BRITISH COLUMBIA
CENTRE *for* EXCELLENCE
in HIV/AIDS

GUIDANCE FOR THE USE OF PRE-EXPOSURE PROPHYLAXIS (PrEP) FOR THE PREVENTION OF HIV ACQUISITION IN BRITISH COLUMBIA

AUGUST 2019

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VERSION 14.08.2019

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I BACKGROUND

Pre-exposure prophylaxis (PrEP) refers to the use of oral antiretroviral medications by HIV-negative individuals to reduce the risk of acquiring HIV infection. In this context, PrEP refers to ongoing use of antiretrovirals prior to and after potential exposure to HIV. PrEP differs from post-exposure prophylaxis (PEP) where a short course of standard three-drug antiretroviral therapy (ART) is used following a high-risk exposure event. Since 2010, six randomized controlled trials involving men who have sex with men (MSM), heterosexual HIV-serodiscordant couples, and people who inject drugs (PWID) have been published showing that tenofovir disoproxil fumarate(TDF)-based PrEP (in combination with emtricitabine (FTC), or in two studies as TDF alone) is effective as part of an HIV prevention package in individuals with high levels of adherence to medication (1-6). FTC/TDF (Truvada®) was approved by the US Food and Drug Administration (7) in July 2012, and by Health Canada in February 2016 (8), for daily oral use to prevent HIV infection.

II PrEP PROGRAM FUNDING IN BC

Since January 2018, PrEP has been publicly funded in BC for individuals who meet the eligibility criteria outlined in this document. These updated clinical practice guidelines reflect a detailed assessment of the epidemiology of new HIV infections and diagnoses within BC, existing evidence for effectiveness, and where PrEP may have maximal impact at reducing HIV transmission. These guidelines are largely consistent with the 2017 Canadian guideline on HIV pre-exposure prophylaxis (9), with some exceptions based on more recent information or more precise BC-specific data. Note that for each recommendation, a level of evidence is noted based on the GRADE criteria (10).

Grading of Recommendations Assessment, Development and Evaluation (GRADE)

Code	Quality of Evidence	Definition
A	High	Further research is very unlikely to change our confidence in the estimate of effect. • Several high-quality studies with consistent results • In special cases: one large, high-quality multi-centre trial
B	Moderate	Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate. • One high-quality study • Several studies with some limitations

Code	Quality of Evidence	Definition
C	Low	Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate. • One or more studies with severe limitations
D	Very Low	Any estimate of effect is very uncertain. • Expert opinion • No direct research evidence • One or more studies with very severe limitations

III GUIDANCE ON THE USE OF HIV PRE-EXPOSURE PROPHYLAXIS (PrEP)

1. Recommendations for PrEP in Men Who Have Sex With Men (MSM) and Transgender Women (TGW):

Daily oral FTC/TDF is recommended for cis- and transgender MSM and TGW at high risk of acquiring HIV infection (GRADE A recommendation for cisgender MSM; GRADE D recommendation for transgender MSM; GRADE C recommendation for TGW)

High risk is defined as reporting condomless anal sex **and** having **any** of the following:

a. Infectious syphilis or rectal bacterial sexually transmitted infection (STI), particularly if diagnosed in the preceding 12 months.

b. Use of non-occupational post-exposure prophylaxis (nPEP) on more than one occasion.

c. Ongoing sexual relationship with an HIV-positive partner who is not receiving stable ART and/or does not have an HIV viral load <200 copies/mL.

d. HIV Incidence Risk Index for men who have sex with men (HIRI-MSM) score ≥10 (See Table 1)

An alternative on-demand dosing schedule may also be considered for cis-gender MSM (GRADE B recommendation), but not for transgender MSM or TGW. This schedule consists of two tablets of FTC/TDF, two to 24 hours prior to anal sex, followed by one tablet daily until 48 hours after the last episode of anal sex.

On-demand dosing may be considered for cis-gender MSM who are able to effectively plan their FTC/TDF dosing around planned sexual activity, who are able to understand

the need for a double (i.e. "loading") dose prior to having sex and who are having sex less frequently than once per week. For other individuals daily dosing is recommended.

PrEP should be part of a combination prevention strategy that includes behavioural interventions such as condoms and risk reduction counselling. All HIV-negative cis- and transgender MSM and TGW reporting condomless anal sex within the last 6 months should be counselled about PrEP.

Rationale for use of PrEP in cis- and transgender MSM and TGW in BC:

1. MSM constitute the largest at-risk population in BC, comprising over 60% of all new HIV diagnoses in the province (11).
2. The overall HIV incidence for MSM attending STI clinics in BC from 2003 – 2013 was 1.0 per 100 person-years (12). Among MSM in the Momentum Study in Vancouver from 2012-2017, HIV incidence was also 1.25 per 100 person-years (13). In the STI clinic analysis in BC the risk of HIV following a diagnosis of syphilis was 3.6 per 100 person-years, and following rectal gonorrhea was 4.5 per 100 person-years. Following a dual diagnosis of rectal gonorrhea and syphilis, the HIV risk was 17.0 per 100 person-years (12). In the Momentum Study, a history of any previous STI diagnosis was associated with an HIV incidence rate of 4.8 per 100 person-years (14).
3. Non-occupational post-exposure prophylaxis (nPEP) has been used to prevent HIV following high risk consensual sexual and needle sharing encounters. Individuals who access nPEP more than once have been found to have a high risk of HIV infection, with individuals who repeatedly initiate nPEP for receptive condomless anal sex in Vancouver demonstrating an HIV incidence of 7.1 per 100 person-years (15).
4. The PARTNERS2 cohort study followed 782 HIV serodiscordant MSM couples and reported 76,088 episodes of condomless sex, during which the HIV-positive partner had an HIV viral load <200 copies/mL on ART (16). In a median of 1.0 years of follow-up, no genetically linked transmissions were documented. Hence, FTC/TDF as PrEP is unlikely to provide any additional benefit to individuals whose have HIV-positive sexual partners who are receiving effective HIV treatment.
5. Use of validated clinical assessment tools, such as the HIRI-MSM (Table 1), is a clinically useful strategy that can identify MSM at higher risk of seroconversion. A HIRI-MSM score ≥10 has high sensitivity to detect incident HIV infection (17). Use of HIRI-MSM has been validated in the Momentum study in Vancouver where risk of HIV infection among individuals with a HIRI-MSM score of ≥10 was approximately 2.0 per 100 person-years of follow-up. For those with score >25, the risk was 7.0 per 100 person-years (14), in comparison to an overall HIV incidence rate of 1.1 per 100 person-years among all MSM in the study. Among those with HIRI-MSM score of <10, there were no incident HIV cases in a median of 2.23 years of follow-up (14).
6. Only one randomized trial, iPrex (1) included TGW, and in this study 14% of participants were TGW. In a sub-analysis of only TGW participants, which included follow-up in the open label extension, the overall efficacy of FTC/TDF was not significantly different from

placebo (hazard ratio 1.1, 95% confidence interval [CI] 0·5–2·7). However, none of the TGW who seroconverted had detectable levels of FTC/TDF in their blood at their seroconversion visit, and no TGW with blood levels consistent with taking at least 4 tablets per week of FTC/TDF developed a new HIV infection (18). The authors concluded that the lack of PrEP efficacy was primarily related to poor adherence among those who seroconverted. The evidence for effectiveness for PrEP is less certain for TGW who have sex with men than for cis-gendered MSM.

7. None of the randomized trials of PrEP included transgender MSM, therefore the recommendation for transgender MSM is based on the opinion of committee members.

8. On-demand dosing of FTC/TDF has been studied in one randomized controlled trial among cis-gender MSM (5). The IPERGAY study showed an 86% relative risk reduction of HIV seroconversion among 199 MSM randomized to on-demand FTC/TDF in comparison to 201 MSM randomized to on-demand placebo. In an open-label extension of this study, the use of on-demand PrEP was associated with a 97% risk reduction compared to placebo (19). Furthermore, in a sub-study of IPERGAY, participants who used fewer than 15 pills per month with a median number of 5 intercourse events per month, no seroconversions have been observed in 68.9 person-years of follow-up (20). In an observational study of 1043 MSM in Paris, France, who were offered either on-demand or daily FTC/TDF as PrEP, more than 75% opted for the on-demand regimen. In 486 person-years of follow-up, 4 individuals acquired HIV, 2 in each of the on-demand and daily PrEP arms, suggesting that the on-demand regimen is as effective as daily PrEP (21). However, other studies have found reduced overall coverage in FTC/TDF-protected sex acts in some settings with non-daily prescribed dosing (22). FTC/TDF is not licensed in Canada for on-demand dosing; therefore, prescribing it to be used in this manner is considered "off-label." Furthermore, on-demand dosing would not be appropriate for individuals co-infected with hepatitis B virus, where continuous daily treatment is required.

2. Recommendations for PrEP in Heterosexual Men and Women

Daily oral FTC/TDF is recommended for heterosexual men and women at high risk of acquiring HIV infection (GRADE B recommendation).

High risk is defined as reporting condomless vaginal or anal sex and meeting the following additional criteria:

a. Ongoing sexual relationship with an HIV-positive partner who is not consistently taking stable ART and/or does not have an HIV viral load <200 copies/mL.

On-demand dosing of FTC/TDF is NOT recommended for heterosexual men or women as there have been no studies which have examined such dosing within this population

Rationale for use of PrEP in heterosexual men and women in BC:

1. For heterosexual men or women in BC, new HIV diagnoses are extremely rare (59 cases in 2016 and 28 in 2017) (23) relative to the size of the heterosexual population of approximately 4 million. Among individuals newly diagnosed with HIV in the province from

2008-2015 who reported only heterosexual exposures, approximately 48% reported that they had a sexual partner who was known to be HIV-positive (24).

2. The PARTNERS cohort study evaluated HIV transmission in 548 HIV serodiscordant heterosexual couples reporting 36,000 episodes of condomless sex, during which the HIV-positive partner had an HIV viral load <200 copies/mL on ART (25). In a median of 1.9 years of follow-up, no genetically linked transmissions were documented. Hence, FTC/TDF as PrEP is unlikely to provide any additional benefit to individuals whose have HIV-positive sexual partners who are receiving effective HIV treatment.

3. Among individuals newly diagnosed with HIV from 2008-2015 in BC who reported only heterosexual exposures, only 5% reported participating in sex work. Sex work is more commonly reported (11%) among individuals newly diagnosed with HIV who report injection drug use as a potential route of HIV exposure (24). A recent analysis from the VIDUS study also found that sex work itself was not associated with HIV incidence when adjusting for other risk factors among individuals who use injection drugs (26). Therefore, sex work itself does not appear to substantially increase risk for acquiring HIV in BC to warrant a separate indication for PrEP to prevent heterosexual transmission.

4. Heterosexual exposure to partners who have other risk factors for HIV are reported relatively rarely. Of individuals newly diagnosed with HIV from 2008-2015 whose only exposure was through heterosexual sex, 6% reported having a sexual partner who was MSM, another 6% reported that their partner had a history of injection drug use, and 13% were from countries with high HIV prevalence (24). As such, having a sexual partner with additional risk factors or being from an endemic country are not sufficient to warrant specific consideration for PrEP unless the above criteria are met.

5. No randomized clinical trials or observational studies examining the effectiveness of on-demand PrEP have been conducted among individuals at risk of acquiring HIV through heterosexual transmission. Pharmacokinetic data demonstrate that TDF levels do not concentrate in vaginal tissue as rapidly as they do in rectal tissue (27, 28), suggesting on-demand PrEP would be less effective for vaginal sex than daily PrEP.

3. Recommendations for PrEP in Persons Who Inject Drugs (PWID)

Daily oral FTC/TDF is recommended for PWID who are at high risk of acquiring HIV infection (GRADE B recommendation).

High risk is defined as reporting sharing of injection equipment and meeting the following additional criteria:

a. Having an HIV-positive injecting partner who is not consistently taking ART **and/or** does not have an HIV viral load <200 copies/mL.

On-demand dosing of FTC/TDF is NOT recommended for PWID as there have been no studies which have examined such dosing within this population.

All PWID who report these risk behaviours should be actively referred to harm reduction services.

Rationale for use of PrEP in PWID in BC:

1. BC has seen a dramatic decrease in new HIV diagnoses among people who use injection drugs, from 125 per year in 2005 to 16 in 2016 and 18 in 2017(23). Furthermore, in the VIDUS and ARYS cohorts of PWID in Vancouver, the incidence of HIV infection since 2008 has been 0.28 per 100 person-years (29). While risk factors for HIV transmission among PWID through VIDUS have been identified (26), none of them would impart an expected risk of HIV acquisition of >1 per 100 person-years.
2. Among PWID newly diagnosed with HIV from 2008-2015, 43% reported have an injecting partner who is HIV-positive and 48% reported sharing injection equipment (24).
3. While the effectiveness of HIV treatment in reducing transmission risk among PWID has not been well studied, it is assumed to be similar in magnitude to the effectiveness of treatment in reducing HIV transmission through vaginal or anal intercourse. An observational study of PWID in Vancouver from 1996-2007 found large decreases in HIV incidence from a peak of 12 per 100 person-years to a low of <1 per 100 person-years, which paralleled decreases in the median viral load due to expanded use of ART among HIV-positive PWID during the same period (30). Hence, FTC/TDF as PrEP is unlikely to provide any additional benefit to individuals whose HIV-positive injecting partners are receiving effective HIV treatment.
4. PrEP has been demonstrated to be 49% effective in preventing HIV acquisition in one randomized controlled trial of PWID in Bangkok, Thailand (4). The incidence of HIV infection even among participants in the placebo arm was quite low (0.68 per 100 person-years), likely due to the effectiveness of harm reduction equipment provided to all study participants.
5. No randomized controlled trials or observational studies examining the effectiveness of on-demand PrEP have been conducted among individuals at risk of acquiring HIV through injection drug use.

IV ASSESMENT FOR PrEP

1. Confirm negative HIV antigen/antibody (Ag/Ab) test within 15 days before starting PrEP medication, using a 4th generation HIV Ag/Ab enzyme immunoassay (EIA) with consideration for the window period of this assay in relation to last risk exposure.
    - » If symptoms suggestive of acute HIV infection within the previous 6 weeks are present, and/or history of high-risk condomless sex in the previous month, a pooled nucleic acid amplification test (NAAT) for HIV RNA is recommended. This test can be arranged by contacting a virologist at the BC Centre for Disease Control (BCCDC; 604-707-5600). Defer PrEP initiation until acute HIV infection is ruled out.

2. For heterosexual women, determine if there are immediate plans to become pregnant, or if the woman is currently pregnant or breastfeeding, as this may alter the risk/benefit ratio for PrEP[1].

3. Confirm adequate renal function: calculated creatinine clearance or estimated glomerular filtration rate (eGFR) ≥60 mL/minute, and absence of proteinuria on urinalysis and/or quantitative test (urine albumin to creatinine ratio [UACR]).

4. Screen for hepatitis B and C virus (see Table 2) and vaccinate against hepatitis B if non-immune. **If FTC/TDF PrEP is to be prescribed for a person with chronic hepatitis B virus (HBV) infection, appropriate HBV monitoring should be performed in accordance with Canadian HBV treatment guidelines (31), and referral to a qualified practitioner with HBV treatment experience is recommended.**

5. Screen and treat for other STIs (gonorrhea, chlamydia, syphilis) following Canadian Guidelines (32).

6. Review current medications for overlapping toxicities with FTC/TDF. Since FTC and TDF are primarily renally eliminated, there is a potential for increased nephrotoxicity with other agents that can affect renal function or compete for active tubular secretion, i.e. acyclovir, valacyclovir, and non-steroidal anti-inflammatory drugs (NSAIDS) (8).

7. As TDF has been associated with decreases in bone mineral density in both HIV treatment and PrEP settings (12, 27, 33-35), it should be used with caution in persons with a history of osteoporosis or osteomalacia, fragility fractures, or significant risk factors or secondary causes (e.g. long-term glucocorticoid therapy, androgen deprivation therapy for prostate cancer, hypogonadism, primary hyperparathyroidism, and intestinal disorders) for osteoporosis. At present, no specific bone mineral density screening is recommended before or during PrEP use.

8. Counsel regarding adherence, risk reduction, and need to seek immediate medical attention if symptoms of acute HIV develop.

V PRESCRIBING PrEP MEDICATION

- As daily oral therapy PrEP should prescribed as one tablet of emtricitabine (FTC) 200 mg/tenofovir disoproxil fumarate (TDF) 300 mg to be taken once per day.
- For MSM without HBV infection for whom on-demand PrEP is appropriate, it should be prescribed as two tablets of FTC/TDF, 2 to 24 hours prior to anal sex, followed by one tablet daily until 48 hours after the last episode of anal sex. The amount prescribed should be appropriate for the anticipated amount to be used over a one- (for initial prescriptions) or three-month (for refill prescriptions) period, in 30, 60, or 90 pill quantities.
- The time from initiation of daily oral doses of FTC/TDF to maximal protection against HIV infection is unknown. However, pharmacokinetic data from HIV-infected individuals suggest that

1 For HIV serodiscordant couples planning to become pregnant, pre-assessment counselling regarding the use of PrEP should include information on maximal risk reduction, alternate options for conception, and ensuring that timing of intercourse is planned around most fertile period of the menstrual cycle. Clinicians should contact a qualified specialist or The Oak Tree Clinic at BC Women's Hospital and Health Centre (604-875-2212; 1-888-711-3030) for more detailed information.

steady-state level in the rectal mucosa is reached after 7 days (27, 28). More recent studies suggest that cervical-vaginal mucosa levels may also reach a steady state levels within 7 days (36). Individuals should be counselled to continue safer sex practices during this period.

- Prescribe a 30-day supply initially, then reassess for adherence and tolerability. Prescriptions should be renewed only after repeat HIV testing confirms that the patient remains HIV-negative and eligibility criteria persist. Repeat prescriptions should be provided and reassessment performed at intervals not longer than 90 days.
- For women, ensure that pregnancy test is negative or, if pregnant, that the patient has been informed about the potential risks and benefits of PrEP during pregnancy.
- Regularly review ongoing HIV risk exposures and need for ongoing PrEP.
- Review additional HIV risk reduction counselling and PrEP medication-adherence counseling.
    - » Adherence counselling should emphasize that efficacy of PrEP was greatly reduced amongst individuals who did not take the medication as prescribed.

VI FOLLOW-UP WHILE PREP IS BEING PRESCRIBED

- **After first month, then at minimum every 3 months thereafter:**
    - » Monitor HIV antibody status using the 4th generation HIV Ag/Ab EIA and document negative status.
    - » Assess for symptoms of acute HIV infection since last visit (37). If symptoms are present, consider requesting a HIV RNA NAAT test by consulting the medical microbiologist on call at the BCCDC Public Health Laboratory (604-661-7033) and consult with a physician with expertise in acute HIV infection regarding ongoing FTC/TDF use while awaiting test results.
    - » Check serum creatinine and urinalysis and/or urine albumin to creatinine ratio (UACR). If renal dysfunction develops such that the eGFR falls to <60 mL/min on two measurements, at least two to four weeks apart, then FTC/TDF should be discontinued. If there is persistent significant proteinuria (samples with at least + for protein [i.e. more than trace]) on at least 2 occasions or severely increased albuminuria (UCAR >30 mg/mmol), PrEP should be discontinued regardless of eGFR. If UCAR is >60 mg/mmol, refer to nephrology.
    - » At each follow-up visit perform full STI screens for syphilis, gonorrhea, and chlamydia from all appropriate body sites. Quarterly monitoring was performed in most PrEP studies, and a recent analysis in the US found that 20-40% of STIs would have been missed if screening was conducted only twice yearly in MSM (38).
    - » At each follow-up visit for women, conduct a pregnancy test and document results; if pregnant, discuss continued use of PrEP with patient and prenatal care provider.
    - » Evaluate and support PrEP medication adherence at each follow-up visit, and more often if inconsistent adherence is identified.

    - » Assess risk behaviours and need for ongoing PrEP; provide risk-reduction counselling and condoms.
    - » Assess for syndemic mental health issues and addictions which might be contributing to HIV risk and refer to appropriate management services.
- **At minimum every 6-12 months:**
    - » Test for hepatitis C (unless already known to be hepatitis C-positive), particularly in PWID and in MSM (39).

VII STOPPING PrEP

- Individuals may stop PrEP for multiple reasons, including a change in HIV risk status, or personal choice.
- If PrEP is to be halted, the optimal duration of PrEP continuation after a recent sexual exposure is unclear. PrEP should be continued for at least 48 hours after a high risk exposure (based on data derived from the IPERGAY trial (5)); however, continued use for as long as 28 days after a high risk exposure is recommended by some groups (40).
- There are currently no data to support stopping strategies for individuals with only heterosexual exposures and PWID. Individuals with these exposures should follow the same recommendations as for MSM.
- Order HIV Ag/Ab tests as above to document current HIV status.
- If HIV-positive, order and document results of HIV resistance testing, and establish immediate linkage to HIV care.
- If HIV-negative, establish linkage to risk reduction support services as indicated.
- If PrEP is to be resumed in the future, baseline assessment for HIV Ag/Ab status should be performed before resuming (see Assessment for PrEP).
- If patient is being treated for active hepatitis B, ensure appropriate specialist referral prior to stopping PrEP. If patient was receiving treatment for active hepatitis B prior to PrEP, these medications will need to be re-initiated for hepatitis B management following withdrawal of FTC/TDF. Individuals with hepatitis B should be monitored for liver enzyme flare following withdrawal of PrEP if no other hepatitis B therapies are initiated.
- If pregnant, inform prenatal care provider of FTC/TDF use in early pregnancy and coordinate care to maintain HIV prevention during pregnancy and breastfeeding. Perform HIV testing in each trimester and prior to delivery to ensure seroconversion during pregnancy has not occurred.

TABLE 1: HIV INCIDENCE RISK INDEX FOR MEN WHO HAVE SEX WITH MEN (HIRI-MSM).

MSM Risk Index		
1. How old are you today?	If <18 years, score 0 If 18-28 years, score 8 If 29-40 years, score 5 If 41-48 years, score 2 If 49 years or more, score 0	
2. In the last 6 months, how many men have you had sex with?	If >10 male partners, score 7 If 6-10 male partners, score 4 If 0-5 male partners, score 0	
3. In the last 6 months, how many times did you have receptive anal sex (you were the bottom) with a man without a condom?	If 1 or more times, score 10 If 0 times, score 0	
4. In the last 6 months, how many of your male sex partners were HIV-positive?	If >1 positive partner, score 8 If 1 positive partner, score 4 If 0 positive partner, score 0	
5. In the last 6 months, how many times did you have insertive anal sex (you were the top) without a condom with a man who was HIV-positive?	If 5 or more times, score 6 If <5 times, score 0	

MSM Risk Index		
6. In the last 6 months, have you used meth-amphetamines such as crystal or speed?	If yes, score 6 If no, score 0	
Add entries in right column to calculate total score		**Total Score***

***If score is 10 or greater, evaluate for intensive HIV prevention services including PrEP.**
If score is below 10, provide indicated standard HIV prevention services.

TABLE 2: SUMMARY OF GUIDANCE FOR PREP USE IN BC (ADAPTED FROM US FOOD AND DRUG ADMINISTRATION (7)).

	Men who have sex with men	Heterosexual men and women	People who use injection drugs
Detecting substantial risk of acquiring HIV infection	Reports condomless sex **and** at least one of: • Diagnosis of syphilis or rectal gonorrhea or chlamydia within last 12 month; or • Ongoing sexual relationship with an HIV-positive partner who is not receiving stable ART and/or does not have a viral load consistently <200 copies/mL; or • Repeated courses of nPEP; or • HIRI-MSM score ≥10	Reports Reports condomless vaginal or anal sex **and** HIV-positive sexual partner not receiving stable ART **and/or** does not have a viral load consistently <200 copies/mL[2]	Reports sharing injection equipment **and** HIV-positive injecting partner not receiving stable ART **and/or** does not have a viral load consistently <200 copies/mL[1]
Clinically eligible	Documented negative HIV test result within 15 days before prescribing PrEP No signs/symptoms of acute HIV infection Normal renal function; no contraindicated medications Documented hepatitis B virus infection status and vaccination status Avoid in patients with documented osteoporosis or osteomalacia		
Prescription	For daily, continuing therapy of emtricitabine/tenofovir DF; 30-day supply initially, then 90-day supply on a continuing basis if adherence, tolerability, and eligibility confirmed For on-demand dosing, prescribe two tablets of FTC/TDF, 2 to 24 hours prior to anal sex, followed by one tablet daily until 48 hours after the last episode of anal sex. Prescribe 30 tablets initially, then enough to cover at least 90 days if adherence, tolerability, and eligibility confirmed.		

	Men who have sex with men	Heterosexual men and women	People who use injection drugs
Other services	Follow-up visits after 1 month and at minimum every 3 months thereafter, to provide the following: HIV test, assess renal function, medication adherence counselling, behavioural risk reduction support, side effect assessment, STI symptom assessment		
	Conduct urethral/oral/rectal STI testing as appropriate with reported sexual behaviour every 3 months	Assess pregnancy intent Pregnancy test every 3 months Conduct STI testing as appropriate with sexual behaviour	Access to clean needles/syringes and drug treatment services Conduct STI testing as appropriate with sexual behaviour

2. For individuals in a stable, monogamous relationship with an HIV-positive individual, the use of effective antiretroviral therapy by the HIV-positive individual as demonstrated by a sustained HIV viral load <50 [22] or <200 copies/mL [19] has been shown to reduce the risk of HIV transmission to very low or negligible levels. The effectiveness of HIV treatment in reducing the risk of transmission through sharing injection equipment among PWID is unknown, but is assumed to be the same order of magnitude as for reducing sexual transmission. The added value of PrEP in these settings has not been evaluated.

TABLE 3: SUMMARY OF TESTING RECOMMENDATIONS DURING PrEP.

Assay Type	Baseline	After first month then Q3 months	Q 6 months
HIV Serology (4th Generation Ab/Ag Assay)	X	X	
HIV RNA Pooled NAAT Test (for those with symptoms of acute HIV)	X	X	
Hepatitis B Screen (Hepatitis B Surface Antigen, surface antibody, core antibody)*	X*		
Hepatitis C Screen (Hepatitis C Antibody, if not known to be hepatitis C-positive)	X		X (for PWID and MSM)

Assay Type	Baseline	After first month then Q3 months	Q 6 months
Gonorrhea screen^ (urine NAAT test, throat and rectal swabs for gonorrhea depending on type of sexual activity reported)	X	X (for MSM)	X
Chlamydia Screen ^ (Chlamydia urine NAAT test; throat and rectal swabs for chlamydia depending on type of sexual activity reported)	X	X (for MSM)	X
Syphilis Screen^ (T. pallidum EIA)	X	X (for MSM)	X
Creatinine and urinalysis or Urine albumin to creatinine ratio	X	X	
Pregnancy test (for women of child-bearing potential)	X	X	

*Hepatitis B Vaccine should be initiated in unvaccinated individuals who are anti-HBs Ab negative.
^Individuals diagnosed with concurrent STI should be offered standard therapy following Canadian Guidelines (32)

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