HIV AND HEPATITIS C: SCREENING, EDUCATING AND REFERRING PATIENTS WITH ADDICTIONS

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DISCLOSURES

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OUTLINE

Epidemiology of HCV and HIV in Canada

Transmission

Screening

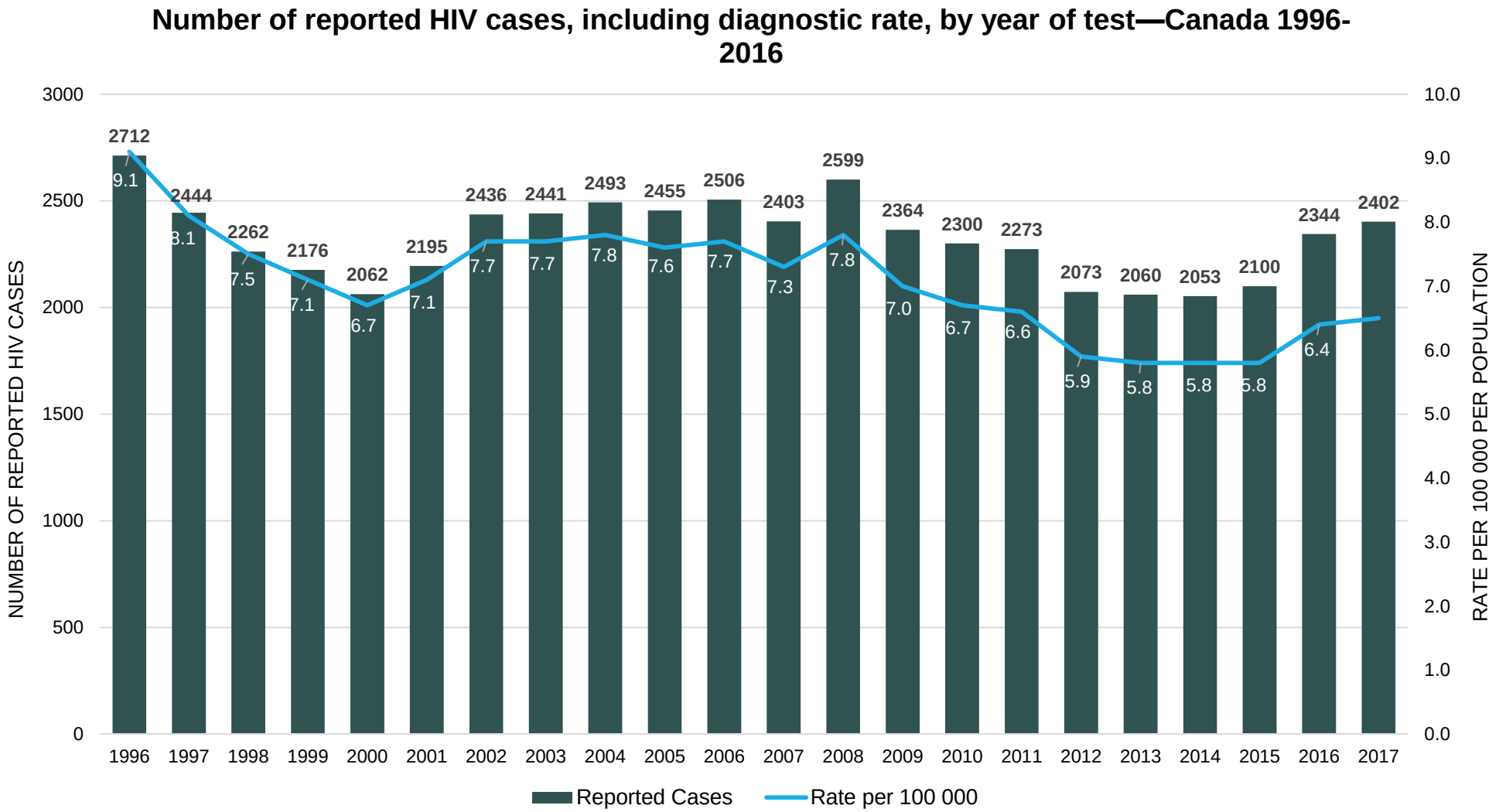
Education

Prevention (PreP)

Referrals

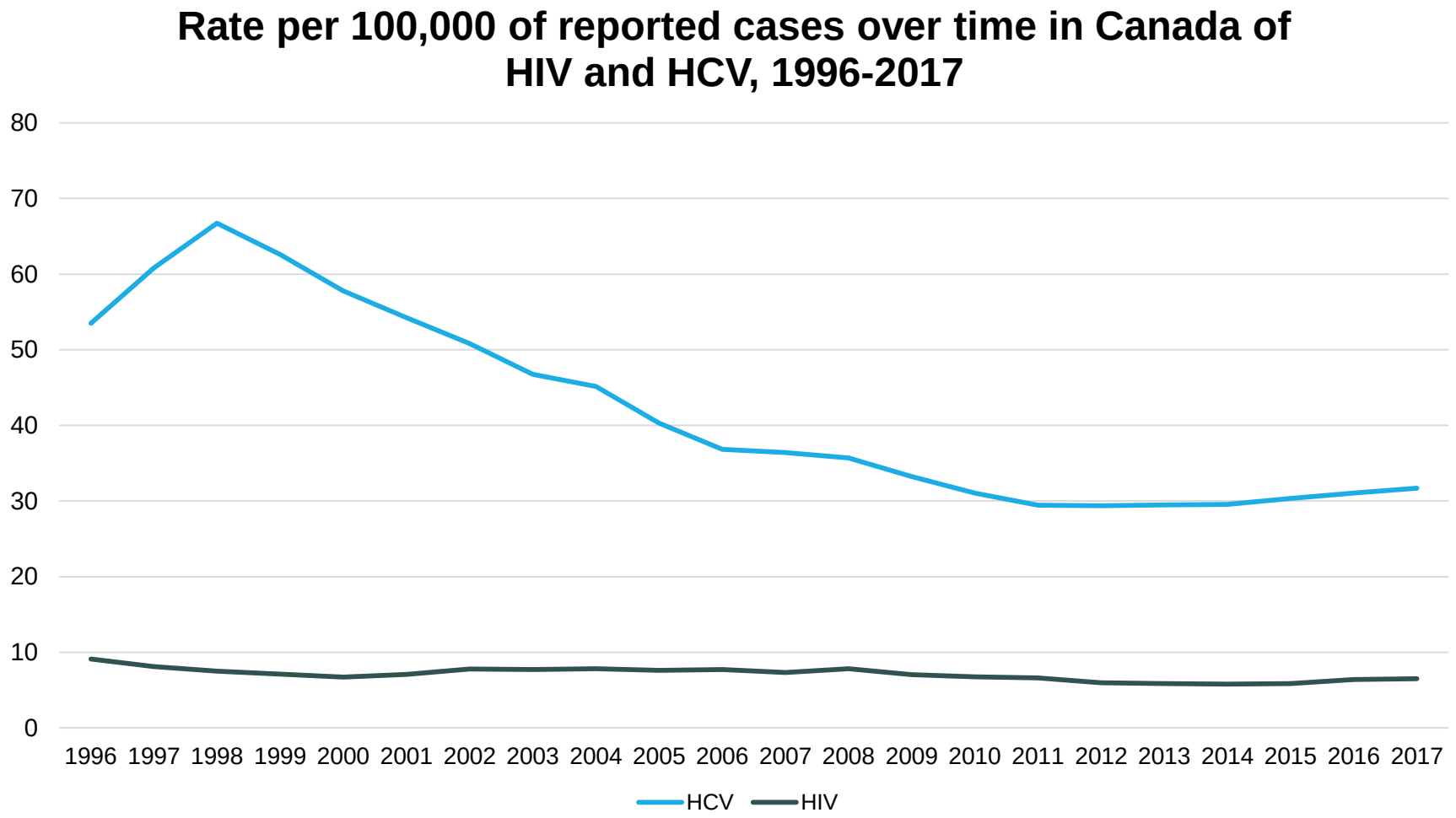
Conclusion

HIV STATISTICS



Adapted from Bourgeois AC et. Al HIV in Canada-Surveillance Report 2016.

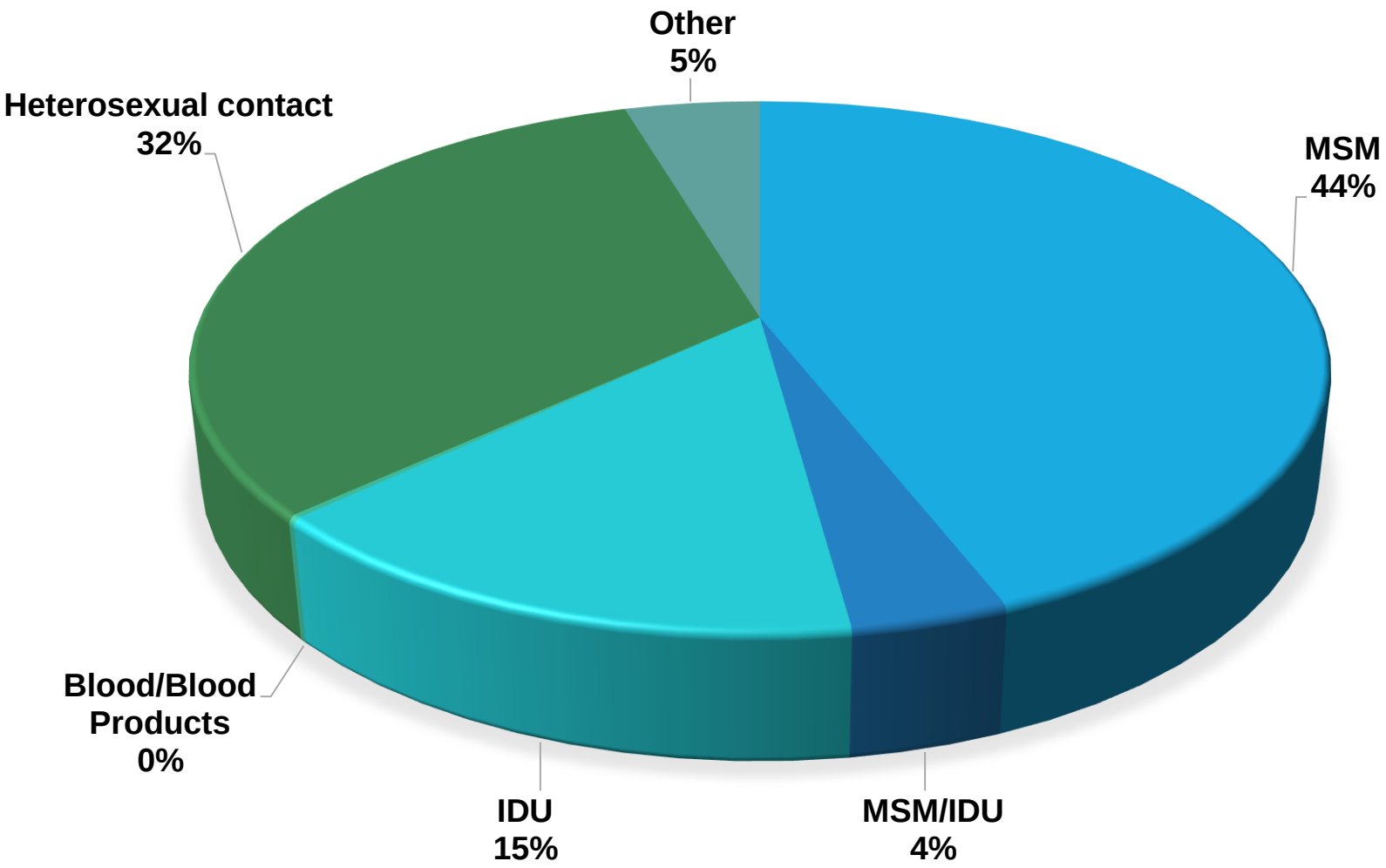
HIV AND HCV REPORTED CASES IN CANADA



HCV rate
>4X HIV rate

Adapted from Notifiable diseases on-line PHAC

Proportion of reported HIV cases among adults (≥ 15 years old) by exposure category—Canada, 2016

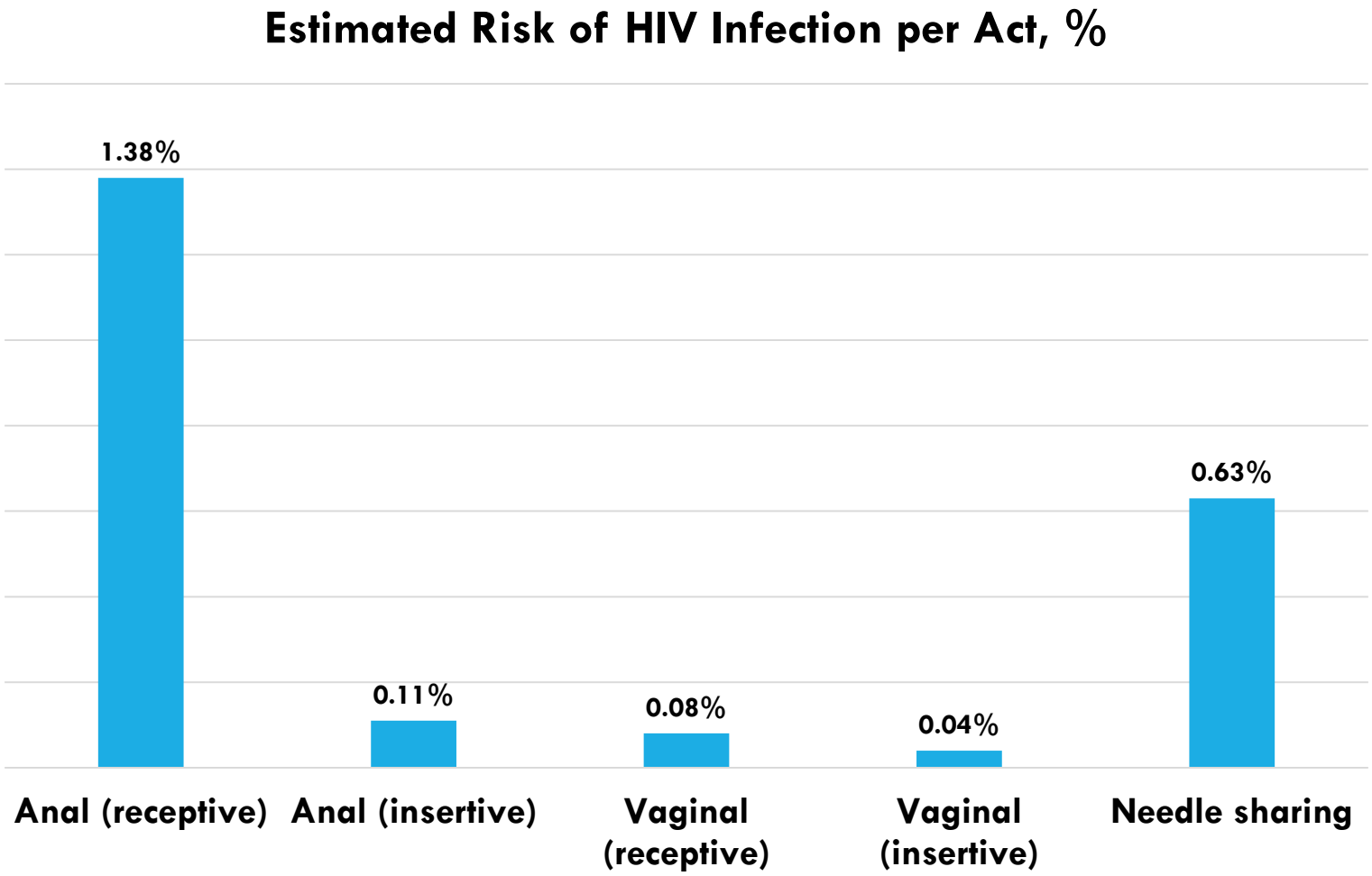


* HCV comparison: >50% of infections occur in current or former PWID

* >95% of HIV-HCV co-infections in PWID exposure category

Adapted from Bourgeois AC et. Al HIV in Canada-Surveillance Report 2016.

RISK OF TRANSMISSION HIV



HCV VERSUS HIV AWARENESS

HCV	HIV
~ >30% of people infected with HCV are unaware of their diagnosis	~ 14% of people infected with HIV are unaware of their diagnosis

TRANSMISSION IN POPULATIONS WITH ADDICTION

DIRECT

- Direct risk of exposure from shared drug equipment

HIGH RISK BEHAVIOUR

- Substance use leading to high risk behaviours, such as, multiple partners, anonymous partners, decreased condom use, increased risk for injection use
  - Stimulant use (ie. Crystal methamphetamine)
  - Alcohol use

GOAL TO ERADICATE HCV

WHO mandate to eliminate HBV/HCV by 2030

- 90% diagnosed, 80% treated, and 65% reduction in mortality by 2030

Strategies for HCV elimination:

Harm reduction

- Sterile injecting equipment and effective drug dependence treatment

Test and treat

- Direct-acting antivirals (DAAs)
  - Advantages: Oral, well-tolerated, effective (>90% cure rates), short course (8-12 weeks)
- No barriers to treatment compared to historically – any stage of disease (i.e. cirrhosis), current PWID, HIV co-infection

World Health Organization. Global Health Sector Strategies on Viral Hepatitis 2016-2021

GOAL TO ERADICATE HIV?

More complicated than for HCV

Highly effective, oral (some long-acting injectables in the pipeline), well-tolerated ARV treatment **BUT lifelong treatment with good adherence is still required**

Would require significant multi-prong coordinated effort requiring extensive resources

SCREENING

Readily accessible diagnostics in Ontario for both HCV and HIV testing.

- Public Health Laboratory of Ontario – TAT 3 days.

Point-of-care (POC) testing for HIV and HCV available in Canada.

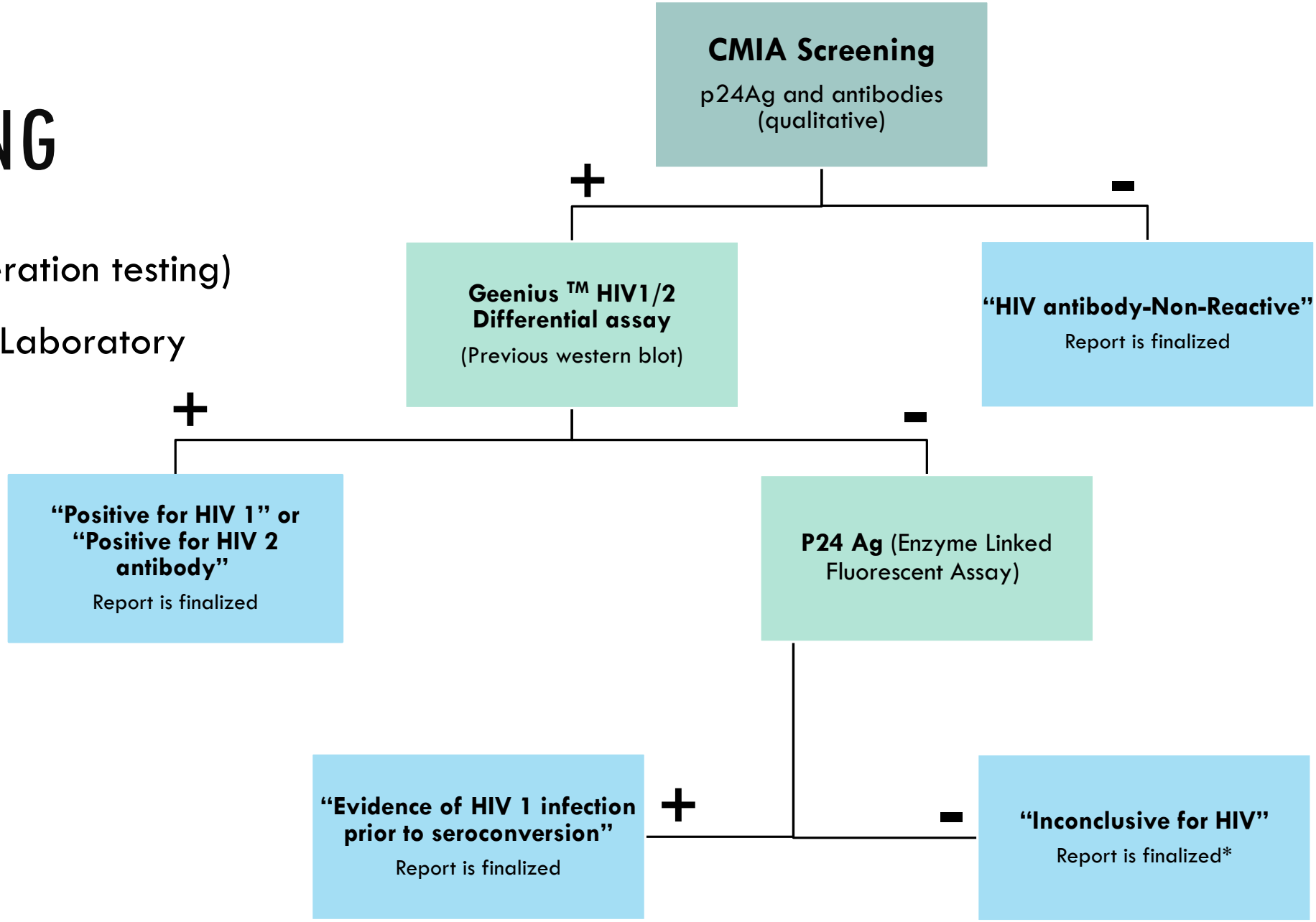
- HCV TAT within 1 hour
- HIV TAT within minutes

- POC improves linkage to care, especially in HCV where two-step process for initial screening is required.

HIV TESTING

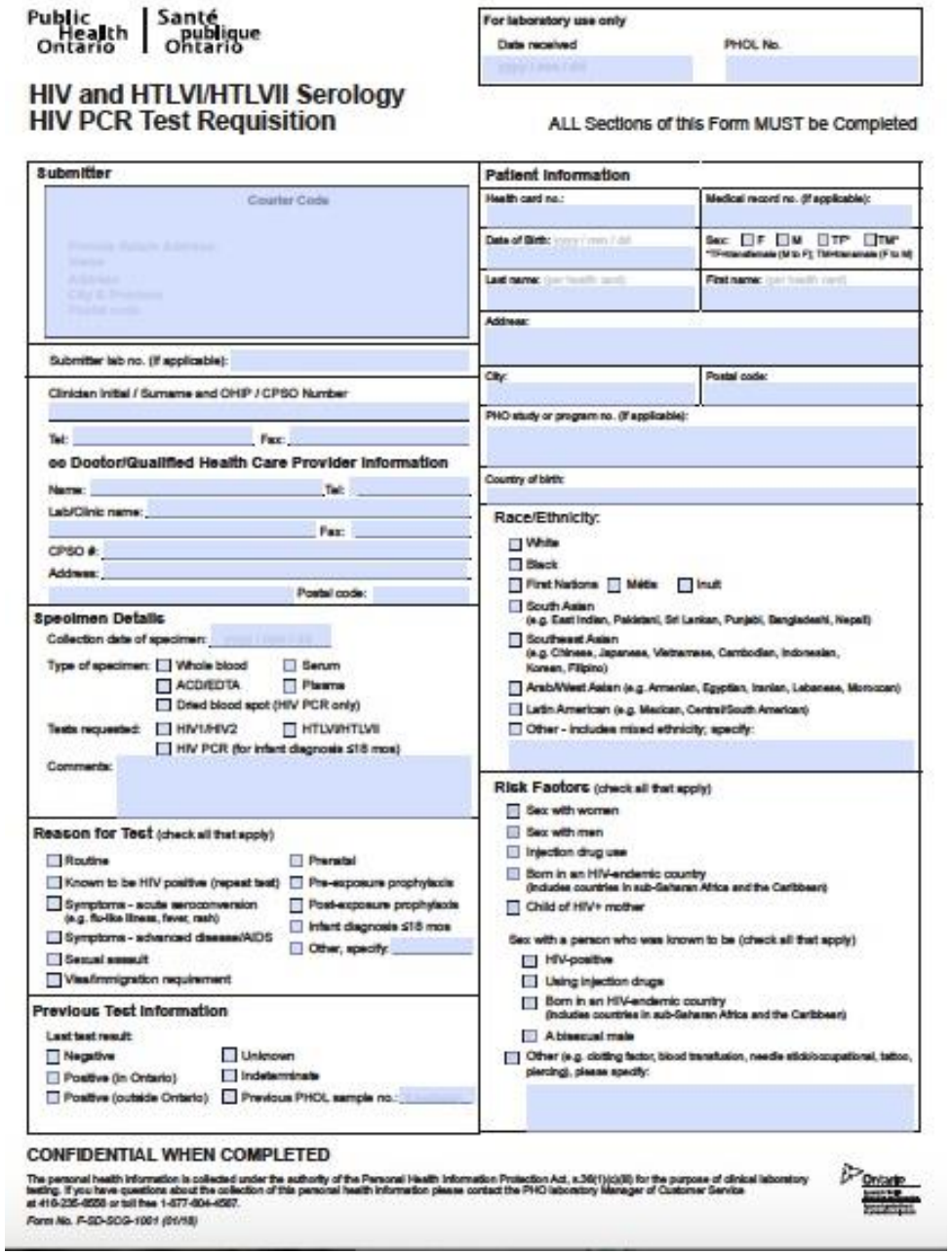
HIV serology (4th generation testing)

Public Health Ontario Laboratory



*If reported as inconclusive patient should have follow up testing at least 4 weeks after collection of first specimen.

ORDERING HIV SEROLOGY IN ONTARIO



Public Health Ontario | Santé publique Ontario

For laboratory use only
Date received | PHOL No.

HIV and HTLVI/HTLVII Serology
HIV PCR Test Requisition

ALL Sections of this Form MUST be Completed

Submitter
Courier Code

Submitter lab no. (if applicable):

Clinician Initial / Surname and OHIP / CPSO Number
Tel: Fax:

oo Doctor/Qualified Health Care Provider Information
Name: Tel:
Lab/Clinic name:
Fax:
CPSO #:
Address:
Postal code:

Specimen Details
Collection date of specimen:
Type of specimen: ☐ Whole blood ☐ Serum ☐ ACD/EDTA ☐ Plasma ☐ Dried blood spot (HIV PCR only)
Tests requested: ☐ HIV1/HIV2 ☐ HTLVI/HTLVII ☐ HIV PCR (for infant diagnosis ≤18 mos)
Comments:

Reason for Test (check all that apply)
☐ Routine ☐ Prenatal
☐ Known to be HIV positive (repeat test) ☐ Pre-exposure prophylaxis
☐ Symptoms - acute seroconversion (e.g. flu-like illness, fever, rash) ☐ Post-exposure prophylaxis
☐ Symptoms - advanced disease/AIDS ☐ Infant diagnosis ≤18 mos
☐ Sexual assault ☐ Other, specify:
☐ Visa/immigration requirement

Previous Test Information
Last test result:
☐ Negative ☐ Unknown
☐ Positive (in Ontario) ☐ Indeterminate
☐ Positive (outside Ontario) ☐ Previous PHOL sample no.:

Patient Information
Health card no.: | Medical record no. (if applicable):
Date of Birth: | Sex: ☐ F ☐ M ☐ TF* ☐ TM*
Last name: | First name:
Address:
City: | Postal code:
PHO study or program no. (if applicable):
Country of birth:

Race/Ethnicity:
☐ White
☐ Black
☐ First Nations ☐ Métis ☐ Inuit
☐ South Asian (e.g. East Indian, Pakistani, Sri Lankan, Punjabi, Bangladeshi, Nepali)
☐ Southeast Asian (e.g. Chinese, Japanese, Vietnamese, Cambodian, Indonesian, Korean, Filipino)
☐ Arab/West Asian (e.g. Armenian, Egyptian, Iranian, Lebanese, Moroccan)
☐ Latin American (e.g. Mexican, Central/South American)
☐ Other - includes mixed ethnicity; specify:

Risk Factors (check all that apply)
☐ Sex with women
☐ Sex with men
☐ Injection drug use
☐ Born in an HIV-endemic country (includes countries in sub-Saharan Africa and the Caribbean)
☐ Child of HIV+ mother

Sex with a person who was known to be (check all that apply)
☐ HIV-positive
☐ Using injection drugs
☐ Born in an HIV-endemic country (includes countries in sub-Saharan Africa and the Caribbean)
☐ A bisexual male
☐ Other (e.g. clotting factor, blood transfusion, needle stick/occupational, tattoo, piercing), please specify:

CONFIDENTIAL WHEN COMPLETED

The personal health information is collected under the authority of the Personal Health Information Protection Act, s.36(1)(c)(ii) for the purpose of clinical laboratory testing. If you have questions about the collection of this personal health information please contact the PHO laboratory Manager of Customer Service at 416-235-6556 or toll free 1-877-604-4567.

Form No. F-SD-SOG-1001 (01/18)

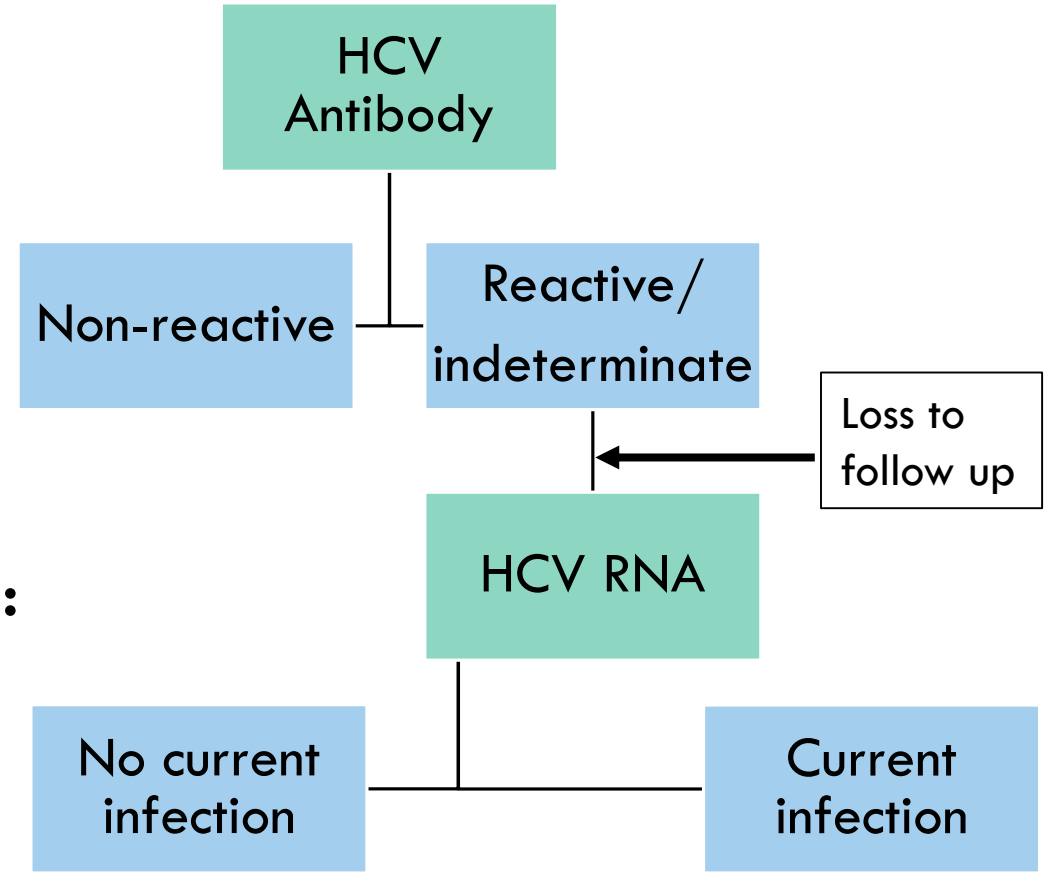
Ontario

HCV TESTING

1. HCV serology (antibodies)*

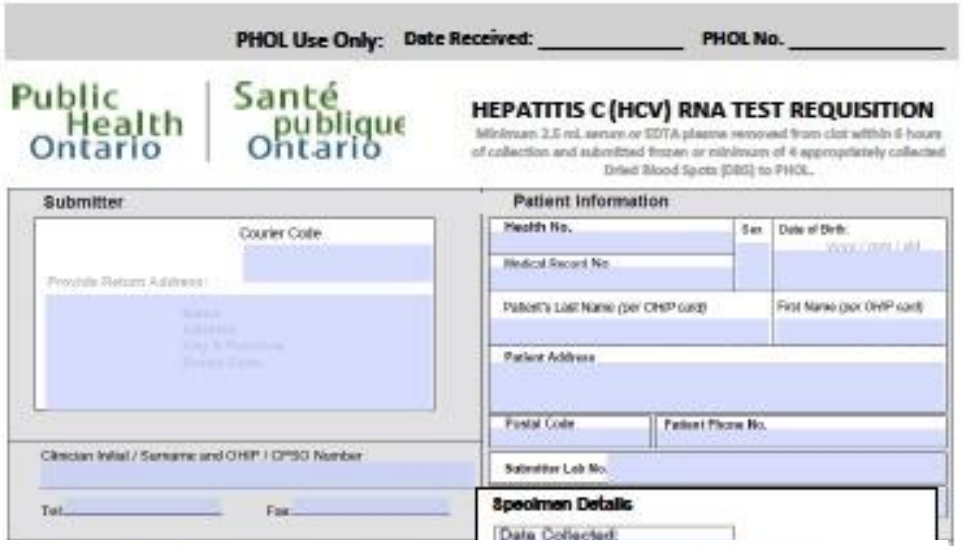
If antibodies positive or indeterminate:

2. HCV RNA



* If previously treated HCV infection, antibodies may remain positive for life, therefore testing for re-infection would require HCV RNA

ORDERING HCV RNA



PHOL Use Only: Date Received: _____ PHOL No. _____

Public Health Ontario | Santé publique Ontario

HEPATITIS C (HCV) RNA TEST REQUISITION

Minimum 2.5 mL serum or EDTA plasma removed from clot within 6 hours of collection and submitted frozen or minimum of 4 appropriately collected Dried Blood Spots (DBS) to PHOL.

Submitter

Courier Code

Provide Return Address

Patient Information

Health No. | Sex | Date of Birth

Medical Record No.

Patient's Last Name (per OHIP card) | First Name (per OHIP card)

Patient Address

Postal Code | Patient Phone No.

Clinician Initial / Surname and OHIP / CPSO Number

Submitter Lab No.

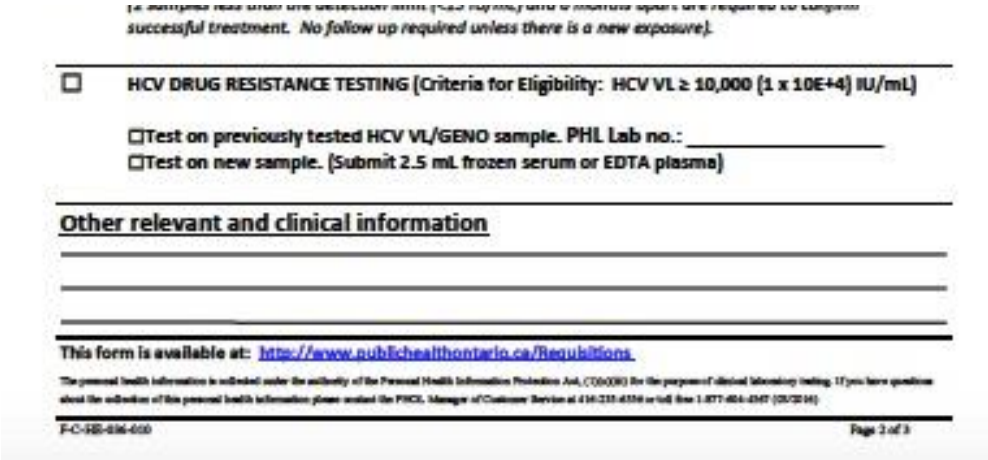
Tel: _____ Fax: _____

Specimen Details

Date Collected:

☐ **Diagnostic:** To be used only in patients who are HIV positive, immunocompromised, infant of HCV positive mother, patient with anti-HCV indeterminate result and 8-10 weeks post exposure. Please specify under " Other relevant and clinical information" below the clinical reason this test is being requested for diagnosis of HCV infection.

☑ **Pre-Treatment:** Genotyping and Baseline viral load



successful treatment. No follow up required unless there is a new exposure).

☐ **HCV DRUG RESISTANCE TESTING (Criteria for Eligibility: HCV VL ≥ 10,000 (1 x 10E+4) IU/mL)**

☐Test on previously tested HCV VL/GENO sample. PHL Lab no.: _____

☐Test on new sample. (Submit 2.5 mL frozen serum or EDTA plasma)

Other relevant and clinical information

This form is available at: http://www.publichealthontario.ca/Requisitions

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HCV TESTING

About 15%–30% of people infected with HCV will spontaneously clear.

They will test positive for anti-HCV antibodies but negative for HCV RNA.

They are not protected from reinfection.

Beyond 6 months (chronic infection), spontaneous clearance is unlikely.

HCV - WHO SHOULD BE SCREENED?

CANADIAN ASSOCIATION FOR THE STUDY OF THE LIVER RECOMMENDATIONS

1. **History of current or past injection drug use ***
2. Received health care or personal services where there is lack of infection prevention and control practices
3. Received a blood transfusion, blood products or organ transplant before 1992 in Canada
4. **History of or current incarceration**
5. **Born or resided in a region where hepatitis C prevalence is > 3%, such as:**
   - E.g. Central, East and South Asia; Australasia and Oceania; Eastern Europe; Subsaharan Africa; North Africa or Middle East
6. Born to a mother who is HCV-infected
7. **History of sexual contact or sharing of personal care items with someone who is HCV-infected ***
8. **HIV infection, particularly men who have sex with men ***
9. Chronic hemodialysis treatment
10. Elevated ALT
11. Born between 1945 and 1975

Shah H et. al. CMAJ 2018

FREQUENCY OF SCREENING - HCV
ANNUALLY FOR ONGOING HIGH-RISK BEHAVIOR

Current injection drug use

History of sexual contact or sharing of personal care items with someone who is HCV-infected

HIV infection *MSM

Shah H et. al. CMAJ 2018

RISK OF RE-INFECTION

Estimates of re-infection rates of people whom resume IV drug use and high risk behaviors after completion of HCV treatment is not well known, especially in DAA era.

Estimates between 1.21-4.9/100 Person Years

Greater risk with patients using stimulants like Crystal meth with less effective addictions management

Lower risk in patients using opioids who are on OAT treatment

HIV – WHO SHOULD BE SCREENED?
PHAC RECOMMENDATIONS

1. Requesting an HIV test
2. Signs/symptoms of HIV infection or with opportunistic infection
3. Are/have been sexually active and never been tested for HIV
4. Shared drug-using equipment with a partner whose HIV status is positive/unknown
5. Pregnant women, planning a pregnancy, and their partners
6. Victims of sexual assault
7. Unprotected anal or vaginal intercourse with a partner whose HIV status is positive/unknown.

If soon after high-risk exposure – refer to Emergency Department

ADDITIONAL CONSIDERATIONS FOR HIGH-RISK BEHAVIOURS

Multiple sexual partners and/or anonymous sexual partners

Men who have sex with men

A diagnosis of other infections associated with HIV:

- STIs
- Hepatitis B
- Hepatitis C
- Tuberculosis

High risk activities or receipt of blood or blood products in people from or who have travelled to regions where HIV is endemic

- Africa, Asia, Caribbean, Central and South America and Eastern Europe

FREQUENCY OF HIV SCREENING
PHAC RECOMMENDATIONS

No consistent guidelines, population-specific

At a minimum annual testing recommended for:

- PWID
- Individuals with HIV-positive sex partners
- Individuals with multiple partners
- Sex workers and their clients
- Migrants from HIV-endemic countries
- Indigenous peoples

EDUCATION
STRATEGIES FOR PREVENTION OF EXPOSURE

Condom use

Counselling on partner reduction

Treatment of HIV-positive partners

Testing and treatment of other sexually transmitted infections

Counselling on risk reduction
- Clean needles, supplies (alcohol swabs, sterile water), vein/wound/mouth care

Drug dependence treatment
- OAT
- Safe supply for hydromorphone

Address conditions that predispose to risk-taking behaviour
- Depression, and other mental health diagnoses
- Substance use

EDUCATION
HIV AND HCV TRANSMISSION AND DIAGNOSIS

High risk activities and transmission

Where and how to access testing locally

Access to PrEP

What to do in event of high risk exposure (PEP)

TRANSMISSION OF OTHER SEXUALLY TRANSMITTED INFECTIONS

Increasing incidence of STIs which may increase the risk of HIV transmission

Decrease in the use of barrier protection with serosorting, introduction of PrEP and effective ARVs

- Syphilis
- Herpes Simplex Virus
- Gonorrhea
- Chlamydia
- Human Papilloma Virus

PrEP (Pre-Exposure Prophylaxis)

Use of antiretroviral therapy in HIV-uninfected individuals to reduce risk of HIV infection

PrEP (Pre-Exposure Prophylaxis)

DAILY

Single tablet tenofovir disoproxil fumarate/emtricitabine (TDF/FTC)

ON DEMAND

Two tablets TDF/FTC taken together 2 to 24 hours before first sexual exposure, followed by one tablet daily until 48 hours after last sexual activity

- may be considered in MSM

PrEP (Pre-Exposure Prophylaxis) EFFECTIVENESS

MSM

- Partners Demonstration Project
  - PrEP given to HIV-uninfected adults in serodiscordant relationships until 6 months after their HIV-positive partner began ARVs
  - 96% (95% CI, 81%–99%) reduction in HIV incidence

PWID

- The Bangkok Tenofovir Study (only RCT trial of PrEP in PWID)
  - Daily oral tenofovir disoproxil fumarate (TDF) alone conferred a 48.9% (95% CI 9.6%–72.2%) reduction in HIV infection
  - Higher efficacy of 74% among those with detectable concentrations of tenofovir

PrEP - INDICATIONS

Men who have sex with men (MSM)

(strong recommendation)

MSM and transgender women who report condomless anal sex within the last six months and who have any of the following:

- Syphilis or rectal bacterial sexually transmitted infection (STI) (particularly if diagnosed in the preceding 12 months)
- Recurrent use of nPEP
- Ongoing sexual relationship with HIV-positive partner with substantial risk of transmissible HIV
- High-incidence risk index (HIRI)-MSM risk score ≥ 11
- PrEP is not recommended in the context of a stable closed relationship with a single partner with no or negligible risk of having transmissible HIV

Canadian guideline on HIV pre-exposure prophylaxis and nonoccupational postexposure prophylaxis. CMAJ. 2018

PrEP - INDICATIONS

People who inject drugs (PWID) exposure

(weak recommendation)

PWID who share injection drug use paraphernalia with a person with a non-negligible risk of HIV infection

Canadian guideline on HIV pre-exposure prophylaxis and nonoccupational postexposure prophylaxis. CMAJ. 2018

REFERRALS
HIV

Infectious Diseases Specialist Care

Family medicine with expertise in HIV

REFERRALS
HCV

Specialist care varies regionally

- Hepatology
- Infectious Diseases

Family Medicine and Addictions Medicine

Mentorship and Training Programs for primary care practitioners interested in treating HCV

- CanHepC and ECHO (UHN)

CONCLUSIONS

HCV rates > HIV rates BUT HCV is now curable and HIV remains chronic

Traditional lab-based testing is the gold standard for both HIV/HCV with future role to incorporate POC testing at front line sites to improve retention in care

With many patients still unaware of their HIV or HCV status, role for incorporating screening at key encounters such as addictions/RAAM clinics

Education should incorporate prevention, harm reduction, and post-exposure teaching