Yakima Health District BULLETIN

Volume 15, Issue 4 December 2016

Zika Virus: Updated Recommendations Addressing Pregnancy and Sexual Transmission

Actions Requested:

- Advise pregnant women to avoid travel to Zika-affected areas. This includes Mexico, essentially all of Latin American and the Caribbean, parts of Miami-Dade County, islands in the South Pacific, Papua New Guinea, and Bangladesh.
- Routinely ask pregnant women about recent travel to Zika-affected areas and, if exposed during the current pregnancy or within eight weeks prior to the current pregnancy, offer serologic testing 2-12 weeks after the last exposure.
- Note that positive IgM results obtained through LabCorp have had an 80% false-positive rate upon further testing at the Centers for Disease Control and Prevention (CDC). Exercise caution in interpreting such results and seek further testing for confirmation.
- Advise women traveling to Zika-affected areas to avoid conception and unprotected sexual contact for eight weeks following their return (or eight weeks following onset of illness if they are a Zika case).
- If women have a male sexual partner who traveled to an affected area, they should avoid unprotected sexual contact with that partner until six months after his return.
- Advise men traveling to Zika-affected areas to avoid conception and unprotected sexual contact for six months following their return (or six months following onset of illness if they are a Zika case).
- **Contact YHD at (509) 249-6541 to report suspected cases or to obtain consultation on laboratory testing of potentially exposed returning travelers.**

Background

Table. Zika Virus Infections by Region and Pregnancy Status

Group	Yakima County	WA State	United States	US Territories[1]
Confirmed Cases	8	58	4,255	32,068
Pregnant Women with Positive Results[3]	0	--[2]	1,087	2,451

[1] Includes Puerto Rico
[2] No data reported
[3] Confirmed positive serology or PCR—not necessarily clinical cases

- Through November 18, 2016, nine clinical cases of Zika virus infection have been reported in Yakima County residents. All nine were non-pregnant travelers returning from having visits to affected areas of Mexico. Of these nine cases, seven have been confirmed by nucleic acid amplification (6) or serology (1). Laboratory confirmation for the remaining two is pending. Dates of diagnosis range from July 29 through November 9, 2016.
- In addition to these cases, 2 asymptomatic pregnant women and 2 babies have been tested following possible exposure with the oversight and assistance of YHD. Both babies have tested negative for Zika virus.
- Asymptomatic pregnant women who are first evaluated 2 to 12 weeks after their last possible exposure should first receive a Zika virus IgM antibody test; if the IgM antibody test result is positive or equivocal (unclear), PCR testing of urine, serum and whole blood

Inside this issue:

Flyers/Inserts:

should be performed.

- Testing for symptomatic cases (call YHD at 509 249-6541 for assistance)
  - <2 weeks after last exposure: serum, whole blood and urine for PCR
  - 2-12 weeks after last exposure: serum IgM
- For more background details, see the inserted algorithm for evaluating pregnant women and the resources below.

Additional Resources

- Interim Guidance for Health Care Providers Caring for Pregnant Women: http://www.cdc.gov/mmwr/volumes/65/wr/mm6529e1.htm?s_cid=mm6529e1_w http://www.cdc.gov/zika/hc-providers/pregnant-woman.html
- Washington State DOH Zika webpage for healthcare providers: http://www.doh.wa.gov/YouandYourFamily/IllnessandDisease/ZikaVirus/healthcareprovidersClinicallabs
- CDC's Zika webpage for healthcare providers: http://www.cdc.gov/zika/hc-providers/index.html

HIV Pre-Exposure Prophylaxis (PrEP)

Requested Actions

- Ensure that all patients who are men who have sex with men (MSM) or transgender persons who have sex with men know about pre-exposure prophylaxis (PrEP) against human immunodeficiency virus (HIV).
- Identify and initiate PrEP for HIV among priority populations (see recommendations below).
- Consult prevailing guidelines for initial evaluation, regimen selection, and ongoing monitoring of safety and effectiveness (see insert).[1]
- Note that the baseline laboratory evaluation for PrEP includes anti-HIV serology (potentially supplemented with HIV nucleic acid detection), HBsAg, anti-HBs, and serum creatinine. Patients with renal insufficiency or HBV infection should be referred to an expert prior to initiation of PrEP.
- If PrEP is initiated, repeat visits for HIV testing should occur every three months to exclude acute infection while also conducting an adherence and tolerance check. Serum creatinine should be checked every six months.
- When considering PrEP, be sure to include an assessment of the patient's knowledge and readiness, as well as the patient's potential to adhere to the daily regimen and monitoring schedule.
- Encourage patients to use PrEP in combination with other effective prevention methods (e.g., condoms) that also reduce the risk of HIV and other sexually transmitted infections.

Background

Initiation and adherence to PrEP using emtricitabine (FTC) 200mg plus tenofovir (TDF) 300mg taken together once daily in a combination tablet (Truvada) has been documented to reduce the risk of HIV acquisition in highest risk MSM by up to 90%.[2] Substantial reductions in transmission have also been documented among serodiscordant heterosexual couples and injectors of illicit drugs (75% each). FTC/TDF combination therapy is approved by the Food and Drug Administration for use as PrEP.

Reported HIV incidence in Yakima County during 2010-2015 was as follows:

Year	2010	2011	2012	2013	2014	2015
Cases	16	8	7	6	9	6

Close to 75% of all HIV infections across Washington State occur in MSM, and MSM are the primary candidate population for PrEP use. Approximately 200 Yakima County residents are living with an HIV infection that has been reported to the public health system. Of these, about 80% have a viral load on record within the past year, and the viral load is suppressed in 90% of those.[3] That leaves about 30% of known local HIV infections (n=60) that are either not suppressed or not in care at all. Applying the national estimate that 12% of HIV-infected people are unaware of their status[4] would add another 30 cases locally, for a total estimate of about 90 untreated-or-unsuppressed infections in the county. Notwithstanding the recent decline in reported cases noted in the table above, the risk for exposure to HIV appears to remain substantial for local MSM.

The strongest risk factors for HIV acquisition among MSM appears to be methamphetamine or popper use and having rectal gonorrhea or early syphilis.[5] MSM with these risk factors had an incidence of HIV exceeding 3% per year in the study cited, compared to 0.5% or less for MSM statewide.

Specific eligibility criteria:

The strongest recommendation for use of PrEP is directed toward:

- MSM or transgender persons who have sex with men AND who have one of the following features:
  - Diagnosis of rectal gonorrhea or early syphilis in the prior 12 months.
  - Methamphetamine or popper use in the prior 12 months.
  - History of providing sex for money or drugs in the prior 12 months.

AND/OR

- Persons in ongoing sexual relationships with an HIV-infected person who is not on antiretroviral therapy (ART) or who is on ART but is not virologically suppressed or who is within 6 months of initiating ART.

Other medium priority groups include MSM and transgender persons who have sex with men AND who have one of the following features:

- Condomless anal sex (excluding long-term, mutually monogamous relationships between HIV negative men).
- Diagnosis of urethral gonorrhea or rectal chlamydial infection in the prior 12 months.

Other groups for whom PrEP may still be considered:

- MSM or transgendered persons who have sex with men AND who have condomless insertive sex (excluding mutually monogamous relationships between HIV negative men).
- Persons in HIV-serodiscordant relationships in which the female partner is trying to get pregnant.
- Persons in ongoing sexual relationships with HIV infected persons who are on antiretroviral therapy and are virologically suppressed.
- Women who provide sex for money or drugs.
- Persons who inject drugs that are not prescribed by a medical provider.
- Persons completing a course of post-exposure antiretroviral prophylaxis for non-occupational HIV exposure.
- Other persons seeking a prescription for PrEP.

Financial Barriers

- Without insurance, out-of-pocket costs for PrEP can exceed $10-15,000 per year. Even with insurance, co-pays and deductibles can negatively impact adherence.
- The Washington State Department of Health's PrEP Drug Assistance Program (DAP) exists for **INSURED** HIV-negative Washingtonians who are at high risk of becoming HIV infected and are prescribed TDF/FTC for PrEP. If needed, PrEP DAP pays the monthly co-pay and deductible for eligible participants. More information can be seen and applications can be downloaded at http://www.doh.wa.gov/YouandYourFamily/IllnessandDisease/HIVAIDS/HIVCareClientServices/PrEPDAP
- **UNINSURED** HIV-negative Washingtonians should contact Gilead Advancing Access at 800-226-2056.

Questions?

A clinical consultation line regarding PrEP that is operated by the University of California San Francisco can be reached by calling 855-448-7737. Visit their website at http://nccc.ucsf.edu/2014/09/29/introducing-the-ccc-prepline/

Acknowledgement

Risk criteria were adapted with permission from: Public Health Seattle & King County. Pre-Exposure Prophylaxis (PrEP) Implementation Guidelines 2015. http://www.kingcounty.gov/healthservices/health/communicable/~/media/health/publichealth/documents/hiv/PrEP-Implementation-Guidelines.ashx

References

[1] U.S. Public Health Service. Preexposure Prophylaxis for the Prevention of HIV Infection in the United States - 2014: A Clinical Practice Guideline. 2014. https://www.cdc.gov/hiv/pdf/prepguidelines2014.pdf

[2] CDC. Pre-exposure Prophylaxis. https://www.cdc.gov/hiv/risk/prep/

[3] Washington State Department of Health. Washington State Semiannual HIV Semiannual Report, 2nd edition 2015. http://www.doh.wa.gov/DataandStatisticalReports/DiseasesandChronicConditions/HIVAIDSData/SurveillanceReports

[4] Centers for Disease Control (CDC). HIV Testing. https://www.cdc.gov/hiv/testing/

[5] Menza TW, Hughes JP, Celum CL, Golden MR. Prediction of HIV acquisition among men who have sex with men. Sex Transm Dis. 2009;36(9):547-555.

Influenza Reporting, Diagnosis, and Treatment

Please report the following to YHD by calling (509) 249-6541:

- Laboratory-confirmed influenza deaths in persons of all ages (within three days).
- Patients suspected to be infected with a novel or unsubtypable influenza virus (immediately).
- Outbreaks of influenza-like illness or laboratory positive influenza in an institutional setting (e.g., long term care facility) (immediately).

Influenza Diagnosis

- Rapid diagnostic testing for influenza can be very useful for clinical decision-making. However, sensitivity of rapid tests is low, ranging from 50–70%. Rapid tests may not detect novel or variant influenza viruses. Therefore, a negative rapid test does not rule out influenza. Positive and negative predictive values vary considerably depending upon influenza activity in the community.
- False-positive influenza test results are more likely to occur when influenza activity is low, which is generally at the beginning and end of the influenza season.
- False-negative influenza test results are more likely to occur when influenza activity is high, which is typically at the height of the influenza season.

Influenza Treatment

- When influenza is actively circulating, a person who has symptoms suggesting influenza and who is also at high risk for complications should be treated with a neuraminidase inhibitor (e.g., oseltamivir, zanamivir), regardless of rapid test results.
- Persons at high risk for flu complications include children less than five years of age (especially those under age two), people age 65 and older, pregnant women, or persons with diabetes, asthma, heart disease, morbid obesity, or other chronic health conditions.
- Early treatment with a neuraminidase inhibitor can shorten the duration of fever and illness symptoms and may reduce the risk of complications from influenza (e.g., otitis media in young children, pneumonia, hospitalization, and respiratory failure). Neuraminidase inhibitors work best when given within 48 hours of flu onset.
- Seasonal influenza surveillance continues through the end of the respiratory virsus season. We post weekly or biweekly influenza surveillance updates on our website at: http://www.co.yakima.wa.us/365/RSV-Flu-Stats.
- Additional influenza surveillance information can be viewed at: http://www.doh.wa.gov/DataandStatisticalReports/DiseasesandChronicConditions/CommunicableDiseaseSurveillanceData/InfluenzaSurveillanceData and http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

For influenza, prevention, diagnosis and treatment guidelines, visit http://www.cdc.gov/flu/professionals/index.htm

Recent Health Care Provider Advisories & Alerts

- Increase in Mumps Cases in Western Washington (December 7, 2016)
- Increase in suspected cases of Acute Flaccid Myelitis in WA State since Sept 2016 (November 4, 2016)
- Health Care Provider Advisory: Zika Update (September 1, 2016)
- Health Update: Influx of Fentanyl-laced Counterfeit Drugs (August 31, 2016)

To access, visit http://www.co.yakima.wa.us/1434/Health-Advisories-and-Alerts
To sign up for alerts, go to Notify Me (http://www.yakimacounty.us/list.aspx) and follow the instructions given at the top of the page. Please check all relevant boxes for notification: **Alert Center** 'Health Alerts from Yakima Health District' - Notifications about Bulletins, Health Advisories and Alert, etc. & **News Flash** 'Health District' - For Emergency Health Alerts.

YAKIMA HEALTH DISTRICT

1210 Ahtanum Ridge Drive
Union Gap, WA 98903

Reporting Line: (509) 249-6541
After hours Emergency: (509) 575-4040 #1
Toll Free: (800) 535-5016 x 541

Confidential Fax: (509) 249-6628

http://www.yakimapublichealth.org

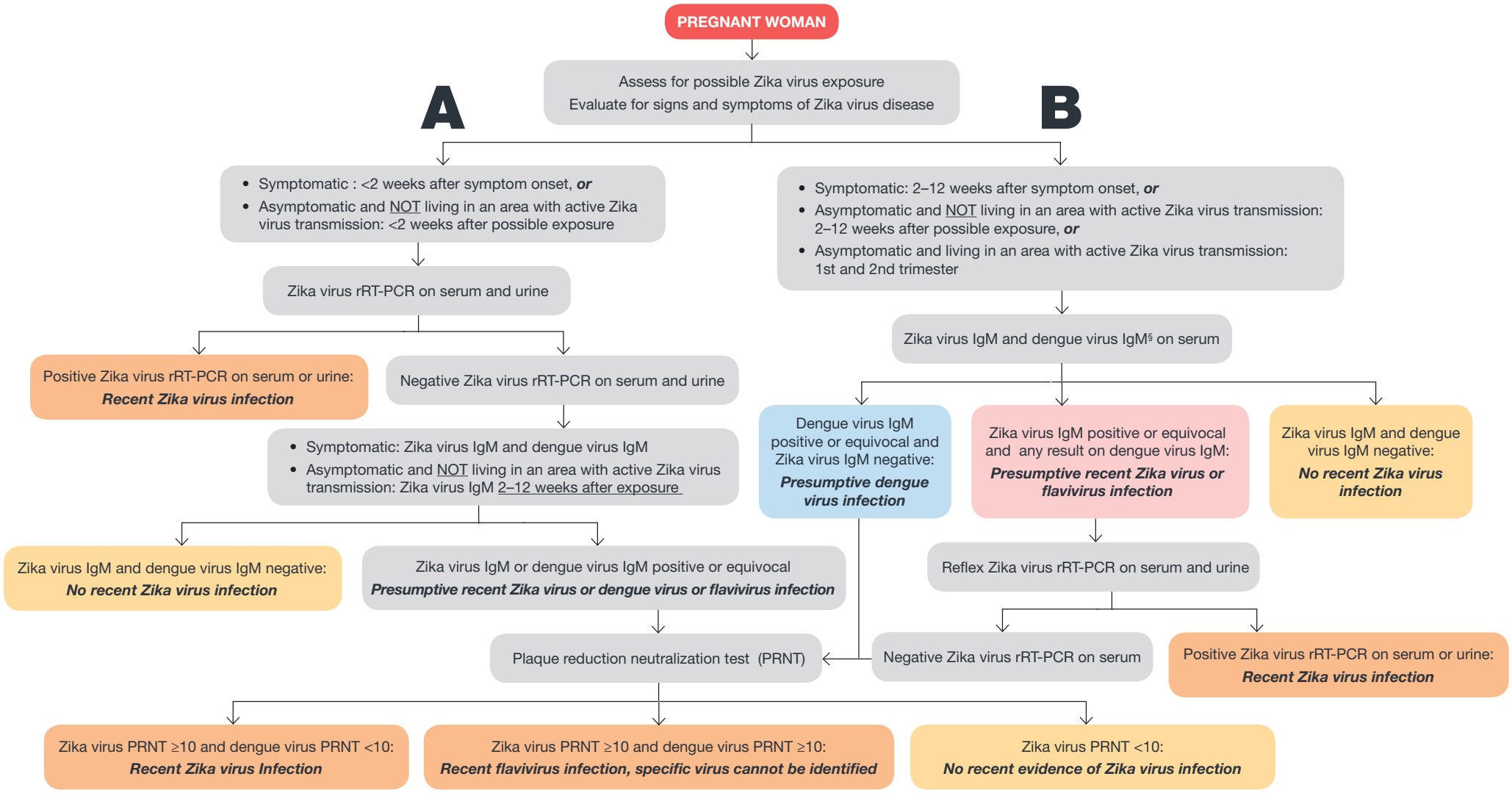
Notifiable Condition *(includes confirmed and probable cases)*	Cases				
	Jan – Nov	Jan – Nov	Jan – Nov	Total Cases by Year	Total Cases by Year
	2016	2015	2014	2015	2014
Campylobacteriosis	137	150	87	153	97
Chlamydia	1444	1452	1375	1597	1507
Cryptosporidiosis	2	7	7	7	7
Genital Herpes - Initial	65	106	56	111	60
Giardiasis	27	21	15	25	16
Gonorrhea	416	341	367	376	406
Hepatitis A acute	0	0	0	0	0
Hepatitis B acute	2	0	0	0	0
Hepatitis B chronic	8	17	10	18	11
Hepatitis C acute	4	1	2	1	2
Hepatitis C chronic	241	201	272	223	300
HIV/AIDS Cumulative Living	203	197	196	196	195
HIV/AIDS Deaths	1	3	2	3	2
HIV/AIDS New	10	5	8	5	8
Meningococcal Disease	0	0	1	0	1
Pertussis	4	11	18	11	18
Salmonellosis	25	47	51	49	53
Shigellosis	15	2	14	2	14
STEC (enterohemorrhagic E. coli)	18	18	14	20	15
Syphilis - Primary and Secondary	9	6	14	7	15
Tuberculosis	8	12	4	12	4

Notifiable Conditions Summary Jan - Nov 2016

CDC's Response to **Zika**

UPDATED INTERIM PREGNANCY GUIDANCE:

Testing and interpretation recommendations*,†,§,¶ for a pregnant woman with possible exposure to Zika virus** — United States (including U.S. territories)



Abbreviations: IgM = immunoglobulin M; PRNT = plaque reduction neutralization test; rRT-PCR = real-time reverse transcription–polymerase chain reaction.

* A pregnant woman is considered symptomatic if one or more signs or symptoms (fever, rash, arthralgia, or conjunctivitis) consistent with Zika virus disease is reported whereas a pregnant woman is considered asymptomatic if symptoms are NOT reported.

† Testing includes Zika virus rRT-PCR on serum and urine samples, Zika virus and dengue virus Immunoglobulin M (IgM), and plaque reduction neutralization test (PRNT) on serum samples. PRNT results that indicate recent flavivirus infection should be interpreted in the context of the currently circulating flaviviruses. Refer to the laboratory guidance for updated testing recommendations (http://www.cdc.gov/zika/laboratories/lab-guidance.html). Because of the overlap of symptoms in areas where other viral illness are endemic, evaluate for possible dengue or chikungunya virus infection.

§ Dengue IgM antibody testing is recommended only for symptomatic pregnant women.

¶ If Zika virus rRT-PCR testing is requested from laboratories without IgM antibody testing capacity or a process to forward specimens to another testing laboratory, storing of additional serum samples is recommended for IgM antibody testing in the event of a rRT-PCR negative result.

** Possible exposure to Zika virus includes travel to or residence in an area with active Zika virus transmission (http://wwwnc.cdc.gov/travel/notices/), or sex (vaginal sex (penis-to-vagina sex), anal sex (penis-to-anus sex), oral sex (mouth-to-penis sex or mouth-to-vagina sex), and the sharing of sex toys) without a barrier method to prevent infection (male or female condoms for vaginal or anal sex, male condoms for oral sex (mouth-to-penis), and male condoms cut to create a flat barrier or dental dams for oral sex (mouth-to-vagina) with a partner who traveled to, or lives in an area with active Zika virus transmission.

Clinical management of a pregnant woman with suspected Zika virus infection

Interpretation of Laboratory Results*	Prenatal Management	Postnatal Management
Recent Zika virus infection	• Consider serial ultrasounds every 3–4 weeks to assess fetal anatomy and growth† • Decisions regarding amniocentesis should be individualized for each clinical circumstance§	**LIVE BIRTHS:** • Cord blood and infant serum should be tested for Zika virus rRT-PCR, Zika IgM, and dengue virus IgM antibodies. If CSF is obtained for other reasons, it can also be tested. • Zika virus rRT-PCR and IHC staining of umbilical cord and placenta is recommended.¶ **FETAL LOSSES:** • Zika virus rRT-PCR and IHC staining of fetal tissues is recommended.¶
Recent flavivirus infection; specific virus cannot be identified		
Presumptive recent Zika virus infection**	• Consider serial ultrasounds every 3–4 weeks to assess fetal anatomy and growth† • Amniocentesis might be considered; decision should be individualized for each clinical circumstance§	**LIVE BIRTHS:** • Cord blood and infant serum should be tested for Zika virus rRT-PCR, Zika IgM, and dengue virus IgM antibodies. If CSF is obtained for other reasons, it can also be tested. • Zika virus rRT-PCR and IHC staining of umbilical cord and placenta should be considered.¶ **FETAL LOSSES:** • Zika virus rRT-PCR and IHC staining of fetal tissues should be considered.¶
Presumptive recent flavivirus infection**		
Recent dengue virus infection	• Clinical management in accordance with existing guidelines (http://apps.who.int/iris/bitstream/10665/44188/1/9789241547871_eng.pdf).	
No evidence of Zika virus or dengue virus infection	• Prenatal ultrasound to evaluate for fetal abnormalities consistent with congenital Zika virus syndrome.† ◆ Fetal abnormalities present: repeat Zika virus rRT-PCR and IgM test; base clinical management on corresponding laboratory results. ◆ Fetal abnormalities absent: base obstetric care on the ongoing risk of Zika virus exposure to the pregnant woman.	

Abbreviations: CSF = cerebrospinal fluid; IgM = immunoglobulin M; IHC = immunohistochemical; PRNT = plaque reduction neutralization test; rRT-PCR = real-time reverse transcription–polymerase chain reaction.

* Refer to the previously published guidance for testing interpretation (http://www.cdc.gov/mmwr/volumes/65/wr/mm6521e1.htm).

† Fetal abnormalities consistent with congenital Zika virus syndrome include microcephaly, intracranial calcifications, ventriculomegaly, arthrogryposis, and abnormalities of the corpus callosum, cerebrum, cerebellum, and eyes.

§ Health care providers should discuss risks and benefits of amniocentesis with their patients. It is not known how sensitive or specific rRT-PCR testing of amniotic fluid is for congenital Zika virus infection, whether a positive result is predictive of a subsequent fetal abnormality, and if it is predictive, what proportion of infants born after infection will have abnormalities.

¶ Refer to pathology guidance for collection and submission of fetal tissues for Zika virus testing for detailed information on recommended specimen types (http://www.cdc.gov/zika/laboratories/test-specimens-tissues.html).

** rRT-PCR or PRNT should be performed for positive or equivocal IgM results as indicated. PRNT results that indicate recent flavivirus infection should be interpreted in the context of the currently circulating flaviviruses. Refer to the laboratory guidance for updated testing recommendations (http://www.cdc.gov/zika/laboratories/lab-guidance.html). Because of the overlap of symptoms and areas where other viral illnesses are endemic, evaluate for possible dengue or chikungunya virus infection.

CS267383A July 28, 2016

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

Questions about PrEP & PrEP DAP?

If you have questions about **PrEP**, your prescribing medical provider is the best person to answer your questions about PrEP treatment. If you need a provider, you can go to our website at www.doh.wa.gov/prepdap under "Find a Medical Provider" for the most up to date list of PrEP Providers in WA State.

If you have questions about **PrEP DAP** and how to apply, please contact PrEP DAP directly.

Contact Information

PrEP DAP

WA State Department of Health

PO Box 47841

Olympia, WA 98504-7841

Phone: 360.236.3412

Toll Free: 877-376-9316

Fax: 360.664.2216

Email: PrEPDAP@doh.wa.gov

Website: www.doh.wa.gov/prepdap

For people with disabilities, this document is available on request in other formats. To submit a request, please call1-800-525-0127 (TDD/TTY call 711).

Washington State Department of Health

DOH 150-055 September 2016

PrEP DAP

Pre-Exposure Prophylaxis Drug Assistance Program

An HIV prevention program for people that are at high risk of HIV infection.

Washington State Department of Health

What is PrEP?

Pre-Exposure Prophylaxis (PrEP) is a HIV prevention method in which a HIV-negative person who is at high risk of becoming infected with HIV takes a pill daily to reduce their risk. When used as prescribed, PrEP has been shown to reduce the risk of HIV-1 infection among adult men and women. TRUVADA® as PrEP was approved in 2012 by the Federal Drug Administration.

What is PrEP DAP?

PrEP DAP is a drug assistance program created for **INSURED** HIV-negative Washingtonians who are at high risk of becoming HIV infected and are prescribed Truvada® as PrEP. PrEP DAP pays the monthly co-pay and deductible (if needed) cost for an eligible participant.

UNINSURED HIV-negative Washingtonians should contact Gilead Advancing Access Patient Assistance Program. Their number is: 1-800-226-2056.

What makes a person "High Risk"?

A person is considered high risk if:

MSM or transgender and has sex with men and has one or more of the following risks:

- Diagnosis of rectal or urethral gonorrhea, rectal chlamydia or early syphilis in the last 12/mo
- Methamphetamine or popper use in the last12/mo
- History of providing sex for money, drugs, food, shelter or transportation in the last 12/mo
- Unprotected anal sex outside of a long-term, mutually monogamous relationship

In an ongoing sexual relationship with an HIV-infected person who:

- Is not on antiretroviral therapy (ART)
- Is on ART but is not virologically suppressed
- Is within 6 months of initiating ART
- Is on ART and is virologically suppressed

In an ongoing sexual relationship in which the female partner is trying to get pregnant

A woman who provides sex for money, drugs, food, shelter or transportation

Injects drugs that are not prescribed by a medical provider

Eligibility for PrEP DAP

To be eligible for PrEP DAP, you must:

- Submit a complete application
- Be HIV-negative
- Live in Washington State
- Have Insurance*
- Declare your Risk Factor(s)

How do I apply?

It's Easy! Go to our website and print the application.

www.doh.wa.gov/prepdap

- Complete the application in pen
- Attach all required documents
- Fax or Mail it to us at the address/fax # on the application

You may call or email us to request an application be sent to you. Our contact information is on the back!

Will I have to pay anything?

Not at this time. This is subject to change depending on program funding.

*** Your Insurance must have prescription benefits that cover the initial costs of Truvada® . PrEP DAP pays the co-pay.**

Pre-exposure Prophylaxis (PrEP) Clinical Reference Sheet

General

- Pre-exposure prophylaxis (PrEP) is a medication taken daily which prevents HIV infection.
- PrEP is taken before (pre-) an exposure which is different than post-exposure prophylaxis (PEP), which is a medication regimen taken after exposure (e.g., after a needle stick).
- The medication used for PrEP for ≥18 years of age is a single pill comprised of 150 mg of tenofovir disoproxil fumarate (TDF) and 100 mg of emtricitabine (FTC).
- The medication was approved for ≥18 years of age by the United States Food and Drug Administration (FDA) in 2012 for PrEP.
- The brand name is Truvada (TDF-FTC).
- The medication has been approved for the treatment of HIV in adults since 2004. Low strength TDF-FTC for pediatric use was approved by the FDA in 2016 for HIV treatment only for patients weighing 17 kg to less than 35 kg who can swallow a pill. Please see full prescribing information below for pediatric dosing.

Indications for PrEP

Gay, Bisexual, and other Men Who Have Sex with Men (MSM), and Transgender Women: Any anal sex without condoms or sexually transmitted diseases (STDs) in the last six months, or in an ongoing relationship with an HIV+ partner, multiple sex partners.

Heterosexuals: Bisexual men, ongoing HIV+ partner, or condomless sex with 1+ partner(s) of unknown HIV status who are at increased risk of HIV such as an injection drug user or bisexual male partner, recent bacterial STD.

Injection Drug Users (IDU): HIV+ injection partner, sharing needles or risk of sexual acquisition as above.

Initial Efficacy Studies

iPrEx: In patients that had high levels of adherence, TDF-FTC reduced the risk of HIV in gay, bisexual, and other MSM by 92%.[1] *Brazil, Ecuador, Peru, S. Africa, Thailand, USA*

Partners PrEP Trial: In patients that had high levels of adherence, TDF-FTC reduced the risk of HIV in heterosexual patients by 90%, with efficacy being lower in women than men.[2] *Kenya, Uganda*

TDF2 Trial: TDF-FTC reduced the risk of HIV in heterosexual patients by 62%, but this may have included people who didn't always take the medication. Efficacy was lower in women.[3] *Botswana*

Bangkok Tenofovir Study: In patients that had high levels of adherence, TDF-FTC reduced the risk of HIV in IDUs by 49%.[4] *Thailand*

1 Robert M. Grant, et al., "Preexposure Chemoprophylaxis for HIV Prevention in Men who Have Sex with Men," *New England Journal of Medicine* 363, no. 27 (2010): 2587-99. DOI: 10.1056/NEJMoa1011205.

2 Jared M. Baeten, et al., "Antiretroviral Prophylaxis for HIV Prevention in Heterosexual Men and Women," *New England Journal of Medicine* 367, (2012): 399-410, DOI: 10.1056/NEJMoa108524.

3 Michael C. Thigpen, et al., "Antiretroviral Preexposure Prophylaxis for Heterosexual HIV Transmission in Botswana," *New England Journal of Medicine* 367, no. 5 (2012): 423-34, DOI: 10.1056/NEJMoa1110711.

4 Kachit Choopanya, et al., "Antiretroviral Prophylaxis for HIV Infection in Injecting Drug Users in Bangkok, Thailand (the Bangkok Tenofovir Study): A Randomized, Double-blind, Placebo-controlled Phase 3 Trial," *Lancet* 381, no. 9883 (2013): 2083-90, DOI: 10.1016/S0140-6736(13)61127-7.

Initiation of PrEP

- Negative HIV antibody test (within the last week; no oral rapid testing)
- Screen for acute HIV infection (recent "flu-like" symptoms. If concern, check an HIV viral load)
- Normal renal function, CrCl ≥60 ml/min (check creatinine)
- Negative for chronic hepatitis B infection (hepatitis B surface antigen negative)
- Screen for other STDs as needed (syphilis, gonorrhea, chlamydia)
- Negative pregnancy test (for women)
- Prescription for a three (3) month supply

Time to Achieving Protection

For MSM: Maximum concentration in rectal tissue at seven days

For Women: Maximum concentration in cervicovaginal tissue at 20 days

For Transgender Women: Maximum concentration in rectal tissue at seven days

For IDUs: Maximum concentration in the blood at 20 days

Potential Side-Effects

- No severe or life-threatening side-effects in the major trials [iPrEx].
- Mild gastrointestinal upset (e.g., nausea, flatulence) in 9% of individuals [iPrEx] which generally resolve in the first month.
- Other potential side-effects include fatigue, headache, and dizziness.
- TDF-FTC may cause a small decrease in bone mineral density (1%) but the clinical significance of this is unknown (i.e., does not appear to lead to fractures). In general, DEXA scans are not recommended.
- TDF-FTC is associated with renal dysfunction in <1 to 4.3% of individuals in North America.[1] Creatinine should be monitored periodically. Stopping TDF-FTC in these individuals generally leads to normalization of renal function.

1 Nishijima Takeshi et. al., "Impact of Small Body Weight on Tenofovir-Associated Renal Dysfunction in HIV-Infected Patients: A Retrospective Cohort Study of Japanese Patients," *PLoS ONE* 6, no. 7: e22661, DOI: 10.1371/journal.pone.0022661

Potential Drug Interactions

Caution should be taken when using other drugs that may reduce renal function (e.g., acyclovir, adefovir dipivoxil, cidofovir, ganciclovir, valganciclovir, aminoglycosides and high doses of multiple NSAIDs) since TDF-FTC is actively eliminated by the kidney. Drugs that decrease renal function may also increase concentrations of TDF-FTC.

Drug Resistance

- No drug resistance generally found in patients who acquire HIV while on PrEP [iPrEx].
- Resistance identified in some patients who have HIV at baseline before PrEP is started [iPrEx].

Persons With a New HIV Diagnosis

- Confirm the diagnosis with subsequent testing (may be performed through local health department).
- Check CD4 lymphocyte count.
- Check HIV viral load.
- Check HIV genotype (for drug resistance).
- Linkage to care with an HIV provider.
- If the patient is on PrEP and diagnosed with HIV, urgent consultation with an infectious disease specialist is suggested. TDF-FTC may be continued, but a third drug should be added. A three-drug regimen is the standard treatment regimen for people living with HIV.

Treating Special Populations

PrEP During Conception, Pregnancy and Breast-feeding

See **PrEP Information Sheet: PrEP During Conception, Pregnancy, and Breastfeeding** (Centers for Disease Control and Prevention)

Adolescent Minors

- The CDC recommends routine HIV testing for those 13-65 years old. HIV screening is part of primary care and should be offered to all sexually active minors; those who are MSM or have a history of IDU should be screened more frequently as indicated.
- Discuss parent/guardian involvement in adolescent health care. Unless contraindicated for an adolescent's safety, parental/guardian involvement is advised.
- Be aware of consent, confidentiality, reporting, and parental disclosure laws and that these laws may also vary by local jurisdiction.
- None of the completed PrEP trials have included individuals below age 18. Consider:
  - the lack of data on safety and effectiveness of TDF-FTC taken by persons under 18 years of age, possibility of bone or other toxicities among youth who are still growing, safety data available when TDF-FTC is used in treatment regiments for youth living with HIV.
  - Weigh these factors against the potential benefit of providing TDF-FTC for an individual adolescent at substantial risk of HIV acquisition.

Transgender Women[1]

- Transgender women are at increased risk of HIV infection due to multiple factors dominated by stigma and discrimination, including sex practices (vaginal sex and/or receptive anal sex), and substance use.
- Some limited studies demonstrated efficacy of TDF-FTC in trans women who were adherent to TDF-FTC.
- More research is needed to understand the interaction between feminizing hormones and TDF-FTC and impact on the buildup of TDF-FTC to protective levels in rectal tissue.
- Counsel clients on balancing possible TDF-FTC efficacy with risk of HIV acquisition.

Patients with Chronic Active Hepatitis B Infection

- Refer to a clinician experienced in managing TDF-FTC.

Patients with Chronic Renal Failure

- Refer to a clinician experienced in managing TDF-FTC.

1 Samantha Marquez, Sean Cahill, "Transgender Women and Pre-exposure Prophylaxis: What We Know and What We Still Need to Know," *National Center for Innovation in HIV Care,* November 2015.

Medication Adherence Counseling

Establish trust and bidirectional communication

Provide simple explanations and education

- Medication dosage and schedule
- Management of common side-effects
- Relationship of adherence to the efficacy of TDF-FTC
- Signs and symptoms of acute HIV infection and recommended actions

Support adherence

- Tailor taking the medication to the patient's daily routine.
- Identify reminders and devices to minimize forgetting doses
- Identify and address barriers to adherence

Monitor medication adherence in a non-judgmental manner

- Normalize occasional missed doses, while ensuring patient understands importance of daily dosing for optimal protection
- Reinforce success
- Identify factors interfering with adherence and plan with patient to address them
- Assess side-effects and plan how to manage them

Behavioral Risk-Reduction Counseling

Establish trust and two-way communication

Provide feedback on HIV risk factors identified during sexual and substance use history taking

- Elicit barriers to, and facilitators of, consistent condom use
- Elicit barriers to, and facilitators of, reducing substance abuse

Support risk-reduction efforts

- Assist patient to identify one or two feasible, acceptable, incremental steps towards risk reduction
- Identify and address anticipated barrier to accomplishing planned actions to reduce risk

Monitor behavioral adherence in a non-judgmental manner

- Acknowledge the effort required for behavior change
- Reinforce success
- If not fully successful, assess factors interfering with completion of planned actions and assist patient to identify next steps

Adapted from **Pre-exposure Prophylaxis for the Prevention of HIV Infection in the United States—2014 Clinical Practice Guideline** *(Centers for Disease Control and Prevention)*

More information

- **Full prescribing information**
- **United States Public Health Service Pre-exposure Prophylaxis for the Prevention of HIV Infection in the United States 2014: A Clinical Practice Guideline**
- **United States Public Health Service, Pre-exposure Prophylaxis for the Prevention of HIV Infection in the United States 2014: Clinical Providers' Supplement**
- Taking a Sexual History
- To speak with a clinician experienced in managing PrEP, contact the University of California San Francisco **Clinician Consultation Center**, **(855) 448-7737** or **(855) HIV-PrEP**