



# Pre-Exposure Prophylaxis for HIV Prevention in Racial/Ethnic Minority Women

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# Disclosure

- No disclosures or conflicts of interest



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# Learning Objectives

- Review the epidemiology of HIV infection in racial/ethnic minority women
- Describe the barriers for HIV pre-exposure prophylaxis (PrEP) uptake in minority women
- Discuss strategies to increase awareness and uptake of PrEP in minority women



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# Global HIV Statistics (2017)

➤ 36.9 million people living with HIV



➤ 1.8 million people became newly infected with HIV

- Decline in annual new infections of 16% since 2010

➤ ~900,000 new HIV infections among women annually



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UNAIDS. 2017 Global HIV Statistics Fact Sheet. 2018. [cited 28 October 2018]. Available from: [http://www.unaids.org/sites/default/files/media\\_asset/UNAIDS\\_FactSheet\\_en.pdf](http://www.unaids.org/sites/default/files/media_asset/UNAIDS_FactSheet_en.pdf)

# Epidemiology of HIV Infection in US Women (2015-2016)

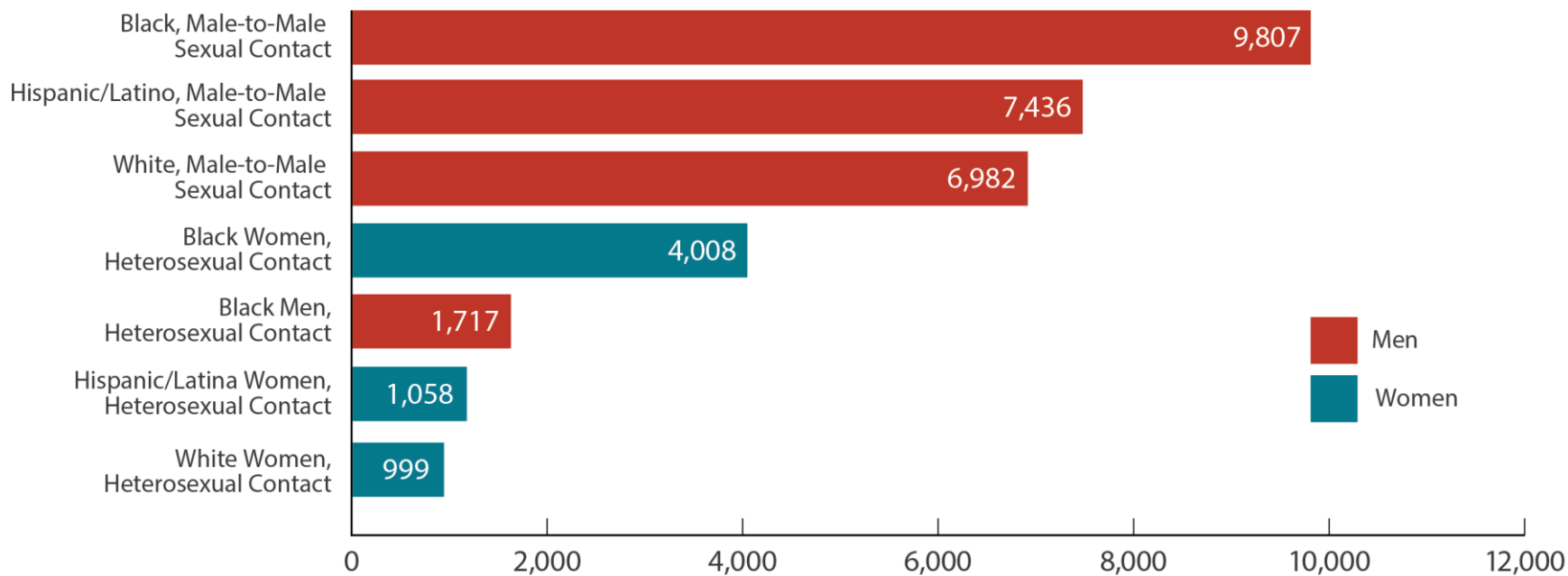
- Around 1.1 million people are living with HIV in the US
- Total number of women living with HIV (2016)
  - 58% (139,971) African American
  - 20% (47,115) Hispanic/Latina
  - 16% (39,562) White
- Women represent 19% (7,312) of the 38,281 new HIV diagnoses
  - Heterosexual contact = 86% (6,259)
  - Injection drug use = 14% (1,009)



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Centers for Disease Control and Prevention. HIV Surveillance Report, 2017; vol. 29.  
<http://www.cdc.gov/hiv/library/reports/hiv-surveillance.html>. Published November 2018. Accessed [1.14.2019].

# New HIV Diagnoses in the US for the Most-Affected Subpopulations, 2017



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Source: CDC. [Diagnoses of HIV infection in the United States and dependent areas, 2017. HIV Surveillance Report 2018;29](https://www.cdc.gov/hiv/statistics/overview/ataglance.html) <https://www.cdc.gov/hiv/statistics/overview/ataglance.html>

# Epidemiology of HIV Infection in Minority Women

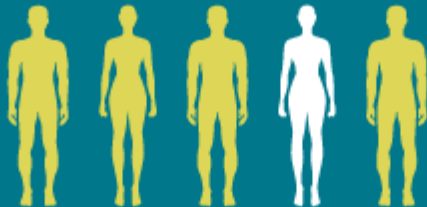
## HIV DIAGNOSES IN 2016:

7,529 WOMEN

4,560 AFRICAN AMERICAN WOMEN

1,450 WHITE WOMEN

1,168 HISPANIC/LATINA\* WOMEN



1 in 5 new HIV diagnoses in 2016 were among women.



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Centers for Disease Control and Prevention. HIV and Women Fact Sheet. 2018. [cited 28 October 2018]. Available from: <https://www.cdc.gov/hiv/pdf/group/gender/women/cdc-hiv-women.pdf>

# Racial Disparities Exist

- Disproportionately high rates of new HIV infections in women from racial and ethnic minority communities
- Black women are at the highest risk for contracting HIV as compared to women of other racial/ethnic groups
- Black women have one of the highest incidence of HIV among all sub-populations in the US
  - 2<sup>nd</sup> only to men who have sex with men (MSM)



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Centers for Disease Control and Prevention. HIV and Women Fact Sheet. 2018. [cited 28 October 2018]. Available from: <https://www.cdc.gov/hiv/pdf/group/gender/women/cdc-hiv-women.pdf>



# Racial/Ethnic Disparities in Risk of HIV Diagnosis

- Women from minority groups in the US have a disproportionately higher lifetime risk of **diagnosed** HIV infection <sup>(1)</sup>
  - 1 in 54 African American/black women
  - 1 in 256 Hispanic/Latina women
  - 1 in 941 white women



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Hess KL, Hu X, Lansky A, Mermin J, Hall HI. Lifetime risk of a diagnosis of HIV infection in the United States. *Annals of epidemiology*. 2017 Apr 1;27(4):238-43.<sup>1</sup>

# HIV PrEP Overview

- Pre-exposure prophylaxis (PrEP) for people who are HIV negative with substantial risk of recurring HIV exposure
  - Sexual risk
  - Injection drug use behaviors
- Powerful HIV prevention tool
- Can be combined with condoms and other prevention methods
- One once-daily pill, fixed-dose combination
  - Tenofovir disoproxil fumarate (TDF) 300mg + Emtricitabine (FTC) 200mg
  - Nucleoside analog reverse transcriptase inhibitors



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# PrEP vs. PEP for HIV Prevention

<p><b>PrEP</b> stands for pre-exposure prophylaxis.</p>	<b>What's it called?</b>	<p><b>PEP</b> stands for post-exposure prophylaxis.</p>
<p><b>Before HIV exposure.</b> PrEP is taken every day, before possible exposure.</p>	<b>When is it taken?</b>	<p><b>After HIV exposure.</b> In emergency situations, PEP is taken within 72 hours (3 days) after possible exposure.</p>
<p><b>PrEP</b> is for people who don't have HIV and:</p> <ul style="list-style-type: none"><li>• have a sex partner with HIV</li><li>• have sex with people whose HIV status is unknown</li><li>• share injection drug equipment</li></ul>	<b>Who's it for?</b>	<p><b>PEP</b> is for people who don't have HIV but may have been exposed:</p> <ul style="list-style-type: none"><li>• during sex</li><li>• at work through a needlestick or other injury</li><li>• by sharing injection drug equipment</li><li>• during a sexual assault</li></ul>
<p><b>PrEP</b> can reduce the risk of getting HIV from sex by more than 90% and from injection drug use by more than 70%.</p>	<b>How effective is it?</b>	<p><b>PEP</b> can prevent HIV infection when taken correctly, but it is not always effective. Start PEP as soon as possible to give it the best chance of working.</p>



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AIDSinfo. PrEP vs. PEP. 2017. [cited 28 October 2018]. Available from:  
<https://aidsinfo.nih.gov/understanding-hiv-aids/infographics/46/prep-vs-pep>.

# Factors That May Increase Risk of HIV Acquisition in Women

## *Biology of HIV Transmission*

- Riskiest behavior for HIV acquisition is receptive anal sex
- Receptive sex generally riskier than insertive sex
  - Women have a higher risk for getting HIV during vaginal or anal sex than their sex partners

## *Improper perception of Risk of Acquiring HIV*

- Behavioral survey of heterosexual women at increased risk of HIV
  - 92% of HIV-negative women reported having vaginal sex without a condom in the previous year
  - 25% reported having anal sex without a condom



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Centers for Disease Control and Prevention: US Public Health Service: Pre-exposure prophylaxis for the prevention of HIV infection in the United States—2017 Update: a clinical practice guideline. <https://www.cdc.gov/hiv/pdf/risk/prep/cdc-hiv-prep-guidelines-2017.pdf>. March 2018

# Factors That May Increase Risk of HIV Acquisition in Women

## *Lack of Knowledge around partner's risk factors*

- Injection drug use
- Unprotected sex with men

## *Sexually transmitted diseases*

- Gonorrhea
- Syphilis

## *Risky sex behaviors*

- Exchanging sex for drugs
- Multiple sex partners
- Condomless sex

## *More African Americans and Hispanics/Latinos living with HIV compared to other races/ethnicities*

- Greater risk of HIV infection with each new sexual encounter



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# Women at Risk for Acquiring HIV

- HIV-negative cisgender and transgender women who:
  - Are unsure of the HIV status of their sexual partners
  - Are in a sexual relationship with an HIV-positive partner
  - Have been recently diagnosed with a sexually transmitted infection (STI)
  - Have a high number of sex partners
  - Don't always use condoms during anal or vaginal intercourse
  - Engaged in commercial sex work
  - Are sexually active in an area with high HIV prevalence
  - Who inject drugs, or who are in a sexual relationship with an injection drug user



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Centers for Disease Control and Prevention: US Public Health Service: Preexposure prophylaxis for the prevention of HIV infection in the United States—2017 Update: a clinical practice guideline. <https://www.cdc.gov/hiv/pdf/risk/prep/cdc-hiv-prep-guidelines-2017.pdf>. March 2018

# CDC Guidance for PrEP Use

	Men Who Have Sex With Men	Heterosexual Women and Men	Injection Drug Users
<b>Detecting substantial risk of acquiring HIV infection:</b>	<ul style="list-style-type: none"> <li>Sexual partner with HIV</li> <li>Recent bacterial STD</li> <li>High number of sex partners</li> <li>History of inconsistent or no condom use</li> <li>Commercial sex work</li> </ul>	<ul style="list-style-type: none"> <li>Sexual partner with HIV</li> <li>Recent bacterial STD</li> <li>High number of sex partners</li> <li>History of inconsistent or no condom use</li> <li>Commercial sex work</li> <li>Lives in high-prevalence area or network</li> </ul>	<ul style="list-style-type: none"> <li>HIV-positive injecting partner</li> <li>Sharing injection equipment</li> <li>Recent drug treatment (but currently injecting)</li> </ul>
<b>Clinically eligible:</b>	<ul style="list-style-type: none"> <li>Documented negative HIV test before prescribing PrEP</li> <li>No signs/symptoms of acute HIV infection</li> <li>Normal renal function, no contraindicated medications</li> <li>Documented hepatitis B virus infection and vaccination status</li> </ul>		
<b>Prescription</b>	Daily, continuing, oral doses of TDF/FTC (Truvada), ≤90 day supply		
<b>Other services:</b>	<ul style="list-style-type: none"> <li>Follow-up visits at least every 3 months to provide:</li> <li>HIV test, medication adherence counseling, behavioral risk reduction support, side effect assessment, STD symptom assessment</li> <li>At 3 months and every 6 months after, assess renal function</li> <li>Every 6 months test for bacterial STDs</li> </ul>		
	<ul style="list-style-type: none"> <li>Do oral/rectal STD testing</li> </ul>	<ul style="list-style-type: none"> <li>Assess pregnancy intent</li> <li>Pregnancy test every 3 months</li> </ul>	<ul style="list-style-type: none"> <li>Access to clean needles/syringes and drug treatment services</li> </ul>



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# Evidence for PrEP Usage in Minority Women



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# Adherence Issues Specific to Women

## ➤ Achieving Protection

- [Tenofovir] 100-fold greater in the rectal tissue compared to the cervicovaginal tissues after a single oral dose of TDF/FTC <sup>(1)</sup>
- Maximum intracellular concentrations of TFV-DP reached <sup>(2)</sup>
  - In blood after ~20 days of daily oral dosing
  - In rectal tissue at ~7 days
  - In cervicovaginal tissues at ~20 days

## ➤ Maintaining protection

- Women may need minimum adherence of ~6-7 doses of oral TDF/FTC per week to maintain drug levels of tenofovir in the female genital tissue that can effectively block HIV transmission <sup>(3)</sup>
- Need for consistently high adherence to PrEP to maintain protection
  - >> cisgender women engaging in vaginal sex vs. MSM engaging in anal sex



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Patterson KB et al. Penetration of tenofovir and emtricitabine in mucosal tissues: implications for prevention of HIV-1 transmission. *Sci Transl Med.* 2011 Dec 7;3(112):112re4.<sup>1</sup>; US Public Health Service. Pre-exposure Prophylaxis for the Prevention of HIV Infection in the United State – 2017 Update Clinical Practice Guideline. <https://www.cdc.gov/hiv/pdf/risk/prep/cdc-hiv-prep-guidelines-2017.pdf><sup>2</sup>; Cottrell ML et al. A Translational Pharmacology Approach to Predicting Outcomes of Preexposure Prophylaxis Against HIV in Men and Women Using Tenofovir Disoproxil Fumarate With or Without Emtricitabine. *J Infect Dis.* 2016 Jul 1;214(1):55-64.<sup>3</sup>

# Special Considerations for PrEP Use in Women

- PrEP during conception & pregnancy
  - Risk of HIV acquisition increased during pregnancy<sup>(1, 2)</sup>
  - Risk of perinatal transmission increased among women who acquire HIV during pregnancy
  - Discuss risks and benefits
  - HIV-infected male partner of a woman seeking conception can greatly reduce his infectiousness by achieving virologic suppression on HAART<sup>(3)</sup>
    - PrEP provides limited additional protective benefit for the woman<sup>(4)</sup>
    - May be most feasible option to protect HIV-uninfected partner during conception attempts with HIV-positive partner



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Mugo NR et al. Increased risk of HIV-1 transmission in pregnancy: a prospective study among African HIV-1-serodiscordant couples. *AIDS*. 2011 Sep 24;25(15):1887-95.<sup>1</sup>; Thomson KA et al. Increased Risk of HIV Acquisition Among Women Throughout Pregnancy and During the Postpartum Period: A Prospective Per-Coital-Act Analysis Among Women With HIV-Infected Partners. *J Infect Dis*. 2018 Jun 5;218(1):16-25.<sup>2</sup>; Cohen MS et al. Prevention of HIV-1 infection with early antiretroviral therapy. *N Engl J Med*. 2011 Aug 11;365(6):493-505.<sup>3</sup>; Hoffman RM et al. Benefits of PrEP as an Adjunctive Method of HIV Prevention During Attempted Conception Between HIV-uninfected Women and HIV-infected Male Partners. *J Infect Dis*. 2015 Nov 15;212(10):1534-43.<sup>4</sup>

# Special Considerations for PrEP Use in Women

## ➤ PrEP during conception & pregnancy

- No evidence of significant adverse pregnancy outcomes (1-2)
  - Limited safety data during conception and pregnancy
  - Women in PrEP efficacy studies encouraged to use contraception
  - Advised to discontinue PrEP if they became pregnant during the study
- Need for additional data on PrEP safety
  - Clinicians advised to report PrEP use to the Antiretroviral Pregnancy Registry ([www.apregistry.com](http://www.apregistry.com))
    - Repository for clinical safety data relating to the use of HIV medications
    - Facilitates accrual of post-marketing safety data



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Mugo NR et al. Pregnancy incidence and outcomes among women receiving preexposure prophylaxis for HIV prevention: a randomized clinical trial. JAMA. 2014 Jul 23-30;312(4):362-71.<sup>1</sup>; Thigpen MC et al. Antiretroviral preexposure prophylaxis for heterosexual HIV transmission in Botswana. N Engl J Med. 2012 Aug 2;367(5):423-34.<sup>2</sup>

# Special Considerations for PrEP Use in Women

## ➤ PrEP during breastfeeding

- Data suggest women can safely breastfeed while using PrEP<sup>(1)</sup>
- Measured infant exposure to tenofovir or FTC during breast feeding
  - High maternal plasma levels of drugs associated with nominal amounts of tenofovir in breast milk
  - FTC detected in plasma of breastfeeding infants
  - < 1% of considered safe and therapeutic pediatric dose



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Mugwanya KK et al. Pre-exposure Prophylaxis Use by Breastfeeding HIV-Uninfected Women: A Prospective Short-Term Study of Antiretroviral Excretion in Breast Milk and Infant Absorption. PLoS Med. 2016 Sep 27;13(9) <sup>1</sup>

# PrEP Use in Transgender Women

- Inclusion of Transgender Women (TGW) in PrEP trials has been limited <sup>(1)</sup>
  - Too few TGW for valid estimate
  - Poor adherence amongst many of the TGW
  - *Post hoc* analysis of IPrEx data show that no infections occurred among those TGW who took 4 pills or more each week.
- PrEP provides high levels of protection to MSM during anal sex and heterosexual men during penile-vaginal sex when taken consistently
- TGW should be offered PrEP if indicated to prevent HIV infection <sup>(1)</sup>
- PrEP efficacy not affected by use of hormonal contraceptives <sup>(3)</sup>
  - Open label studies with TGW are ongoing
  - **Need for additional information** on PrEP effectiveness in context of hormone therapy for feminization <sup>(2)</sup>
  - PrEP efficacy not demonstrated in post-hoc analysis of TGW <sup>(2)</sup>



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Marshall BD, Mimiaga MJ. Uptake and effectiveness of PrEP for transgender women. *Lancet HIV*. 2015 Dec;2(12):e502-3. <sup>1</sup>;  
Deutsch MB et al. HIV pre-exposure prophylaxis in transgender women: a subgroup analysis of the iPrEx trial. *Lancet HIV*. 2015  
Dec;2(12):e512-9. <sup>2</sup>; Heffron R et al. Preexposure prophylaxis is efficacious for HIV-1 prevention among women using depot  
medroxyprogesterone acetate for contraception. *AIDS*. 2014 Nov 28;28(18):2771-6. <sup>3</sup>

# Potential for PrEP Uptake

- TDF-based PrEP is generally well-tolerated
- Oral PrEP can reduce HIV incidence among women and other priority populations when taken with high adherence <sup>(1-6)</sup>
- Demonstrated potential for PrEP use in minority women in national US telephone survey <sup>(7)</sup>
  - African-American women significantly more likely than white women
    - To report potential use of PrEP
    - To report use of PrEP if recommended by a healthcare provider



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Baeten JM et al. Antiretroviral prophylaxis for HIV prevention in heterosexual men and women. *N Engl J Med.* 2012 Aug 2;367(5):399-410.<sup>1</sup>; Thigpen MC et al. Antiretroviral preexposure prophylaxis for heterosexual HIV transmission in Botswana. *N Engl J Med.* 2012 Aug 2;367(5):423-34.<sup>2</sup>; Grant RM et al. Preexposure chemoprophylaxis for HIV prevention in men who have sex with men. *N Engl J Med.* 2010 Dec 30;363(27):2587-99.<sup>3</sup>; Choopanya K et al. Antiretroviral prophylaxis for HIV infection in injecting drug users in Bangkok, Thailand (the Bangkok Tenofovir Study): a randomised, double-blind, placebo-controlled phase 3 trial. *Lancet.* 2013 Jun 15;381(9883):2083-90.<sup>4</sup>; McCormack S et al. Pre-exposure prophylaxis to prevent the acquisition of HIV-1 infection (PROUD): effectiveness results from the pilot phase of a pragmatic open-label randomised trial. *Lancet.* 2016 Jan 2;387(10013):53-60.<sup>5</sup>; Molina JM et al. On-Demand Preexposure Prophylaxis in Men at High Risk for HIV-1 Infection. *N Engl J Med.* 2015 Dec 3;373(23):2237-46.<sup>6</sup>; Wingood GM et al. Racial differences and correlates of potential adoption of preexposure prophylaxis: results of a national survey. *J Acquir Immune Defic Syndr.* 2013 Jun 1;63 Suppl 1:S95-101.<sup>7</sup>

# US Adults with Indications for PrEP

Estimates of adults with indications for HIV pre-exposure prophylaxis by jurisdiction, transmission risk group, and race/ethnicity, United States, 2015

Transmission risk group	Total		Black/African American		Hispanic/Latino		White, non-Hispanic	
	Estimated number	% Of total	Estimated number	% Of risk group total	Estimated number	% Of risk group total	Estimated number	% Of risk group total
MSM	813,970	71.1	309,190	38.0	220,760	27.1	238,670	29.3
HET	258,080	22.5	164,660	63.8	46,580	18.0	36,540	14.2
Men	81,410	7.1	NA	NA	NA	NA	NA	NA
Women	176,670	15.4	NA	NA	NA	NA	NA	NA
PWID	72,510	6.3	26,490	36.5	14,920	20.6	28,020	38.6
Total	1,144,550	100.0	500,340	43.7	282,260	24.7	303,230	26.5

NA = not available.



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Smith DK, Van Handel M, Grey J. Estimates of adults with indications for HIV pre-exposure prophylaxis by jurisdiction, transmission risk group, and race/ethnicity, United States, 2015. *Ann Epidemiol.* 2018 Dec;28(12):850-857.e9.

# Learning Objectives

- i. Review the epidemiology of HIV infections in minority women
- ii. Describe the barriers for HIV Pre-exposure prophylaxis (PrEP) uptake in minority women
- iii. Discuss strategies to increase awareness and uptake of PrEP in minority women

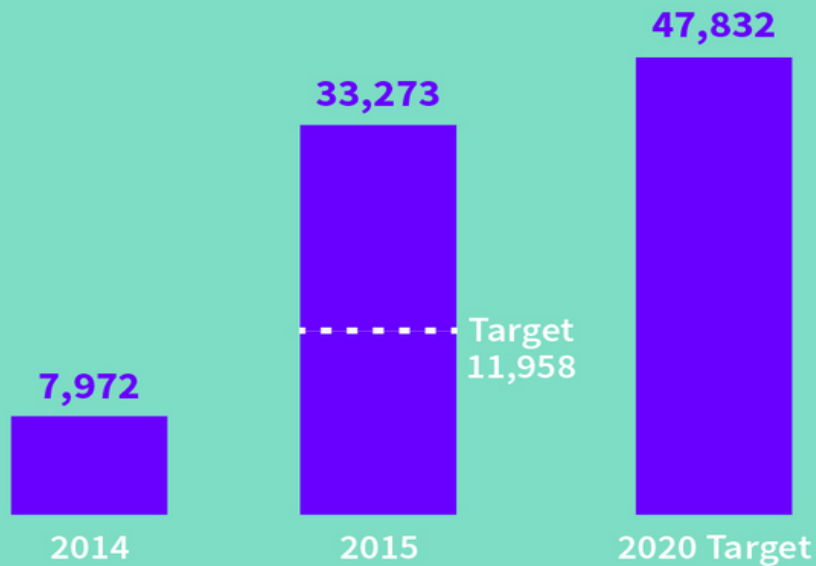


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# PrEP is Underutilized

PrEP prescriptions increased by more than 300% from 2014 to 2015, but uptake is far below the 1.2 million who could benefit from PrEP.



Source: CDC Monitoring Report, 2017

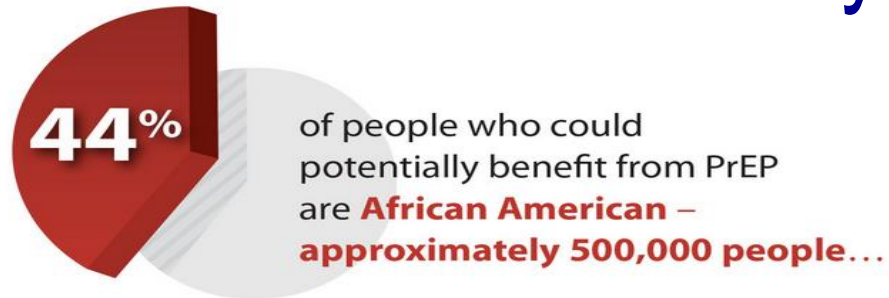


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Wolitski R. PrEP Prescriptions on the Rise: But More Work Remains. 2018. [cited 28 October 2018]. Available from: <https://www.hiv.gov/blog/prep-prescriptions-rise-more-work-remains>

# PrEP is Underutilized

## Focus on Minority Populations



...but only **1%** of those – **7,000 African Americans** – were prescribed PrEP\*



...but only **3%** of those – **7,600 Latinos** – were prescribed PrEP\*



\*Prescription data in this analysis limited to those filled at retail pharmacies or mail order services from September 2015 – August 2016; racial and ethnic information not available for one-third of the prescription data



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Centers for Disease Control and Prevention. 2018 Conference on Retroviruses and Opportunistic Infections. 2018. [cited 28 October 2018]. Available from: <https://www.cdc.gov/nchstp/newsroom/2018/croi-2018.html#Graphics>

# PrEP is Underutilized

## Focus on Women

- Approximately 1.1 million persons in the US had indications for PrEP use in 2015 <sup>(1)</sup>
- A fraction of this population is currently receiving PrEP <sup>(2)</sup>
  - Younger, black, and Hispanic populations are undertreated
  - Among 3485 women initiating PrEP, only 12.7% younger than 25 years old (2013-2016)
  - White women 3.8 X and 4.4 X more likely to initiate PrEP than their black and Hispanic counterparts



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Smith DK et al. Estimates of adults with indications for HIV pre-exposure prophylaxis by jurisdiction, transmission risk group, and race/ethnicity, United States, 2015. *Ann Epidemiol.* 2018 Dec;28(12):850-857.e9. <sup>1</sup>; Bush S et al. Utilization of emtricitabine/tenofovir (FTC/TDF) for HIV pre-exposure prophylaxis in the United States by gender (2013-1Q2016). *J Int AIDS Soc.* 2017;19(suppl 7):14-15. <sup>2</sup>

# Barriers to PrEP Implementation

## *Lack of knowledge*

- About PrEP
- HIV-related health literacy
- HIV risk perception

## *Healthcare provider bias*

- Based on social class and/or sexual behavior
- May hinder effective communication about HIV risk and PrEP

## *Lack of resources and infrastructure*

- High costs associated with PrEP
- Difficulty reaching women in familiar health care settings

## *Challenges identifying women who might benefit from HIV prevention*

- Assessing women's risk of acquiring HIV

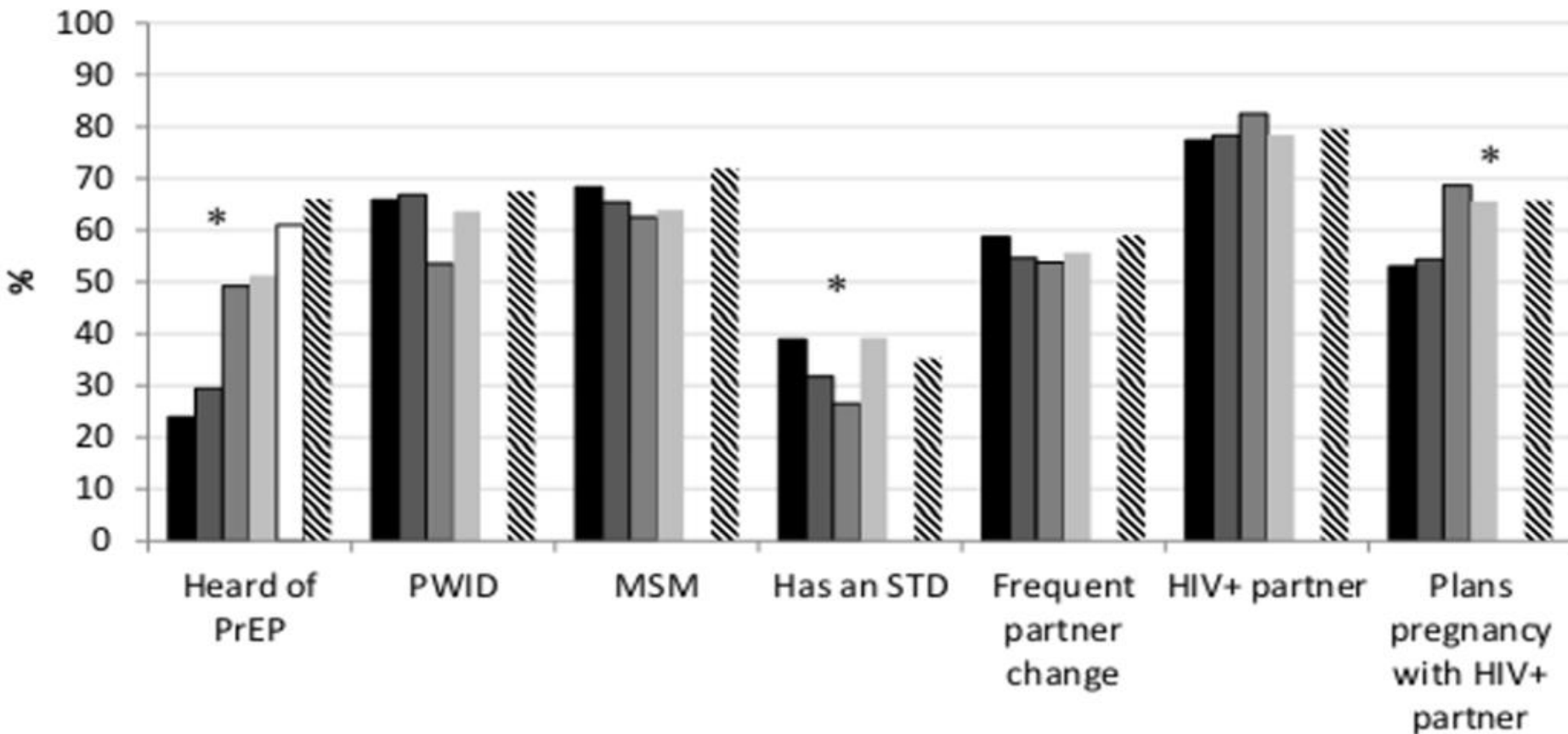


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Centers for Disease Control and Prevention: National Center for HIV/AIDS, Viral Hepatitis, STD, TB Prevention (NCHHSTP). Women and HIV Preexposure Prophylaxis (PrEP) Discussion Series Summary, April 2018. [cited 13 November 2018]. Available from: <https://www.cdc.gov/hiv/pdf/group/gender/women/cdc-hiv-women-and-PrEP-discussion-series.pdf>

# PrEP Awareness & Inclination to Prescribe

■ 2009 ■ 2010 ■ 2012 ■ 2013 □ 2014 ▨ 2015



Smith DK, Mendoza MC, Stryker JE, Rose CE. PrEP Awareness and Attitudes in a National Survey of Primary Care Clinicians in the United States, 2009-2015. PLoS One. 2016 Jun 3;11(6):e0156592.

# Primary Care Clinicians and PrEP

- In 2015, despite PrEP awareness of 67% only 7% had prescribed PrEP <sup>(1)</sup>
- > 90% of practitioners indicated a willingness to prescribe PrEP when efficacy described as >75%
- Potential concerns that PrEP = behavioral disinhibition
- Greater effort & increased education is needed to provide PrEP for all groups at risk



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Smith MR, Micha R, Golden CD, Mozaffarian D, Myers SS. Global Expanded Nutrient Supply (GENUS) model: a new method for estimating the global dietary supply of nutrients. PLoS One. 2016 Jan 25;11(1).<sup>1</sup>

# Barriers Related to Medical Care

- Need for multifaceted, culturally sensitive, comprehensive strategies to support PrEP access and use by women <sup>(1)</sup>
  - Potential mistrust toward medical institutions <sup>(2)</sup>
  - Potential implicit (i.e., subconscious) bias within medical community towards minority groups
    - In one study, medical students perceived Black patients are more likely to increase engagement in condomless sex if prescribed PrEP <sup>(3)</sup>



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Smith DK et al. Vital Signs: Estimated Percentages and Numbers of Adults with Indications for Preexposure Prophylaxis to Prevent HIV Acquisition--United States, 2015. *MMWR Morb Mortal Wkly Rep.* 2015 Nov 27;64(46):1291-5.<sup>1</sup>; Stratford D et al. Addressing poverty as risk for disease: recommendations from CDC's consultation on microenterprise as HIV prevention. *Public Health Rep.* 2008 Jan-Feb;123(1):9-20.<sup>2</sup>; Kelso GA et al. Critical consciousness, racial and gender discrimination, and HIV disease markers in African American women with HIV. *AIDS Behav.* 2014 Jul;18(7):1237-46.<sup>3</sup>

# Social and Structural Barriers

- PrEP uptake among women in the US and other countries has been limited <sup>(1)</sup>
  - Racism, poverty/financial concerns, unstable housing, unemployment, food insecurity, intimate partner violence (IPV) may play a role <sup>(2-5)</sup>
  - Lack of adequate health insurance <sup>(6)</sup>
    - Limited access to high-quality health care
    - Limited information about PrEP
  - Myriad social factors connected to poverty may render accessing/taking PrEP as less important <sup>(7)</sup>
    - Unemployment
    - Unstable housing
    - Food insecurity

Smith DK et al. Vital Signs: Estimated Percentages and Numbers of Adults with Indications for Preexposure Prophylaxis to Prevent HIV Acquisition--United States, 2015. *MMWR Morb Mortal Wkly Rep.* 2015 Nov 27;64(46):1291-5.<sup>1</sup>; Stratford D et al. Addressing poverty as risk for disease: recommendations from CDC's consultation on microenterprise as HIV prevention. *Public Health Rep.* 2008 Jan-Feb;123(1):9-20.<sup>2</sup>; Kelso GA et al. Critical consciousness, racial and gender discrimination, and HIV disease markers in African American women with HIV. *AIDS Behav.* 2014 Jul;18(7):1237-46.<sup>3</sup>; Guest G et al. Acceptability of PrEP for HIV prevention among women at high risk for HIV. *J Womens Health (Larchmt).* 2010 Apr;19(4):791-8.<sup>4</sup>; Smith DK et al. Attitudes and program preferences of African-American urban young adults about pre-exposure prophylaxis(PrEP). *AIDS Educ Prev.* 2012 Oct;24(5):408-21.<sup>5</sup>; Gwadz M et al. Factors Associated with Recent HIV Testing among Heterosexuals at High Risk for HIV Infection in New York City. *Front Public Health.* 2016 Apr 27;4:76.<sup>6</sup>; Cornelius T et al. Impact of food, housing, and transportation insecurity on ART adherence: a hierarchical resources approach. *AIDS Care.* 2017 Apr;29(4):449-457.<sup>7</sup>



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# Social and Structural Barriers Intimate Partner Violence (IPV)

## *IPV limits power and control*

- Limited ability to negotiate safe sexual practices <sup>(1)</sup>

## *IPV may limit ability to access/adhere to PrEP <sup>(2)</sup>*

- Limited access to money
- Limited mobility/ability to attend medical visits
- Limited ability to take PrEP consistently

## *PrEP may be given lower priority <sup>(2)</sup>*

- Setting of risks to physical and emotional health



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Mittal M et al. Fear of violent consequences and condom use among women attending an STD clinic. *Women Health*. 2013;53(8):795-807.<sup>1</sup>; Braksmajer A et al. The Potential of Pre-Exposure Prophylaxis for Women in Violent Relationships. *AIDS Patient Care STDS*. 2016 Jun;30(6):274-81.<sup>2</sup>

# Social and Structural Barriers HIV-Related Social Stigma

- Focus group discussions with 20 HIV-negative Women's Interagency HIV Study (WIHS) participants in Washington DC (90% minority) <sup>(1)</sup>
  - Family and friends may question reasons for taking “HIV medicines”
  - May be presumed to be HIV-positive
  - Potential for hostile reactions from male partner
    - Accusations of infidelity
    - Fear of introducing mistrust into relationship
  - Fear of judgmental responses from providers following disclosure of risk behaviors



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Goparaju L, Praschan NC, Warren-Jeanpiere L, Experton LS, Young MA, Kassaye S. Stigma, partners, providers and costs: potential barriers to PrEP uptake among US women. *Journal of AIDS & clinical research.* 2017 Sep;8(9).<sup>1</sup>

# Other Social and Structural Barriers

- Adherence to prescribed gender roles <sup>(1)</sup>
  - Self-silencing + sacrificing self-needs
  
- Gender-based power imbalances <sup>(2)</sup>
  - May constrain ability to negotiate safer sexual practices
    - High levels of relationship power correlate with increased reports of consistent condom use ( $p < 0.05$ )
    - Largely Latina cohort ( $n=388$ ) at urban community health center <sup>(2)</sup>
  
  - Potential benefit of including issue of “relationship power” in design of programs promoting sexual health<sup>(2)</sup>



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Brody LR et al. Gender Roles and Mental Health in Women With and at Risk for HIV. *Psychol Women Q.* 2014 Sep 1;38(3):311-326.<sup>1</sup> Pulerwitz J et al. Relationship power, condom use and HIV risk among women in the USA. *AIDS Care.* 2002 Dec;14(6):789-800.<sup>2</sup>

# Behavioral & Mental Health Issues

- High prevalence of mental health issues among women at risk for HIV
- Mood disorders
  - Depression <sup>(1)</sup>
    - Neglecting self-care, negative self-worth
    - Negatively influence self-care re: sexual health
- Substance abuse disorders <sup>(2-3)</sup>
  - Increased sexual risk
  - Impaired decision-making process



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Dale SK et al. Resilience Moderates the Association Between Childhood Sexual Abuse and Depressive Symptoms Among Women with and At-Risk for HIV. *AIDS Behav.* 2015 Aug;19(8):1379-87.<sup>1</sup>; W Batchelder A et al. Importance of substance use and violence in psychosocial syndemics among women with and at-risk for HIV. *AIDS Care.* 2016 Oct;28(10):1316-20.<sup>2</sup>; Scott-Sheldon LA et al. Alcohol Use Predicts Sexual Decision-Making: A Systematic Review and Meta-Analysis of the Experimental Literature. *AIDS Behav.* 2016 Jan;20 Suppl 1:S19-39.<sup>3</sup>

# Behavioral & Mental Health Issues

- > 60% of women at risk for and with HIV have histories of trauma/abuse <sup>(1)</sup>
  - Sexual assault, physical abuse, domestic violence
  - Childhood sexual abuse (CSA) strongly associated with history of domestic violence and high-risk behaviors
    - Drug use
    - Lifetime number of male sex partners (>10)
    - Male partners at risk for HIV infection
    - Transactional sex



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Cohen, D., Spear, S., Scribner, R., Kissinger, P., Mason, K., & Wildgen, J. (2000). "Broken windows" and the risk of gonorrhea. *American journal of public health*, 90(2), 230-6.<sup>1</sup>

# Behavioral & Mental Health Issues

- Post-traumatic stress disorder (PTSD) <sup>(1)</sup>
  - ~30% rate in HIV-positive US women
  - Flashbacks, hyperarousal, dissociation
  - May limit ability to negotiate safe practices during sex
- Literature on direct associations with PrEP adherence is limited
- Recognizing and addressing trauma and PTSD
  - Potential opportunity to impact HIV risk in women



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Machtiger EL, Wilson TC, Haberer JE, Weiss DS. Psychological trauma and PTSD in HIV-positive women: a meta-analysis. *AIDS Behav.* 2012 Nov;16(8):2091-100. <sup>1</sup>

# Learning Objectives

- i. Review the epidemiology of HIV infections in minority women
- ii. Describe the barriers for HIV Pre-exposure prophylaxis (PrEP) uptake in minority women
- iii. Discuss strategies to increase awareness and uptake of PrEP in minority women



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# Increasing PrEP Awareness + Uptake

## ➤ Patient-Centered Approaches

- Increase knowledge of and access to PrEP among women in diverse settings
- Develop and disseminate gender and culturally appropriate learning materials for patients
- Encourage women and clinicians to increase women's knowledge/awareness of
  - PrEP
  - HIV Risk



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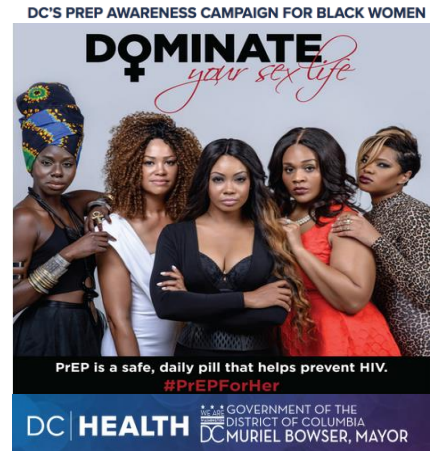
Centers for Disease Control and Prevention: National Center for HIV/AIDS, Viral Hepatitis, STD, TB Prevention (NCHHSTP). Women and HIV Preexposure Prophylaxis (PrEP) Discussion Series Summary, April 2018. [cited 13 November 2018]. Available from: <https://www.cdc.gov/hiv/pdf/group/gender/women/cdc-hiv-women-and-PrEP-discussion-series.pdf>



# Patient-Centered Approaches

- Empowering women at risk for HIV
  - Promoting increased self-care for sexual health and HIV prevention (1)
    - May enhance benefits of PrEP
  - Increase understanding of ability of PrEP to offer increased autonomy over their sexual health (2)

## + PrEP For Her



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Flash, C. A., Dale, S. K., & Krakower, D. S. (2017). Pre-exposure prophylaxis for HIV prevention in women: current perspectives. *International journal of women's health*, 9, 391-401.<sup>1</sup>; Braksmajer, A., Senn, T. E., & McMahon, J. (2016). The Potential of Pre-Exposure Prophylaxis for Women in Violent Relationships. *AIDS patient care and STDs*, 30(6), 274-81.<sup>2</sup>

# Patient-Centered Approaches

- Social factors can improve PrEP adherence <sup>(1)</sup>
  - Qualitative interviews by 60 Partners PrEP Study participants in Uganda
    - Supportive relationships with family
    - Supportive relationships with sexual partners



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Ware NC, Wyatt MA, Haberer JE, Baeten JM, Kintu A, Psaros C, Safren S, Tumwesigye E, Celum CL, Bangsberg DR. What's love got to do with it? Explaining adherence to oral antiretroviral pre-exposure prophylaxis for HIV-serodiscordant couples. *J Acquir Immune Defic Syndr*. 2012 Apr 15;59(5):463-8. <sup>1</sup>

# Increasing PrEP Awareness + Uptake

- Health care provider-centered approaches
  - Increase clinicians' PrEP knowledge/clinical skills
    - Providing PrEP care
    - Effectively assessing HIV risk
    - Review sexual health
    - Discuss contraception and family planning
    - Promote testing and connecting patients and partners to care
    - Explain antiretroviral therapy as treatment and prevention
  - Cultivate respectful patient-provider interactions
    - Enable shared decision making
    - Communication to reduce fear, anxiety, stigma



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Centers for Disease Control and Prevention: National Center for HIV/AIDS, Viral Hepatitis, STD, TB Prevention (NCHHSTP). Women and HIV Preexposure Prophylaxis (PrEP) Discussion Series Summary, April 2018. [cited 13 November 2018]. Available from: <https://www.cdc.gov/hiv/pdf/group/gender/women/cdc-hiv-women-and-PrEP-discussion-series.pdf>

# Health Care Provider-Centered Approaches

- Robust adherence support strategies <sup>(1)</sup>
  - Counseling
  - Advice to link pill-taking behaviors with consistent daily routines
  - Reminder tools (e.g., alarms)
  - Partner awareness and support



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Corneli A, Perry B, Agot K, Ahmed K, Malamatsho F, Van Damme L. Facilitators of adherence to the study pill in the FEM-PrEP clinical trial. PloS one. 2015 Apr 13;10(4).<sup>1</sup>

# Increasing PrEP Awareness + Uptake

- Research community-centered approaches
  - Establish best-practices for identifying women at risk for HIV acquisition
    - Most likely to benefit from PrEP use
  - Support health services research to address barriers
  - Develop/evaluate effective PrEP implementation models



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Centers for Disease Control and Prevention: National Center for HIV/AIDS, Viral Hepatitis, STD, TB Prevention (NCHHSTP). Women and HIV Preexposure Prophylaxis (PrEP) Discussion Series Summary, April 2018. [cited 13 November 2018]. Available from: <https://www.cdc.gov/hiv/pdf/group/gender/women/cdc-hiv-women-and-PrEP-discussion-series.pdf>

# Increasing PrEP Awareness + Uptake

## ➤ Community-based organizations <sup>(1)</sup>

- Essential partners for dissemination of knowledge about PrEP and PrEP uptake
  - Trust of the community
  - Ability to reach at-risk women outside of hospitals or clinics

## ➤ Community-based businesses <sup>(2)</sup>

- Nontraditional gateways for increasing
  - PrEP awareness
  - Screening
  - Linkage to providers



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Flash, C. A., Dale, S. K., & Krakower, D. S. (2017). Pre-exposure prophylaxis for HIV prevention in women: current perspectives. *International journal of women's health*, 9, 391-401.<sup>1</sup>; Browne R. C. (2006). Most Black women have a regular source of hair care--but not medical care. *Journal of the National Medical Association*, 98(10), 1652-3.<sup>2</sup>

# US Centers for Disease Control (CDC) Expanding PrEP awareness and access

➤ Renewed HIV prevention and surveillance funding program for state and local health departments

(Jan 2018)

- Prioritizing efforts to reach **all** PLWH with effective prevention and treatment options
- Prioritizing efforts to expand access to PrEP for HIV-negative individuals at substantial high risk
- Providing targeted funding to help health departments and community-based organizations expand PrEP



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Centers for Disease Control and Prevention. PrEP vs. HIV prevention pill not reaching most Americans who could benefit – especially people of color PEP. 2018. [cited 28 October 2018]. Available from: <https://www.cdc.gov/nchhstp/newsroom/2018/croi-2018-PrEP-press-release.html>

# CDC - Expanding PrEP awareness/access

- Inform and educate health care providers about PrEP
  - Issued clinical guidelines
  - Developed step-by-step checklists
  - Developed interview guides for clinical use
  - Sponsoring online clinical training (CME)
  - Supporting expert clinical advice on PrEP

**The National HIV Clinicians Consultation Center**

<http://nccc.ucsf.edu>

**PrEpline** 1-855-448-7737 | 9 am to 8 pm EST, Monday through Friday



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Centers for Disease Control and Prevention. PrEP vs. HIV prevention pill not reaching most Americans who could benefit – especially people of color PEP. 2018. [cited 28 October 2018]. Available from: <https://www.cdc.gov/nchhstp/newsroom/2018/croi-2018-PrEP-press-release.html>



# CDC - Expanding PrEP awareness/access

- Supporting implementation research
  - Examine practical requirements, costs, and impact of PrEP
- Conducting studies to evaluate next generation PrEP options
  - Long-acting injectable PrEP
  - Multimodal delivery options (topical, intravaginal rings)



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Centers for Disease Control and Prevention. PrEP vs. HIV prevention pill not reaching most Americans who could benefit – especially people of color PEP. 2018. [cited 28 October 2018]. Available from: <https://www.cdc.gov/nchstp/newsroom/2018/croi-2018-PrEP-press-release.html>

# CDC - Expanding PrEP awareness/access

- Promoting knowledge + use of **all** HIV prevention strategies
  - Treatment to suppress the virus among PLWH
  - Correct and consistent use of condoms
  - Reducing risk behaviors
  - Ensuring people who inject drugs (PWID) have access to comprehensive prevention services
    - Drug treatment
    - HIV testing and linkage to care
    - Sterile syringes and injection equipment



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Centers for Disease Control and Prevention. PrEP vs. HIV prevention pill not reaching most Americans who could benefit – especially people of color PEP. 2018. [cited 28 October 2018]. Available from: <https://www.cdc.gov/nchstp/newsroom/2018/croi-2018-PrEP-press-release.html>

# Conclusions

- Significant racial disparities exist in HIV **diagnoses** among women in the US
- PrEP has the potential to have a substantial impact on the HIV epidemic among minority women
- PrEP is currently underutilized
- Numerous social and structural barriers exist for minority women in accessing and adhering to PrEP
- Effective strategies to increase awareness and uptake of PrEP will involve
  - Culturally appropriate interventions to raise awareness
  - Health Care Providers
  - The Research Community
  - Public Health Organizations
  - Community Based Organizations and Advocates



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# Resources

- CDC HIV Guidelines - Preventing New HIV Infections
  - <https://www.cdc.gov/hiv/guidelines/preventing.html>
- Preexposure prophylaxis for the prevention of HIV infection in the United States - 2017 Update a clinical practice guideline
  - <https://www.cdc.gov/hiv/pdf/risk/prep/cdc-hiv-prep-guidelines-2017.pdf>
- PrEP Hotline - (855) 448-7737 or (855) HIV-PrEP
- Act Against AIDS for Healthcare Providers
  - <http://www.cdc.gov/actagainstaids/professionals/index.html>



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# Additional Resources

## HIV/AIDS

<b>HIV/AIDS</b>
HIV Basics
HIV by Group +
HIV Risk and Prevention -
HIV Risk and Prevention Estimates +
Oral Sex
Anal Sex
Vaginal Sex
Drug Use and HIV +
<b>Pre-Exposure Prophylaxis (PrEP)</b>
Post-Exposure Prophylaxis (PEP)
HIV Treatment as Prevention
Condoms
HIV in the Workplace

HIV/AIDS > [HIV Risk and Prevention](#)

### Pre-Exposure Prophylaxis (PrEP)



Pre-exposure prophylaxis, or PrEP, is a way for people who do not have HIV but who are at substantial risk of getting it to *prevent* HIV infection by taking a pill every day. The pill (brand name Truvada) contains two medicines (tenofovir and emtricitabine) that are used in combination with other medicines to treat HIV. When someone is exposed to HIV through sex or injection drug use, these medicines can work to keep the virus from establishing a permanent infection.

When taken consistently, PrEP has been shown to reduce the risk of HIV infection in people who are at high risk by up to 92%. PrEP is much less effective if it is not taken consistently.

PrEP is a powerful HIV prevention tool and can be combined with condoms and other prevention methods to provide even greater protection than when used alone. But people who use PrEP must commit to taking the drug every day and seeing their health care provider for follow-up every 3 months.



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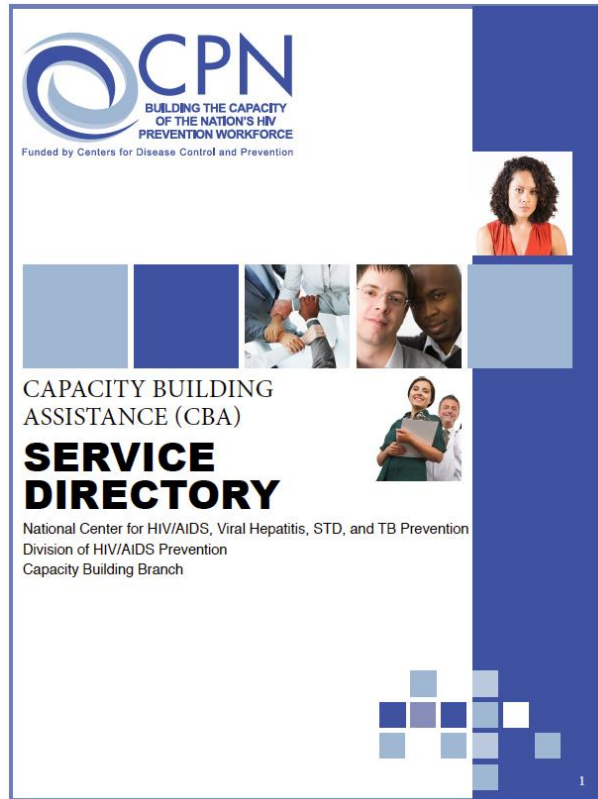
**Resources for Consumers** +

**Resources for Providers** +



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# CBA Service Directory



- 21 member organizations
- Provide face-to-face and teleconference assistance
- CBA Service Directory downloadable from [http://cbaproviders.org/Resources/eMaterials/21/CBA%20Service%20DirectoryFINAL8\\_15web.pdf](http://cbaproviders.org/Resources/eMaterials/21/CBA%20Service%20DirectoryFINAL8_15web.pdf)



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# Getting Help from CDC CPN Members

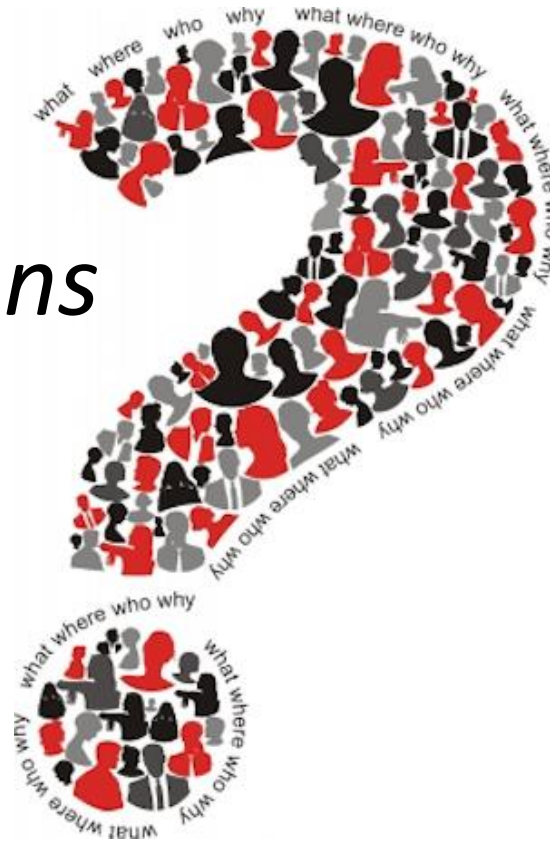
- For capacity-building assistance, please email your request to [hco@cbaproviders.org](mailto:hco@cbaproviders.org)
- Who can **access directly**?
  - Health Departments
  - Organizations funded by CDC
- Other non-clinical organizations: Contact state health department (see tab on webpage)
- Organizations providing clinical services can **request a CRIS account** (see tab on webpage)



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# Thank you for your participation!

## *Questions*



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Image courtesy of Vlado at FreeDigitalPhotos.net



# Learning Collaborative Discussion:

1. How well does your PrEP program reach racial/ethnic minority women?



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# Learning Collaborative Discussion:

1. How well does your PrEP program reach racial/ethnic minority women?
2. What barriers do you encounter delivering PrEP services to racial/ethnic minority women?



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# Learning Collaborative Discussion:

1. How well does your PrEP program reach racial/ethnic minority women?
2. What barriers do you encounter delivering PrEP services to racial/ethnic minority women?
- 3. What types of strategies are needed to increase awareness and uptake of PrEP among racial/ethnic minority women?**



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# Learning Collaborative Discussion:

1. How well does your PrEP program reach racial/ethnic minority women?
2. What barriers do you encounter delivering PrEP services to racial/ethnic minority women?
3. What types of strategies are needed to increase awareness and uptake of PrEP among racial/ethnic minority women?
- 4. What other tools are needed for HIV prevention among racial/ethnic minority women?**



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