follow up actions;

(2) Available services related to HIV prevention, treatment and care

- HIV prevention, treatment and care services and other relevant support services and the benefits, depending on one's HIV status and presence of any ongoing risk behaviour;

(3) Other related issues

- need of retesting (if tested within the window period) and advise on frequency of testing based on individual risk assessment; and

(4) The opportunity to ask further questions

Special considerations for people tested positive for HIV:

- clear communication on
 - **meaning of the HIV-positive diagnosis** – HIV is a manageable chronic health condition requiring lifelong treatment, and with treatment, people living with HIV can expect a normal or near-normal life expectancy;
 - **benefits of timely/ rapid ART initiation** – ART is safe with minimal side effects, it can halt viral replication and lead to

restoration of their immunity, by being adherent to treatment, the viral load can remain suppressed, rendering a zero chance of transmitting HIV to their partner(s) via sexual contact (Undetectable = Untransmittable);

- **for women diagnosed with HIV during antenatal care** – importance of immediate ART initiation to safeguard maternal health as well as to prevent mother-to-child transmission; prompt referral to HIV centre to line up multidisciplinary care;
- it is important to recognise that some people will need time to adjust to their positive status and may need counselling and further support for choosing when and how to link to service and to start ART;
- discuss any barrier to linkage to ART and address concerns about ART and side effects;
- assess any mental health issues, discuss immediate concerns and help the individual to identify others who might provide emotional and social support if needed, refer to mental health and other support services as required; and
- discuss the need for partner testing, support for mutual disclosure and educate on ways to prevent HIV transmission; provide condoms, lubricant and guidance on their use.

Other considerations:

- although uncommon, the test result may come back as indeterminate or inconclusive, which means that an individual has discrepant results with the screening tests and a negative confirmatory result (e.g. first screening test reactive, second test non-reactive, and third test reactive) and could not be given an HIV-positive or HIV-negative diagnosis. Multiple factors can give rise to this indeterminate result including when an individual is undergoing seroconversion during the window period. All indeterminate or inconclusive test results should be offered retesting in 14 days.
- all positive POCT/self-test results should be referred for confirmatory testing. Self-testers in the community with positive results may need support and encouragement to receive confirmatory test and linkage to care. Community outreach programmes using POCT should make every effort to prevent loss to follow-up along the HIV care continuum.

Appendix 3 – DH 2293

DH2293, revised January 2023

DEPARTMENT OF HEALTH HIV/AIDS Report Form

The HIV/AIDS voluntary reporting system has been in place since 1984. All doctors are encouraged to report patients with HIV/AIDS and to update status of the previously reported cases where appropriate. This is an anonymous and confidential system. Data collected is crucial for understanding the HIV epidemiology in Hong Kong and is used in global analysis only. Aggregate statistics are released quarterly and can be obtained at www.aids.gov.hk. For any query, please call 3143 7225 or email us at aids@dh.gov.hk. Completed form can be faxed to 2297 3239 or mailed to Special Preventive Programme, Centre for Health Protection, Department of Health.



Guidance notes
for filling the form

Please complete ALL sections and '✓' in the appropriate box.

Section (A) – Report of HIV

[1] THIS is a ☐ NEW report or ☐ UPDATE of previous reported case

[2] Your reference code number¹: _____

[3] Does the patient have a HK identity card? ☐ Yes ☐ No Document ID first 5 digits: _____

[4] Sex at birth²: ☐ M ☐ F (Please fill in box 1) ☐ Others Gender identity³: ☐ M ☐ F ☐ Non-binary

[5] Date of birth: ____ / ____ / ____ (dd/mm/yyyy) OR Age at last birthday: _____

[6] Ethnicity: ☐ Chinese ☐ Asian, specify: _____ ☐ Caucasian ☐ Black ☐ Others: _____ ☐ Unknown

[7] Suspected risk(s) for HIV infection⁵ (maximal two risks with order)

☐ Sex with men ☐ Sex with women ☐ Sex with both men and women

☐ Injecting drug use ☐ Received medical procedure

☐ Occupational (Health care worker: ☐ Yes ☐ No)

☐ Organ transplant/transfusion of blood/blood products (Haemophilia: ☐ Yes ☐ No) Year: _____

☐ Perinatal, mother's reference number: _____

☐ Others, please specify: _____

☐ Asked, but risk undetermined

☐ Not asked

Box 1

Pregnant⁴? ☐ No ☐ Yes

Gravida ____ Para ____ LMP ____ / ____ / ____ (dd/mm/yyyy)

Obstetric follow up clinic/ hospital: _____

Plan: ☐ TOP ☐ Continue pregnancy

Expected hospital/place of delivery: _____

[8] Suspected place of infection: ☐ Hong Kong ☐ Mainland China, specify: _____ ☐ Others, specify: _____

☐ Asked, but undetermined ☐ Not asked

[9] Date of laboratory diagnosis in HK: ____ / ____ / ____ (ddmm/yyyy)

[10] Confirmation test⁶: ☐ Yes ☐ No If Yes, by ☐ Western Blot ☐ Confirmatory Assay ☐ PCR ☐ others _____

[11] Name of Laboratory: _____ [12] Laboratory Number⁷: _____

[13] Previous HIV diagnosis outside HK: ☐ No ☐ Yes If yes, date: ____ / ____ / ____ (dd/mm/yyyy) place: _____

[14] Any previous negative HIV test: ☐ No ☐ Yes If yes, date of last negative HIV test : ____ / ____ / ____ (dd/mm/yyyy)

[15] CD4 (cells/μl): _____ Date: ____ / ____ / ____ (dd/mm/yyyy)

Section (B) – Report of AIDS

[17] Has the patient developed AIDS⁸: ☐ Yes ☐ No (Go to Section C)

[18] If yes, the AIDS defining illness(es) is (are):

(i) _____ Date of diagnosis: ____ / ____ / ____ (dd/mm/yyyy)

(ii) _____ Date of diagnosis: ____ / ____ / ____ (dd/mm/yyyy)

(iii) _____ Date of diagnosis: ____ / ____ / ____ (dd/mm/yyyy)

[19] CD4 (cells/μl) at AIDS: _____ Date: ____ / ____ / ____ (dd/mm/yyyy)

Section (C) – Report of Outcome

[20] Has the patient referred to/seen at public HIV clinic? ☐ Yes ☐ No If yes, referred on/seen at: ____ / ____ / ____ (dd/mm/yyyy)

[21] Has the patient defaulted follow up? ☐ Yes ☐ No If yes, last seen on: ____ / ____ / ____ (dd/mm/yyyy)

[22] Is the patient under private HIV medical care ☐ Yes ☐ No

[23] Has the patient left HK? ☐ Yes ☐ No If yes, last seen on: ____ / ____ / ____ (dd/mm/yyyy)

[24] Has the patient died? ☐ Yes ☐ No If yes, date of death: ____ / ____ / ____ (dd/mm/yyyy) Cause: _____

Section (D) – Correspondence

Name of medical practitioner/NGO: _____ ☐ in private practice ☐ in public service

Correspondence Address: _____

Tel: _____ Fax: _____

Email: _____ Date: ____ / ____ / ____ (dd/mm/yyyy)

ALL INFORMATION WILL BE TREATED IN STRICTEST CONFIDENCE

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