MANITOBA HIV PROGRAM

PRIMARY CARE RECOMMENDATIONS

FOR THE MANAGEMENT OF ADULTS LIVING WITH HIV IN MANITOBA

March, 2024

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HIV PROGRAM

Background

HIV is increasing in Manitoba. In 2022, the provincial HIV rate (18.9 HIV diagnoses/100,000 people) was over four times higher than the rate of HIV in Canada in 2020 (4.0 HIV diagnoses/100,000 people).[11] People living with HIV (PLHIV) are being diagnosed in all regions of the province, creating a need to expand access to care. As well, PLHIV are living longer and require access to health care that can address specific HIV-related concerns, manage chronic non-communicable diseases and co-morbidities, as well as facilitate routine preventative care and disease screening. HIV has become a chronic condition that can be managed well by primary care providers with the appropriate experience and consultation support. Primary care providers are well positioned to expand access to care and facilitate the diverse needs of PLHIV in Manitoba.

Care for PLHIV provided by primary care providers can enhance outcomes including:

- Increase linkage and retention in care,
- Increase the uptake of antiretroviral therapy (ART), and
- Improve preventive and chronic disease self-management. [12,13,14]

The Manitoba HIV Program's (MBHIVP) *Primary Care Recommendations for the Management of Adults Living with HIV in Manitoba* are based on Canadian and international HIV care guidelines, reflect the Manitoba context, and are intended to facilitate access to primary care for PLHIV throughout the province. HIV treatment recommendations are outside the scope of these guidelines. Primary care providers should collaborate with the MBHIVP to support the ongoing treatment and monitoring of PLHIV in Manitoba.

Primary care provider role in the treatment and management of PLHIV in Manitoba

- Notify all patients diagnosed with HIV
- Refer all patients living with HIV to the MBHIVP
- Conduct baseline assessment of patients newly diagnosed with HIV (Table 1)
- Offer immunizations (Table 2)
- Screen for non-infectious co-morbidities (Table 3)
- Understand the special considerations for some patients living with HIV (Table 4)
- Support the ongoing treatment and monitoring of patients living with HIV in collaboration with the MBHIVP (Table 5)

The role of the Manitoba HIV Program in the treatment and management of PLHIV in Manitoba

- Process referrals to the MBHIVP and facilitate centralized coordination of service across Manitoba
- Conduct comprehensive baseline assessment of all people newly referred to the MBHIVP
- Facilitate HIV treatment initiation or re-initiation
- Collaborate with and provide recommendations to primary care providers for ongoing treatment and monitoring once patient has a consistently suppressed viral load
- Consult with primary care providers when patients become pregnant, have abnormal test results, and for other clinical concerns
- Facilitate provincial oversight of patient engagement in care and fail-safe mechanisms to link and retain PLHIV in care
- Liaise with Public Health, First Nations Inuit Health Branch (FNIHB), primary care and communities to link and retain PLHIV in care
- Support care and HIV treatment in community for people who are not linked to HIV care through the Program to Access Treatment for HIV and Support (PATHS)
- Educate healthcare providers on HIV prevention, testing and primary care for PLHIV in Manitoba
- Monitor and evaluate the quality of HIV care in Manitoba
- Identify and administer quality assurance initiatives to enhance HIV care

Primary Care Provider Pathway for Patients Newly Diagnosed with HIV

Notify patient of positive HIV test result

- Inform patient as soon as possible after diagnosis
- Provide education

Refer patient to the MBHIVP

- All people newly diagnosed and living with HIV in Manitoba should be referred to the MBHIVP
- Initiate referral as soon as possible after notification of diagnosis
- Obtain patient consent to refer
- Refer all patients using the MBHIVP Referral Form
- Pediatric patients should also be referred to Pediatric Infectious Diseases (f: 204-272-3095)

Conduct baseline medical assessment (table 1)

- Initiate as soon as possible after notification of diagnosis
- Consult the MBHIVP urgently if baseline assessment indicates serious illness, advanced HIV or opportunistic infection

The MBHIVP will facilitate a comprehensive HIV intake and initiate HIV treatment. Once patient is stable on treatment, with consistent viral load suppression, the MBHIVP will provide recommendations to primary care providers for ongoing treatment and monitoring.

Offer routine vaccinations (table 2)

- Vaccinate as early as possible in the course of HIV disease and when a patients CD4 cell count is ≥200 cells/mm^3

Offer preventative screening for non-infectious comorbidities (table 3)

Be aware of special considerations for some PLHIV (table 4)

Support ongoing treatment and monitoring in collaboration with the MBHIVP (tables, 2, 3, 4, 5)

Consult the MBHIVP:

- If patients become pregnant
- When abnormal test results occur (page 7)
- For other clinical concerns

For people who have a reactive result using a point of care HIV test (POCT):

- Inform individual of the need for confirmatory HIV test using a 4th generation Ag/Ab test
- A confirmatory HIV test can be done by the individuals primary care provider
- If individual does not have a primary care provider or would prefer to obtain the test from an alternate provider, support the individual to self-refer to the MBHIVP by calling 1-866-449-0165
- Provide education

Baseline Assessment

A baseline assessment of people newly diagnosed with HIV should be done as soon as possible after diagnosis and can be done by primary care providers using Table 1. **If on baseline assessment there are concerns for serious illness, advanced HIV, or opportunistic infections (OIs), contact the MBHIVP for an urgent consult.**

Table 1. Baseline assessment and investigations for adults newly diagnosed with HIV [15,16,17]

Clinical and laboratory assessments	Recommendation for PLHIV	
Medical history and physical exam	■ Notify patient of positive HIV test result as soon as possible ■ Educate and reassure using MBHIVP's "My HIV test is positive, now what?" brochure ■ Identify current and ongoing risks for transmission and support contact tracing according to public health guidelines – Connect to safe sex and drug-use supplies if indicated	■ Update past medical history, medications, allergies and psychosocial history ■ Confirm date of most recent HIV negative test ■ Assess for symptoms or signs of serious illness, advanced HIV, or OIs – Conduct a review of systems – Perform a focused physical exam including vital signs and oxygen saturation
HIV specific testing	■ HIV 4th generation p24 antigen/antibody test (HIV ½ Ag/Ab combo) (in the absence of Cadham Provincial Laboratory report) ■ CD4 cell count (absolute and percent) (CD3, CD4, CD8)	■ HIV viral load ■ HIV genotyping/drug resistance ■ HIV INSTI resistance ■ Human leukocyte antigen (HLA)-B5701 test
Screen for co-morbid infections, previous exposure and immunity to other infections	■ Tuberculosis (TB): – Interferon gamma release assay (IGRA) or tuberculin skin test (TST) – Chest x-ray – Acid-fast bacillus (AFB) test (3 samples) if symptoms or signs of respiratory infection or TB ■ Hepatitis: – Hepatitis A virus antibody (HAV IgG) – Hepatitis B virus surface antigen (HBsAg), surface antibody (HBsAb Immunity) and core antibody (HBcAb Total)	– Hepatitis C virus antibody (HCV Ab) or Hepatitis C polymerase chain reaction/PCR (HCV PCR/QUANT) test if known hepatitis C antibody positive ■ Toxoplasma IgG ■ Measles IgG, mumps IgG, and rubella IgG ■ Varicella (VZV) IgG ■ Cytomegalovirus (CMV) IgG
Screen for sexually transmitted and blood borne infections (STBBIs)	■ Syphilis ■ Gonorrhea and chlamydia with urine or cervical sample, plus rectal and throat swabs as indicated ■ Trichomoniasis vaginal swab	■ Swab of any ulcerative lesions for herpes simplex virus (HSV) and treponema ■ Cervical cancer: Pap test for all people with a cervix
Screen for non-infectious co-morbidities	■ Diabetes and cardiovascular disease risk (CVD) assessment: Hemoglobin A1C (HgbA1C), random glucose, cholesterol profile ■ Liver or renal disease: Complete blood count (CBC) with differential, sodium (Na), potassium (K), chloride (Cl), carbon dioxide (CO2), calcium (Ca), Corrected Ca, phosphorus (PO4), creatinine, alanine aminotransferase (ALT), aspartate aminotransferase (AST), alkaline phosphatase (ALP), gamma-glutamyltransferase (GGT), total bilirubin, direct bilirubin, lactate dehydrogenase (LDH), albumin, urinalysis (U/A), urine albumin-creatinine ratio (UACR)	

Immunizations

PLHIV may be more susceptible to some infections. Vaccination for the prevention of illness is a critical component of care for PLHIV. In order to maximize immune response, primary care providers should offer vaccination as early as possible in the course of HIV disease. A person's immune system response to a vaccine may not be as robust when their CD4 count is low. Therefore, if the likelihood of exposure to the vaccine-preventable disease is low, primary care providers should defer routine vaccinations until after a person is on treatment and has had immune recovery with a CD4 count ≥200 (15%). Live attenuated vaccines are contraindicated if a person's CD4 count is <200 (15%) cells/mm^3.

The following vaccine recommendations are based on current Canadian and international guidelines on immunizations for adults living with HIV. Refer to the Canadian Immunization Guide for vaccine dosing schedules and other immunization recommendations.

Table 2. Vaccine recommendations for PLHIV[15,18,19]

Vaccine (inactivated)	Recommendation for adults living with HIV	Publicly funded in MB
COVID-19	Offer to patients as per current public health criteria in MB	Yes
Haemophilus influenzae type B (Hib)	Offer to all patients at least 1 year after any previous vaccine	Yes
Hepatitis A (HAV)	Offer to patients who are susceptible: ■ HAV IgG negative	Yes
Hepatitis B (HBV)	Offer double the usual dose to patients who are susceptible: ■ HBsAg negative, HBsAb negative and HBcAb negative ■ HBsAg negative, HBsAb negative and HBcAb positive with undetectable HBV DNA Offer post-serologic testing within 1 to 6 months of completion of series and offer a second vaccine series if remains HBsAb negative	Yes
Tetanus	Offer to all patients every 10 year Offer if no documented primary vaccine series	
Diphtheria (Td)	Offer to all patients every 10 years Offer if no documented primary vaccine series	Yes
Pertussis	Offer tetanus diphtheria acellular pertussis (Tdap) if no previous pertussis booster as an adult Offer if no document primary vaccine series	Yes
Pneumococcal	Offer to all patients: ■ If no previous vaccine: 1 dose of conjugate pneumococcal vaccine (Pneu-C-13) followed by 1 dose of polysaccharide pneumococcal vaccine (Pneu-P-23) at least 8 weeks later ■ If previous Pneu-P-23 vaccine: Pneu-13 at least 1 year after previous Pneu-P-23 ■ Offer additional Pneu-P-23 at least 5 years after initial Pneu-P-23 ■ Offer all patients ≥65 a dose of Pneu-P-23 vaccine, regardless of risk factors or previous pneumococcal vaccination (must be given at least eight weeks after any previous dose of Pneu-C-13 vaccine and at least 5 years after any previous dose of Pneu-P-23 vaccine)	Yes
Human papillomavirus (HPV)	Offer to males 9 to 26 years of age and females 9 to 45 years of age	Yes
Influenza	Offer to all patients annually	Yes
Meningitis conjugate (Men-C-ACYW)	Offer to all patients after diagnosis and offer a booster dose every 5 years	Yes
Herpes zoster non-live recombinant vaccine (Shingrix)	Consider inactivated herpes zoster vaccine for patients ≥50	No
Vaccine (live attenuated)	**Recommendation for adults living with HIV**	**Publicly funded in MB**
Measles-mumps-rubella (MMR)	Offer if non-immune and not pregnant and CD4 ≥200 (15%)	Yes
Varicella	Offer if non-immune and not pregnant and CD4 ≥200 (15%)	Yes

Screening for Non-Infectious Comorbidities

Primary care providers can support the ongoing care of PLHIV by screening for non-infectious comorbidities as outlined in Table 3.

Table 3. Screening recommendations for non-infectious comorbidities for PLHIV [15,16,17,21,22,23,24]

Assessment	Recommendation for PLHIV	
Cancer	■ Breast: Screen as per general population and according to BreastCheck Screening Guidelines, CancerCare Manitoba ■ Cervix: Screen annually for all people with a cervix between 21 and 69 years of age. After 3 consecutive normal Pap test results, screening interval can be extended to 3 years if patient CD4 count is >500 cells/mm^3. Any abnormal Pap test results should be referred for colposcopy (including low-grade abnormalities)	■ Colon: Screen as per general population and according to ColonCheck Screening Guidelines, CancerCare Manitoba ■ Lung: Screen according to Lung Cancer Screening Guidelines, CancerCare Manitoba ■ Anal: Consider Digital Anal Rectal Exam for men who have sex with men (MSM) and patients with HPV-associated dysplasia every 1 to 3 years
Liver disease	■ Draw the following at baseline, repeat 1 month after starting ART, then every 3 to 6 months based on stability: AST, ALT, ALP, GGT and albumin, total and direct bilirubin ■ Screen for hepatocellular carcinoma every 6 months with ultrasound for patients: – Co-infected with HCV and have cirrhosis,	– Co-infected with HBV (regardless of fibrosis stage), or – With cirrhosis from another etiology ■ Refer patients with cirrhosis for gastroscopy to screen for esophageal varices
Renal disease	■ Draw the following at baseline, 1 month after starting ART and then repeat every 3 to 6 months based on stability: Na, K, CL, CO2, Ca, PO4, Creatinine, eGFR, U/A and UACR	■ Review medications and dosing with MBHIVP pharmacist for patients with renal dysfunction. ■ Find nephrology referral algorithm at: https://www.kidneyhealth.ca/health-care-providers/
Cardiovascular disease	■ Draw the following at baseline and then annually: Lipids (total, HDL, LDL and triglycerides) ■ Counsel on modifiable risk factors and assess CVD risk annually with the Framingham Risk Score	■ If low risk for CVD, consider extending the interval to every 5 years for lipid and CVD risks assessments as per current recommendations for the general population ■ Consider discontinuing lipid screening if on a statin ■ Assess blood pressure at least annually and more frequently if abnormal
Diabetes mellitus	■ Draw the following at baseline and then annually: Fasting blood glucose (FBG) and/or glycated hemoglobin (HbA1C)	■ Evaluate and manage abnormalities according to Diabetes Canada Guidelines
Mental health and addictions	■ Assess proactively and routinely at clinic visits ■ Link to available mental health services	■ Link patients who use substances to harm reduction services, supply distribution, naloxone kits, opiate agonist therapy (OAT) and other addictions services as indicated
Bone health	■ Review bone health at baseline and every 1-2 years ■ Recommend balance and muscle strengthening exercises, reducing smoking and alcohol consumption, a diet rich in calcium and protein, a daily minimum of 400 international units of vitamin D	■ Consider screening for risk of fragility fractures using the Fracture Risk Assessment Tool (FRAX) in cisgender females >40 years of age and in all PLHIV >50 years of age ■ Identify risk factors and signs of vertebral fractures in postmenopausal females and males >50 years of age and obtain a Bone Mineral Density (BMD) scan according to Canadian guidelines*

*In Manitoba BMD screening in men, and in women <65 years of age, are not approved indications unless additional risk factors are provided. BMD may be considered for PLHIV <65 years of age and HIV status should be noted on requisition as an additional risk factor: see MB Bone Density Program for details and link to requisition at: https://www.gov.mb.ca/health/primarycare/providers/chronicdisease/bonedensity/

Special Populations

Primary care providers should consider the additional unique needs of some PLHIV as indicated in Table 4.

Table 4. Special considerations for some patients living with HIV[5,14,15,16,17,20]

Patient characteristics	Special considerations	
People with a uterus and child bearing potential	For PLHIV, not currently pregnant, and of childbearing potential: ■ Discuss contraceptive needs and preferred methods ■ Offer routine pregnancy testing ■ Be aware of potential drug-drug interactions (DDI) between ART medications and hormonal contraceptives and consult the MBHIVP ■ Provide pre-conception counselling	For PLHIV and pregnant: ■ Perinatal HIV transmission can be prevented with ART and PLHIV of childbearing potential can expect to have children without HIV ■ Refer to pediatric infectious diseases ■ Consult the MBHIVP ■ Breastfeeding is contraindicated – The MBHIVP Infant Formula Program supports the cost of formula for infants born to PLHIV
Transgender	■ Provide welcoming, safe, appropriate and gender affirming care ■ Consult the Transgender Health Klinic or other provider experienced in gender-affirming care and endocrine therapy as indicated – Be aware of potential DDI between ART and endocrine therapy and consult the MBHIVP	■ Refer to the BreastCheck Screening Guidelines, CancerCare Manitoba for individualized recommendations for breast cancer screening for transgender patients ■ Refer to the CervixCheck Screening Guidelines, CancerCare Manitoba for screening recommendations for all patients with a cervix or neo-cervix
Advanced HIV with CD4 <200 (15%) cells/mm^3	Patients with low CD4 counts may present with an OI and require treatment or be at risk for OI's and require primary or secondary prophylaxis against OIs. ■ Consult the MBHIVP	■ Based on CD4 counts and/or previous history of OI, primary care provider may initiate OI prophylaxis. For more information on prophylaxis to prevent OI's visit https://bccfe.ca/therapeutic-guidelines/opportunistic-infection-therapeutic-guidelines

Ongoing Treatment and Monitoring

The MBHIVP will provide recommendations to support primary care providers in the ongoing treatment and monitoring of patients living with HIV once patient has a consistently suppressed viral load.

Primary care providers can:

- Support patient adherence to HIV treatment in collaboration with the MBHIVP,
- Offer immunizations (Table 2),
- Screen for non-infectious co-morbidities (Table 3),
- Understand the special considerations for some patients living with HIV (Table 4), and
- Conduct ongoing lab investigations in collaboration with the MBHIVP (Table 5).

Primary care providers should consult the MBHIVP:

- If patients become pregnant,
- When **abnormal test results** occur, including:
  - Detectable viral load (HIV RNA >200 copies/mL)
  - Declining CD4 <200 (15%)
  - New positive IGRA or TST. Refer patients to respirology for assessment and treatment of Latent TB.
  - New positive HBsAG
  - New Hepatitis C infection. Primary care providers should also refer patients newly diagnosed with Hepatitis C to Viral Hepatology for treatment.
  - Decline in renal function or significant proteinuria.
- For other clinical concerns.

TABLE 5. Laboratory testing schedule for baseline and monitoring investigations of PLHIV

Laboratory test	Baseline	1 month post ART-initiation, re-initiation or change in ART	Every 3-6 months	Annually	Laboratory and requisition
HIV 1/2 Ag/Ab Combo	✓				Cadham Laboratory General Requisition
HAV IgG (immunity), HBcAb (total), HBsAg, HBsAb (immunity)	✓			✓[i]	
HCV Ab or HCV PCR/QUANT if known to be HCV Ab positive	✓			✓[ii]	
Toxoplasma IgG, CMV IgG, varicella IgG	✓				
Syphilis, gonorrhea and chlamydia, trichomoniasis screen if indicated	✓		✓[iii,iv]	✓[v]	
IGRA[6], chest x-ray	✓[vi]				
HIV viral load	✓[vii]	✓[vii]	✓[vii]		Cadham Laboratory Retrovirus Nucleic Acid Testing Requisition
HIV genotype/drug resistance	✓				
HIV INSTI resistance	✓				
CD3, CD4, CD8[8]	✓[viii]	✓[viii]	✓[vii,viii,ix]	✓[viii,ix]	Shared Health, Immunology Laboratory, Health Sciences Centre Flow Cytometry Laboratory Requisition (Immunology)
HLA-B*5701	✓				Canadian Blood Services
CBC with differential	✓	✓	✓	✓	
ALT, AST, ALP, GGT, total bilirubin, direct bilirubin, LDH, albumin, Na, K, Cl, CO2, Ca, Ca corr, albumin, phosphate, urea, creatinine	✓	✓	✓		
INR	✓				
U/A, UACR	✓	✓	✓	✓	
Lipid profile	✓			✓[x]	
HgbA1c, glucose	✓			✓[x]	
TST	✓[vii]			✓[xi]	
Pap test[xii]	✓			✓[xii]	
Pregnancy test[xiii]	✓		✓		

i. Repeat HBV screening annually if non-immune and no chronic infection.

ii. Repeat HCV screening annually if high risk (e.g active IDU).

iii. Repeat syphilis screening after syphilis treatment, every 3 months for 1 year and at 24 months, then move to annually.

iv. If high risk (multiple partners, recurrent STIs, IDU) offer complete STI screening every 3-6 months.

v. Offer annual STI screening for all PLHIV

vi. IGRA **must** be received by lab within 4 hours of blood draw, **Monday to Thursday a.m. only**. Otherwise, screen at baseline with TST.

vii. Every 3 to 6 months until suppressed for 1 year and then extend to every 6 months.

viii. Must be received at lab **within 24-48 hours of blood draw.**

ix. If consistently suppressed for over 2 years and CD4 cell count >500 cells/mm^3 can consider annual CD4 count.

x. Can individualize and move to less frequent CVD risk assessment as per general population recommendations if low risk for CVD, consider continuing with annual screening if previous abnormal, other CVD risk factors, strong family history, or on medication with high risk metabolic side effects.[6,7,8,12] Consider discontinuing lipid screening if on a statin.[13]

xi. Repeat annually if ongoing risks for TB exposure.

xii. Annually for all people with a cervix between 21 and 69 years of age. After 3 consecutive normal Pap test results, screening interval can be extended to 3 years if client CD4 count is >500 cells/mm3. Any abnormal Pap test results should be referred for colposcopy (including low-grade abnormalities).

xiii. For all persons of childbearing potential.

Glossary of Abbreviations

AFB	Acid-fast bacillus
ALP	Alkaline phosphatase
ALT	Alanine aminotransferase
ART	Antiretroviral therapy
AST	Aspartate aminotransferase
BMD	Bone mineral density
Ca	Calcium
CBC	Complete blood count
Cl	Chloride
CMV	Cytomegalovirus
CO2	Carbon dioxide
CVD	Cardiovascular disease
CXR	Chest radiography
DDI	Drug-drug interactions
eGFR	Estimated glomerular filtration rate
FBG	Fasting blood glucose
FNIHB	First Nations Inuit Health Branch
FRAX	Fracture risk assessment tool
GGT	Gamma-glutamyltransferase
HAV	Hepatitis A virus
HbA1C	Glycated hemoglobin
HBcAb	Hepatitis B virus core antibody
HBsAg	Hepatitis B virus surface antigen
HBsAb	Hepatitis B virus surface antibody
HBV	Hepatitis B virus
HCV	Hepatitis C virus
HCV Ab	Hepatitis C virus antibody
Hib	Haemophilus influenza type B
HgbA1C	Hemoglobin A1C
HLA	Human leukocyte antigen
HLA-B*5701	Human leukocyte antigen B*5701
HPV	Human papillomavirus
HSV	Herpes simplex virus
IDU	Injection drug use
IgG	Immunoglobulin G
IGRA	Interferon gamma release assay
K	Potassium
LDH	Lactate dehydrogenase
MBHIVP	Manitoba HIV Program
MMR	Measles-mumps-rubella
MSM	Men who have sex with men
Na	Sodium
OAT	Opiate agonist therapy
OI	Opportunistic infection
PATHS	Program to Access Treatment for HIV and Support
PO4	Phosphorus
POCT	Point of care test
PCR	Polymerase chain reaction
PrEP	Pre-exposure prophylaxis
PEP	Post-exposure prophylaxis
Pneu-C-13	Conjugate pneumococcal vaccine
Pneu-P-23	Polysaccharide pneumococcal vaccine
RNA	Ribonucleic acid
STBBI	Sexually transmitted or blood borne infection
STI	Sexually transmitted infection
TB	Tuberculosis
Td	Tetanus and diphtheria
Tdap	Tetanus diphtheria acellular pertussis
TST	Tuberculin skin test
U/A	Urinalysis
UACR	Urine albumin-to-creatinine ratio
VZV	Varicella-zoster virus