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Rapid Review Response - HIV Testing Practices

Question: What the current HIV testing practices of other provinces and countries?

The issue and why it's important

In 2005 it was estimated 27% of people living with HIV were unaware of their infection (1). This is important as the transmission rate for those unaware they are infected is 3.5 times higher than that for persons aware of their HIV infection (2). Thus, it is critically important that persons learn of their HIV infection as soon as possible. Appropriate testing strategies that will detect undiagnosed HIV infection and facilitate both treatment and prevention are essential to controlling the epidemic (2).

In order to ensure Ontario testing strategies are informed by current practices and evidence related to HIV testing practices, we reviewed the strategies of other jurisdictions including, the United States, the United Kingdom, the European Union, the WHO and Australia.

What we found

- Practice guidelines from the US, UK, the WHO, Europe and Australia were identified (3-7).
- Relevant primary literature was identified and reviewed in order to provide additional insight about additional factors that may need to be considered in an HIV testing strategy (2;8-16).
- Key findings from the practice guidelines and primary literature have been summarized in more detail in the supplementary table provide with this summary.

Summary of Practice Guideline Recommendations from 5 Jurisdictions

Jurisdiction	Recommendations
United Kingdom (4)	*A. Universal HIV testing is recommended in all of the following settings:* 1. GUM or sexual health clinics 2. antenatal services 3. termination of pregnancy services 4. drug dependency programmes 5. healthcare services for those diagnosed with tuberculosis, hepatitis B, hepatitis C and lymphoma. *B. An HIV test should be considered in the following settings where diagnosed HIV prevalence in the local population (PCT/LA) exceeds 2 in 1000 population:* 1. all men and women registering in general practice 2. all general medical admissions. The introduction of universal HIV testing in these settings should be thoroughly evaluated for acceptability and feasibility and the resultant data made available to better inform the ongoing implementation of these guidelines. *C. HIV testing should be also routinely offered and recommended to the following patients:* 1. all patients presenting for healthcare where HIV, including primary HIV infection, enters the differential diagnosis 2. all patients diagnosed with a sexually transmitted infection 3. all sexual partners of men and women known to be HIV positive 4. all men who have disclosed sexual contact with other men 5. all female sexual contacts of men who have sex with men

	6. all patients reporting a history of injecting drug use 7. all men and women known to be from a country of high HIV prevalence (>1%*) 8. all men and women who report sexual contact abroad or in the UK with individuals from * Countries of high HIV prevalence. For an up to date list *see* http://www.unaids.org/en/KnowledgeCentre/HIVData/Epidemiology/latestEpiData.asp *D. HIV testing should also be routinely performed in the following groups in accordance with existing Department of Health guidance:* 1. blood donors 2. dialysis patients 3. organ transplant donors and recipients. **How often to test?** Repeat testing should be provided for the following groups: 1. all individuals who have tested HIV negative but where a possible exposure has occurred within the window period 2. men who have sex with men (MSM) – annually or more frequently if clinical symptoms are suggestive of seroconversion or ongoing high risk exposure 3. injecting drug users – annually or more frequently if clinical symptoms are suggestive of seroconversion 4. antenatal care – women who refuse an HIV test at booking should be re-offered a test, and should they decline again a third offer of a test should be made at 36 weeks. Women presenting to services for the first time in labour should be offered a point of care test (POCT). A POCT test may also be considered for the infant of a woman who refuses testing antenatally. In areas of higher seroprevalence, or where there are other risk factors, women who are HIV negative at booking may be offered a routine second test at 34–36 weeks' gestation as recommended in the BHIVA pregnancy guidelines.
United States (3)	**<u>Recommendations for Adults and Adolescents</u>** **Screening for HIV Infection** • In all health-care settings, screening for HIV infection should be performed routinely for all patients aged 13-64 years. Health-care providers should initiate screening unless prevalence of undiagnosed HIV infection in their patients has been documented to be <0.1%. In the absence of existing data for HIV prevalence, health-care providers should initiate voluntary HIV screening until they establish that the diagnostic yield is <1 per 1,000 patients screened, at which point such screening is no longer warranted. • All patients initiating treatment for TB should be screened routinely for HIV infection. • All patients seeking treatment for STDs, including all patients attending STD clinics, should be screened routinely for HIV during each visit for a new complaint, regardless of whether the patient is known or suspected to have specific behavior risks for HIV infection. **Repeat Screening** • Health-care providers should subsequently test all persons likely to be at high risk for HIV at least annually. Persons likely to be at high risk include injection-drug users and their sex partners, persons who exchange sex for money or drugs, sex partners of HIV-infected persons, and MSM or heterosexual persons who themselves or whose sex partners have had more than one sex partner since their most recent HIV test. • Health-care providers should encourage patients and their prospective sex partners to be tested before initiating a new sexual relationship. • Repeat screening of persons not likely to be at high risk for HIV should be performed on the basis of clinical judgment. • Unless recent HIV test results are immediately available, any person whose blood or body fluid is the source of an occupational exposure for a health-care provider should be informed of the incident and tested for HIV infection at the time the exposure occurs. **Consent and Pretest Information** • Screening should be voluntary and undertaken only with the patient's knowledge and understanding that HIV testing is planned. • Patients should be informed orally or in writing that HIV testing will be performed unless they decline (opt-out screening). Oral or written information should include an explanation of HIV infection and the meanings of positive and negative test results, and the patient should be offered an opportunity to ask questions and to decline testing. With such notification, consent for HIV screening should be incorporated into the patient's general informed consent for medical care on the same basis as are other screening or diagnostic tests; a separate consent form for HIV testing is not recommended. • Easily understood informational materials should be made available in the languages of the commonly

encountered populations within the service area. The competence of interpreters and bilingual staff to provide language assistance to patients with limited English proficiency must be ensured.
- If a patient declines an HIV test, this decision should be documented in the medical record.

Diagnostic Testing for HIV Infection
- All patients with signs or symptoms consistent with HIV infection or an opportunistic illness characteristic of AIDS should be tested for HIV.
- Clinicians should maintain a high level of suspicion for acute HIV infection in all patients who have a compatible clinical syndrome and who report recent high-risk behavior. When acute retroviral syndrome is a possibility, a plasma RNA test should be used in conjunction with an HIV antibody test to diagnose acute HIV infection (96).
- Patients or persons responsible for the patient's care should be notified orally that testing is planned, advised of the indication for testing and the implications of positive and negative test results, and offered an opportunity to ask questions and to decline testing. With such notification, the patient's general consent for medical care is considered sufficient for diagnostic HIV testing.

<u>Recommendations for pregnant women and their infants</u>

Universal Opt-Out Screening
- All pregnant women in the United States should be screened for HIV infection.
- Screening should occur after a woman is notified that HIV screening is recommended for all pregnant patients and that she will receive an HIV test as part of the routine panel of prenatal tests unless she declines (opt-out screening).
- HIV testing must be voluntary and free from coercion. No woman should be tested without her knowledge.
- Pregnant women should receive oral or written information that includes an explanation of HIV infection, a description of interventions that can reduce HIV transmission from mother to infant, and the meanings of positive and negative test results and should be offered an opportunity to ask questions and to decline testing.
- No additional process or written documentation of informed consent beyond what is required for other routine prenatal tests should be required for HIV testing.
- If a patient declines an HIV test, this decision should be documented in the medical record.

Addressing Reasons for Declining Testing
- Providers should discuss and address reasons for declining an HIV test (e.g., lack of perceived risk; fear of the disease; and concerns regarding partner violence or potential stigma or discrimination).
- Women who decline an HIV test because they have had a previous negative test result should be informed of the importance of retesting during each pregnancy.
- Logistical reasons for not testing (e.g., scheduling) should be resolved.
- Certain women who initially decline an HIV test might accept at a later date, especially if their concerns are discussed. Certain women will continue to decline testing, and their decisions should be respected and documented in the medical record.

Timing of HIV Testing
- To promote informed and timely therapeutic decisions, health-care providers should test women for HIV as early as possible during each pregnancy. Women who decline the test early in prenatal care should be encouraged to be tested at a subsequent visit.
- A second HIV test during the third trimester, preferably <36 weeks of gestation, is cost-effective even in areas of low HIV prevalence and may be considered for all pregnant women. A second HIV test during the third trimester is recommended for women who meet one or more of the following criteria:
  --- Women who receive health care in jurisdictions with elevated incidence of HIV or AIDS among women aged 15--45 years. In 2004, these jurisdictions included Alabama, Connecticut, Delaware, the District of Columbia, Florida, Georgia, Illinois, Louisiana, Maryland, Massachusetts, Mississippi, Nevada, New Jersey, New York, North Carolina, Pennsylvania, Puerto Rico, Rhode Island, South Carolina, Tennessee, Texas, and Virginia.†
  --- Women who receive health care in facilities in which prenatal screening identifies at least one HIV-infected pregnant woman per 1,000 women screened.
  --- Women who are known to be at high risk for acquiring HIV (e.g., injection-drug users and their sex partners, women who exchange sex for money or drugs, women who are sex partners of HIV-infected persons, and women who have had a new or more than one sex partner during this pregnancy).
  --- Women who have signs or symptoms consistent with acute HIV infection. When acute retroviral syndrome is a possibility, a plasma RNA test should be used in conjunction with an HIV antibody test to diagnose acute HIV infection (96).

Rapid Testing During Labor
- Any woman with undocumented HIV status at the time of labor should be screened with a rapid HIV test unless

	she declines (opt-out screening). • Reasons for declining a rapid test should be explored (see Addressing Reasons for Declining Testing). • Immediate initiation of appropriate antiretroviral prophylaxis (42) should be recommended to women on the basis of a reactive rapid test result without waiting for the result of a confirmatory test. **Postpartum/Newborn Testing** • When a woman's HIV status is still unknown at the time of delivery, she should be screened immediately postpartum with a rapid HIV test unless she declines (opt-out screening). • When the mother's HIV status is unknown postpartum, rapid testing of the newborn as soon as possible after birth is recommended so antiretroviral prophylaxis can be offered to HIV-exposed infants. Women should be informed that identifying HIV antibodies in the newborn indicates that the mother is infected. • For infants whose HIV exposure status is unknown and who are in foster care, the person legally authorized to provide consent should be informed that rapid HIV testing is recommended for infants whose biologic mothers have not been tested. • The benefits of neonatal antiretroviral prophylaxis are best realized when it is initiated <12 hours after birth (110). **Confirmatory Testing** • Whenever possible, uncertainties regarding laboratory test results indicating HIV infection status should be resolved before final decisions are made regarding reproductive options, antiretroviral therapy, cesarean delivery, or other interventions. • If the confirmatory test result is not available before delivery, immediate initiation of appropriate antiretroviral prophylaxis (42) should be recommended to any pregnant patient whose HIV screening test result is reactive to reduce the risk for perinatal transmission.
WHO (6)	**Recommendations for all epidemic types** In all types of HIV epidemics, health care providers should recommend HIV testing and counselling as part of the standard of care to: • all adults, adolescents or children who present to health facilities with signs, symptoms or medical conditions that could indicate HIV infection. These include, but are not necessarily limited to, tuberculosis and other conditions specified in the WHO HIV clinical staging system. • infants born to HIV-positive women as a routine component of the follow-up care for these children. • children presenting with suboptimal growth or malnutrition in generalized epidemics, and under certain circumstances in other settings such as when malnourished children do not respond to appropriate nutritional therapy. • men seeking circumcision as an HIV prevention intervention. **Recommendations for generalized epidemics** In generalized epidemics where an enabling environment is in place and adequate resources are available, including a recommended package of HIV prevention, treatment and care, health care providers should recommend HIV testing and counselling to all adults and adolescents seen in all health facilities. This applies to medical and surgical services, public and private facilities, inpatient and outpatient settings and mobile or outreach medical services. HIV testing and counselling should be recommended by the health care provider as part of the normal standard of care provided to the patient, regardless of whether the patient shows signs and symptoms of underlying HIV infection or the patient's reason for presenting to the health facility. Resource and capacity constraints may require a phased implementation of provider-initiated HIV testing and counselling. The following should be considered priorities for the implementation of provider-initiated HIV testing and counselling in generalized epidemic settings: • Medical inpatient and outpatient facilities, including tuberculosis clinics. • Antenatal, childbirth and postpartum health services. • Health services for most-at-risk populations. • Services for younger children (under 10 years of age). • Surgical services. • Services for adolescents. • Reproductive health services, including family planning. **Options for concentrated and low-level HIV epidemics** Health care providers should not recommend HIV testing and counselling to all persons attending all health facilities in settings with low-level and concentrated epidemics, since most people will have a low risk of exposure to HIV. In such settings, the priority should be to ensure that HIV testing and counselling is recommended to all adults, adolescents and children who present to health facilities *with signs and symptoms suggestive of underlying HIV infection*, including tuberculosis, and to children known to have been exposed perinatally to HIV. If data show that

	HIV prevalence in patients with tuberculosis is very low, the recommendation of HIV testing and counselling to these patients may not remain a priority. Decisions about whether and how to implement provider-initiated HIV testing and counselling in selected health facilities in low-level and concentrated epidemics should be guided by an assessment of the epidemiological and social context. Consideration may be given to the implementation of provider-initiated HIV testing and counselling in the following health facilities or services: • STI services • Health services for most-at-risk populations • Antenatal, childbirth and postpartum services • Tuberculosis services.
Australia (5)	There are some circumstances where mandatory or compulsory testing may be appropriate: • Mandatory testing refers to situations where people may not either participate in certain activities or access certain services unless they agree to be tested. Circumstances in which mandatory testing is appropriate include: prior to blood, tissue and organ donation; for immigration purposes; for armed services personnel; and for purchasing some types of insurance. • Compulsory testing occurs in the context of a legal instruction, such as in certain rare situations where the welfare of others in the community depends on the testing of an individual (e.g. if a person suspected on reasonable grounds of being HIV positive persistently behaves in a way that places others at risk of infection). In all circumstances testing should be conducted in accordance with the principles in this policy. Indications for HIV testing should be assessed on the basis of the following risk factors: • unprotected male-to-male intercourse; • sharing of injecting equipment; • being the sexual partner of an HIV positive person; • being from a country with a high HIV prevalence; • having recently travelled overseas; • presenting for post-exposure prophylaxis (PEP) after occupational or non-occupational exposure to HIV; • pregnancy; • requesting an HIV test in the absence of clear risk factors; and • diagnosis of a sexually transmissible infection Routine pre-operative testing for HIV is not supported. **Antenatal testing** Key Points • HIV testing should be routinely offered to all women antenatally. • Antenatal testing must only be performed with the informed consent of the woman. Routine HIV testing without consent is not supported. • All women contemplating pregnancy or seeking antenatal care should be made aware of the benefits of diagnosis of HIV infection and management, and prevention strategies available for both the mother and the infant. • Women should receive materials (in written and other formats) outlining the tests that will be offered antenatally and the testing procedure should be explained to the woman by a member of the team involved in her antenatal care. Health care workers in antenatal settings should be trained in appropriate assessment and pre- and post-test discussion. • Women with limited literacy, or for whom English is a second language, require appropriate educational resources. Material using other media (video, audio, multimedia) and in languages other than English may be necessary. • Women with a first language other than English should be offered access to accredited interpreting services.
Europe (7)	1. All healthcare professionals across Europe should be aware of the need to test more individuals for HIV and should have knowledge of the range of diseases where the HIV prevalence is high enough to warrant testing. 2. Some healthcare providers such as general practitioners, dentists, dermatologists, gynaecologists, STD clinicians and emergency physicians should particularly be targeted because they are likely to be the providers who first encounter HIV-infected patients presenting comorbid conditions. 3. All individuals with TB and other diseases recognized to be associated with HIV (i.e. diseases listed in Table 1) should be tested for HIV. 4. All individuals attending STD clinics should be offered an HIV test on an annual basis. 5. European governments should consider the utility and cost-effectiveness of adopting opt-out testing for all pregnant women. 6. Some laboratory abnormalities may be associated with HIV infection and should lead to HIV testing.

	Routine HIV testing should be undertaken in patients with certain malignancies.

Factors That May Impact Implementation of Findings

- Outreach to at-risk and vulnerable communities can be seen as an effective way to increase access to testing for HIV. Most interventions involve awareness-raising and distribution of information materials, sometimes combined with rapid testing. Outreach work is generally conducted by nongovernmental organizations (NGOs) (16).

- Eight barriers to HIV testing were named (based on a comprehensive review of the literature) acrossl three practice categories (prenatal providers, emergency department providers and providers in other medical settings): insufficient time, consent process, lack of knowledge/training, language, lack of patient acceptance, pretest counseling requirements, competing priorities, and inadequate reimbursement. Other barriers, such as informing an HIV-positive patient, institutional costs, having a low-risk patient population, fear/concern of offending the patient, patient confidentiality concerns, posttest counselling requirements, cultural barriers, concern about patient follow-up, lack of HIV-related referral networks, and testing not considered appropriate were cited by two but not all three categories (9).

- Strategies that encourage earlier testing, including routine HIV testing in healthcare settings where high-risk individuals attend frequently, the availability of HIV testing services in non-medical settings, and partner notification schemes or peer-led projects to encourage high-risk individuals to attend for testing, may all increase the proportion of HIV infected individuals who are aware of their HIV status (11).

- Based on a survey of practitioners and English speaking immigrant and refugee women from HIV endemic countries (recruited from a clinical specializing in immigrant health services) women were unaware of the options available to them for VCT. Both practitioners and patients highlighted the issue of stigma and negative outcomes associated with testing that created barriers or contributed to delays in women receiving testing. Women preferred anonymous testing, and recommended that information and decision support regarding HIV testing be provided via non-targeted strategies, and integrated within general health services or public education (15).

- Before introducing an HIV testing protocol into correctional facilities, the unique nature of these environments must be taken into account. Three testing strategies that have been used in correctional settings--mandatory, voluntary, and routine "opt out" testing—were analyzed and it was concluded that routine testing is most likely beneficial to inmates, the correctional system, and the outside community (8).

- The introduction of mandatory reporting of HIV infection in Alberta did not appear to have a deterrent effect on rates of HIV testing. The implementation of an opt-out prenatal HIV testing policy resulted in a dramatic increase in the number of females being tested for HIV infection (12).

Reference List

(1) Public Health Agency of Canada. HIV/AIDS Epi Updates. Ottawa,ON: Centre for Infectious Disease Prevention and Control, Public Health Agency of Canada; 2007.

(2) Branson B. Current HIV epidemiology and revised recommendations for HIV testing in health-care settings. Journal of Medical Virology 2007;79(Suppl 1):S6-S10.

(3) Branson B, Handsfield HH, Lampe MA, Janssen RS, Taylor AW, Lyss SB et al. Revised guidelines for HIV counseling, testing, and referral. Morbidity and Mortality Weekly Report: Reports and Recommendations 2006;50(RR-19):1-57.

(4) British HIV Association, British Association of Sexual Health and HIV, and British Infection Society. UK National Guidelines for HIV Testing 2008. British HIV Association; 2008.

(5) Joint Ministerial Advisory Committee on AIDS, Sexual Health and Hepatitis and Intergovernmental Committee on AIDS, Hepatitis and Related Diseases HIV Testing Policy Steering Group. National HIV Testing Policy 2006. Australia; 2006.

(6) World Health Organization and UNAIDS. Guidance on Provider-Initiated HIV Testing and Counselling in Health Facilities. Geneva, Switzerland: World Health Organization; 2007.

(7) Gazzard B, Clumeck N, d'Arminio Monforte A, Lundgren JD. Indicator disease-guided testing for HIV--the next step for Europe? HIV Medicine 2008;9(Suppl 2):34-40.

(8) Basu S, Smith-Rohrberg D, Hanck S, Altice FL. HIV testing in correctional institutions: evaluating existing strategies, setting new standards. AIDS Public Policy Journal 2005;20(1-2):3-24.

(9) Burke RC, Sepkowitz KA, Bernstein KT, Karpati AM, Myers JE, Tsoi BW et al. Why don't physicians test for HIV? A review of the US literature. AIDS 2007;21(12):1617-24.

(10) Coenen T, Lundgren J, Lazarus JV, Matic S. Optimal HIV testing and earlier care: the way forward in Europe. HIV Medicine 2008;9(Suppl 2):1-5.

(11) Girardi E, Sabin CA, Monforte AD. Late diagnosis of HIV infection: epidemiological features, consequences and strategies to encourage earlier testing. JAIDS 2007;46(Suppl 1):S3-S8.

(12) Jayaraman GC, Preiksaitis JK, Larke B. Mandatory reporting of HIV infection and opt-out prenatal screening for HIV infection: effect on testing rates. CMAJ 2003;168(6):679-82.

(13) Khotenashvili L, Matic S, Lazarus JV. HIV testing and counselling policies and practices in Europe: lessons learned, ways forward. HIV Medicine 2008;9(Suppl 2):30-3.

(14) Lyons MS, Lindsell CJ, Fichtenbaum CJ, Camargo CAJr. Interpreting and implementing the 2006 CDC recommendations for HIV testing in health-care settings. Public Health Reports 2007;122(5):579-83.

(15) Mitra D, Jacobsen MJ, O'Connor A, Pottie K, Tugwell P. Assessment of the decision support needs of women from HIV endemic countries regarding voluntary HIV testing in Canada. Patient Education and Counseling 2006;63(3):292-300.

(16) Mounier-Jack S, Nielson S, Coker RJ. HIV testing strategies across European countries. HIV Medicine 2008;9(Suppl 2):13-9.