

HIV Prevention and Care among Substance Using Populations

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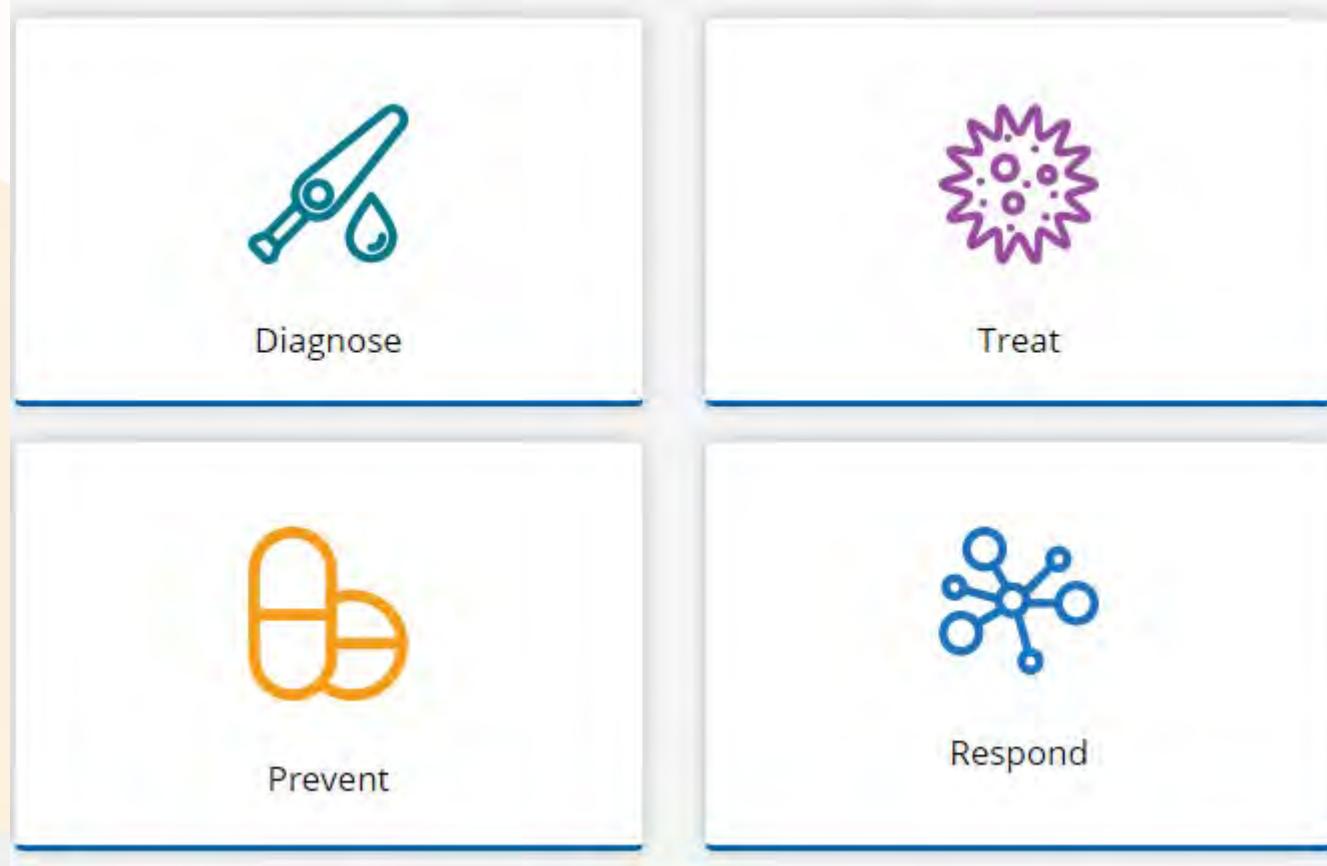


Objectives

- Overview of HIV in the US – recent trends
- Describe the connections among substance use, and HIV prevention and care
- Barriers and facilitators to HIV prevention
- Recent and ongoing research in our center



Ending the HIV Epidemic (EHE) in the U.S.



Ending the HIV Epidemic (EHE) in the U.S.

Ending
the
HIV
Epidemic

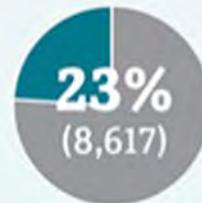
Overall Goal: Decrease the number of new HIV diagnoses to 9,588 by 2025 and 3,000 by 2030.



There were **36,801 NEW HIV DIAGNOSES** in the US and dependent areas in 2019. Of those:



were among gay
and bisexual men*



were among
heterosexuals

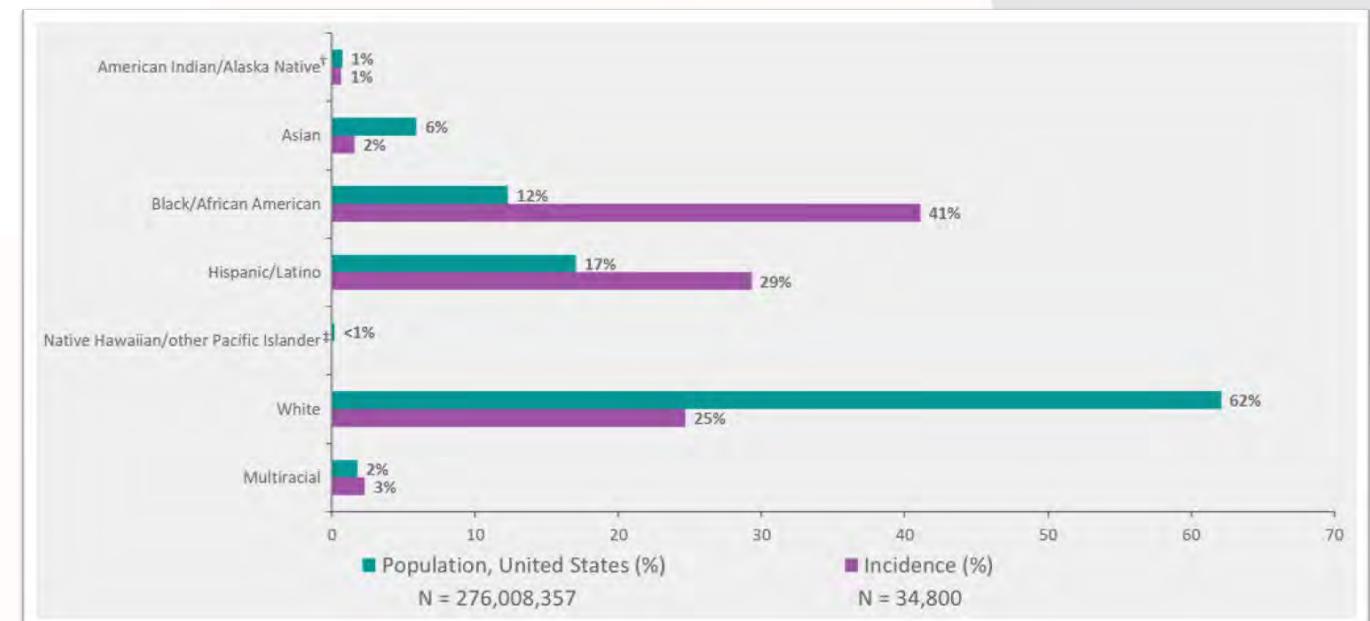
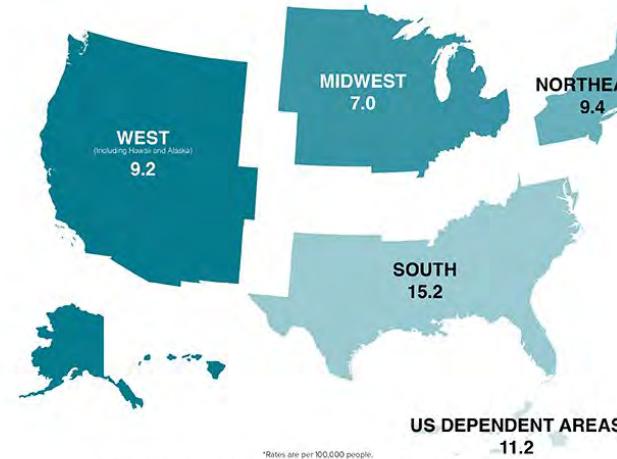


were among people
who inject drugs

* Includes infections attributed to male-to-male sexual contact and injection drug use (men who reported both risk factors).

HIV Disparities in the US: Region, Race/Ethnicity

Rates of New HIV Diagnoses in the US and Dependent Areas by Region, 2019*

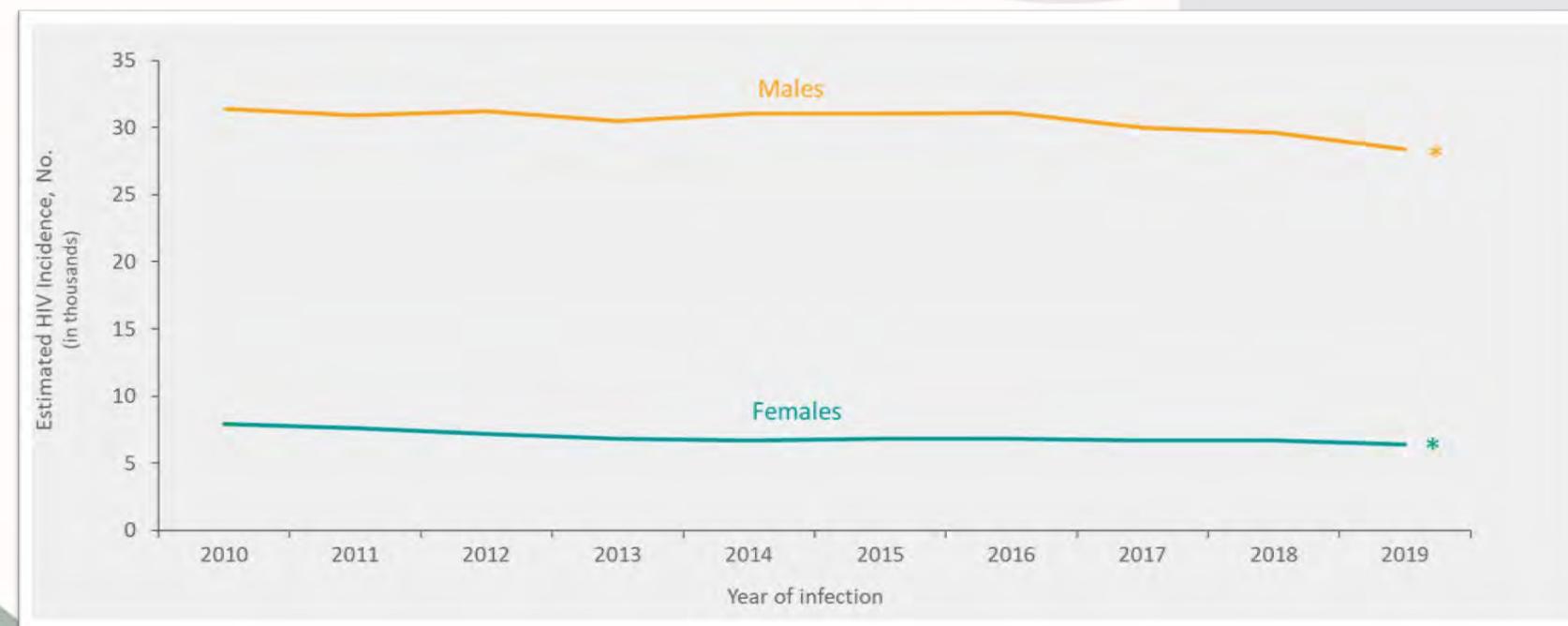


Centers for Disease Control and Prevention. HIV Surveillance Report, 2019; vol. 32.
<http://www.cdc.gov/hiv/library/reports/hiv-surveillance.html>. Published May 2021

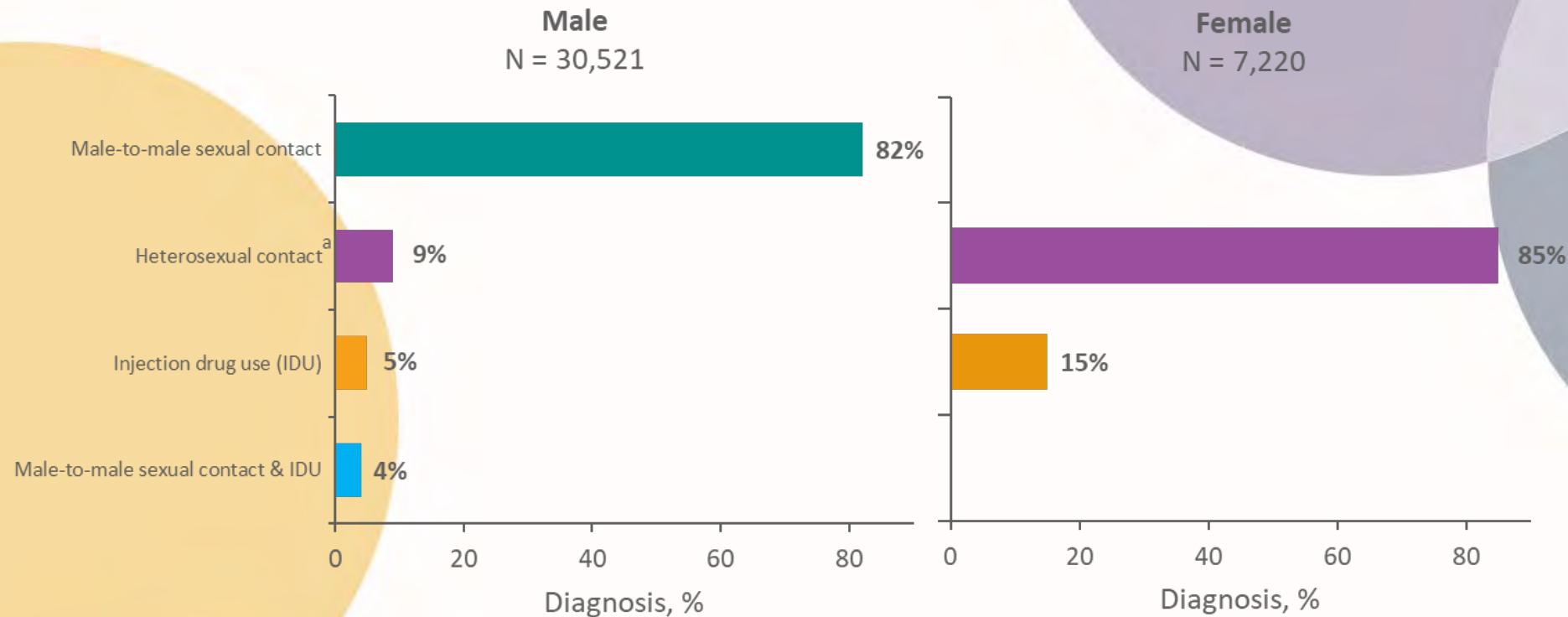
HIV Disparities in the US: Age/Sex

From 2010 to 2019 HIV diagnoses decreased among certain age groups

- 13-24 years ↓ 46%
- 25-34 years ↑ 35%
- Aged 35-44 years - stable
- 45-54 years ↓ 36%
- ≥ 55 years - stable



Diagnoses of HIV Infection among Adults and Adolescents, by Sex and Transmission Category, 2018—United States and 6 Dependent Areas



Note. Data for the year 2018 are considered preliminary and based on 6 months reporting delay. Data have been statistically adjusted to account for missing transmission category. “Other” transmission category not displayed as it comprises less than 1% of cases.

^a Heterosexual contact with a person known to have, or to be at high risk for, HIV infection.



HIV and Substance Use

- Substance use is associated with HIV and other STIs
- Injection drug use is one of the transmission categories tracked by the CDC (direct route)
- Most individuals who use substances do not inject drugs
- Injection drug use does not account for all of the HIV risk among individuals who use substances
 - Altered judgement
 - Increased likelihood of engaging in risky behaviors
 - Decreased inhibitions

HIV and Substance Use

- Other factors to consider:
 - Level of drug use (severity) and type of drug
 - Gender
 - Partner gender
 - Mental health
 - Trauma history



Risk by type of substance

Alcohol

Risky sexual behaviors

- Decreased inhibitions, nervousness
- Poorer judgement
- Sexual enhancement



Hendershot CS, Stoner SA, Pantalone DW, Simoni JM. Alcohol use and antiretroviral adherence: review and meta-analysis. *J Acquir Immune Defic Syndr*. 2009;52(2):180–202.

Alcohol use is associated with lower ART adherence among people living with HIV

- Unsustained viral suppression
- Risk of transmitting to others

AIDS and Behavior
<https://doi.org/10.1007/s10461-022-03657-x>

ORIGINAL PAPER

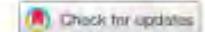
Daily Associations Between Alcohol Consumption and Antiretroviral Therapy (ART) Adherence Among HIV-Positive Men Who Have Sex With Men

Alan Z Sheinfil¹ · Jacklyn D. Foley² · Dezarie Moskal³ · Michelle R. Dalton¹ · Madison Firkey¹ · Jeremy Ramos¹ · Stephen A. Maisto¹ · Sarah E. Woolf-King¹

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A conceptual model of alcohol use and adherence to antiretroviral therapy: systematic review and theoretical implications for mechanisms of action

Sarah E. Woolf-King, Alan Z. Sheinfil , Jeremy Ramos, Jacklyn D. Foley, Dezarie Moskal, Madison Firkey, David Kellen and Stephen A. Maisto



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Neurobehavioral
Research on Addiction

HIV risk by type of substance

- **Opioids.**
 - Needle sharing
 - Risky sexual behaviors
- **Methamphetamine.**
 - Risky sexual behavior
 - Expectation of increased libido, sexual pleasure
 - Can be injected – needle sharing
- **Crack cocaine.**
 - Transactional sex – trading sex for money or drugs

Gender differences

- Gender power imbalances result in differential drug and sexual risks
 - Intimate Partner Violence
 - Coercive sex
 - Violence

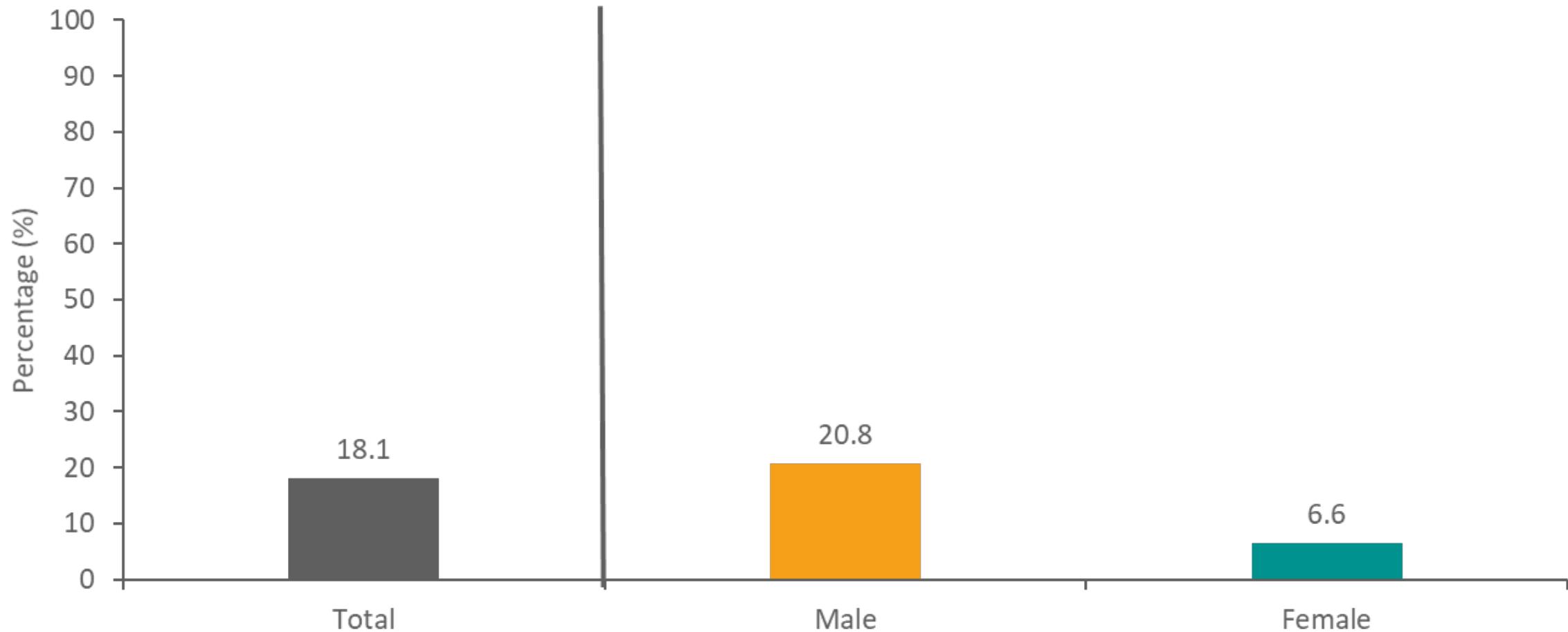
HIV Prevention Strategies

- Early HIV prevention focused primarily on individual level factors (mainly behavioral)
 - Increasing condom use
 - Educating about individual risk factors
 - Encouraging frequent HIV testing
 - Discouraging injection drug use

Biomedical Prevention Strategies

- 2012 Truvada was approved by the U.S. Food and Drug Administration as a human immunodeficiency virus (HIV) pre-exposure prophylaxis (PrEP) medication
- Despite known effectiveness, uptake is low
- Only about 18% of individuals who could benefit from PrEP received a prescription in 2018
- We see similar disparities in use of PrEP as we see in incidence of HIV

PrEP Coverage among Persons Aged ≥ 16 Years, by Sex at Birth 2018—United States

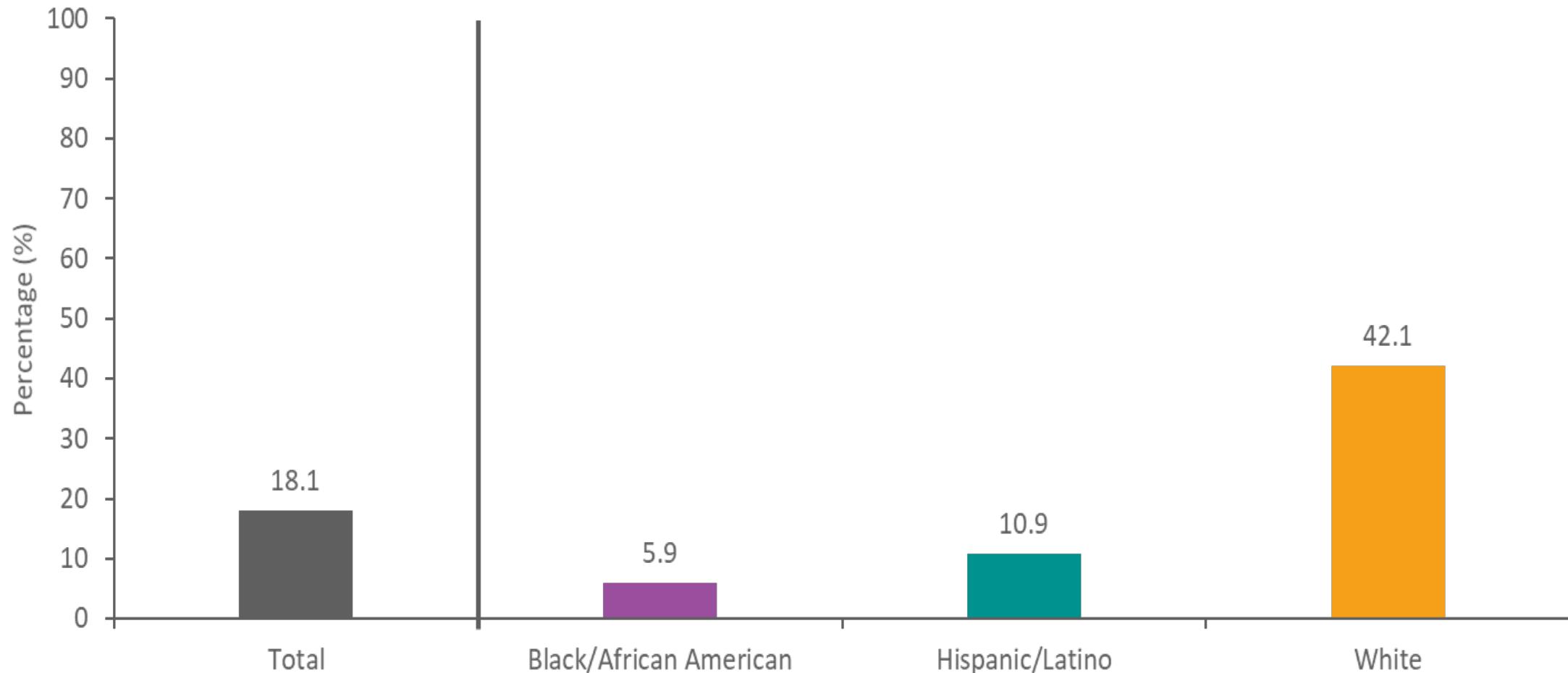


Abbreviation: PrEP, preexposure prophylaxis.

Note. PrEP coverage, reported as a percentage, was calculated as the number who have been prescribed PrEP divided by the estimated number of persons who had indications for PrEP. Different data sources were used in the numerator and denominator to calculate PrEP coverage.



PrEP Coverage among Persons Aged ≥16 Years, by Race/ethnicity 2018—United States



Abbreviation: PrEP, preexposure prophylaxis.

Note. PrEP coverage, reported as a percentage, was calculated as the number who have been prescribed PrEP divided by the estimated number of persons who had indications for PrEP. Race/ethnicity data were only available for 35% of persons prescribed PrEP in 2018. Number prescribed PrEP and PrEP coverage for race/ethnicity reported in the table were adjusted applying the distribution of records with known race/ethnicity to records with missing race/ethnicity. Different data sources were used in the numerator and denominator to calculate PrEP coverage.



Reasons for low PrEP Use

- Lack of knowledge
- Provider reluctance to assess risk, refer, or prescribe
- Low perceived personal risk
- Concerns about side effects or drug interactions
- ...etc.

How do we intervene?

- It is important to consider individual differences when determining an approach to HIV prevention
- No single solution works for everyone
- Trauma informed approaches that integrate treatment for substance use disorders while creating a favorable environment to address the impact on trauma on substance use, HIV risk, and self care.

Types of Prevention

- Universal Prevention
 - Focus on developing strategies to change environmental or community characteristics
 - Educational activities – targeting a whole group
 - Mass media campaigns
 - Legislation



Universal Prevention in the US

- Why legislation matters

AIDS Behav (2014) 18:2144–2155
DOI 10.1007/s10461-014-0789-9

ORIGINAL PAPER

Syringe Exchange in the United States: A National Level Economic Evaluation of Hypothetical Increases in Investment

Trang Quynh Nguyen · Brian W. Weir ·
Don C. Des Jarlais · Steven D. Pinkerton ·
David R. Holtgrave

“With an annual \$10 to \$50 million funding increase, 194–816 HIV infections would be averted (cost per infection averted \$51,601–\$61,302). Contrasted with HIV treatment cost savings alone, the rate of financial return on investment would be 7.58–6.38.”

Universal Prevention in the US

Many Americans still paying high costs months after insurers were ordered to cover HIV preventive care

By Sarah Varney, Kaiser Health News

<https://www.cnn.com/2022/02/28/health/hiv-preventive-care-free/index.html>

Press release

HHS Announces New Policy to Make Coverage More Accessible and Affordable for Millions of Americans in 2023

Apr 28, 2022 | Affordable Care Act

<https://www.cms.gov/newsroom/press-releases/hhs-announces-new-policy-make-coverage-more-accessible-and-affordable-millions-americans-2023>



Prevention Interventions

- Selective prevention efforts focus on helping individuals develop strategies to make healthier choices and change harmful behaviors
- Indicated prevention efforts focus on people who show early (detectable) signs of a problem (e.g. individual with an STI but HIV negative or individual with IPV history and substance use but no risky sexual behaviors)



Understanding Barriers to HIV prevention

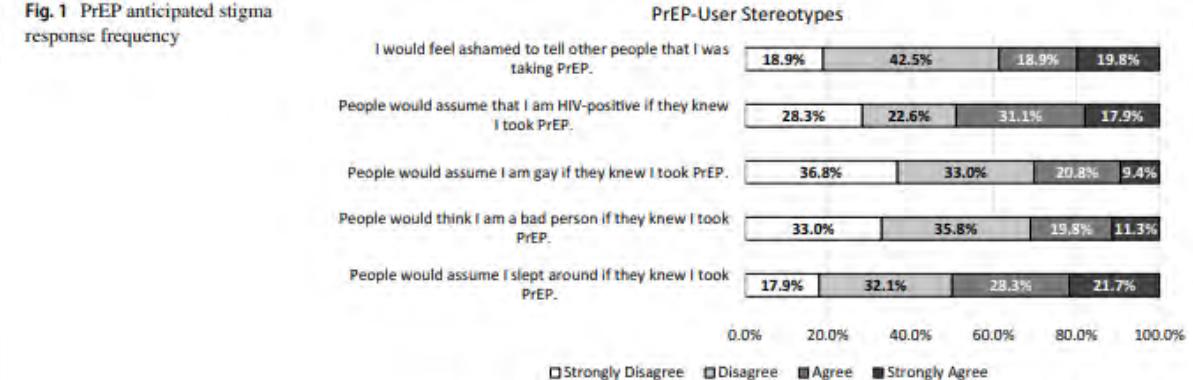
Archives of Sexual Behavior (2021) 50:2955–2964
https://doi.org/10.1007/s10508-021-02031-7

ORIGINAL PAPER

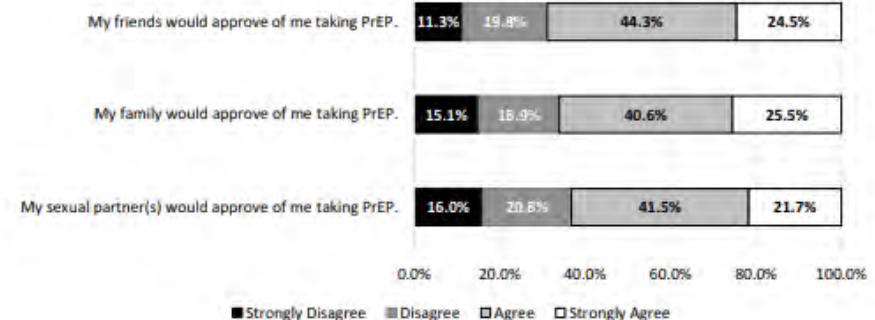
Predictors of Anticipated PrEP Stigma among Women with Self-Reported Problematic Substance Use: Implications for Engaging Women in the PrEP Care Continuum

Angela M. Heads¹  · Mandy J. Hill² · Robert Suchting¹ · Luba Yammie¹ · Adrienne Gilmore-Thomas¹

Fig. 1 PrEP anticipated stigma response frequency



PrEP Disapproval by Others



Understanding Barriers

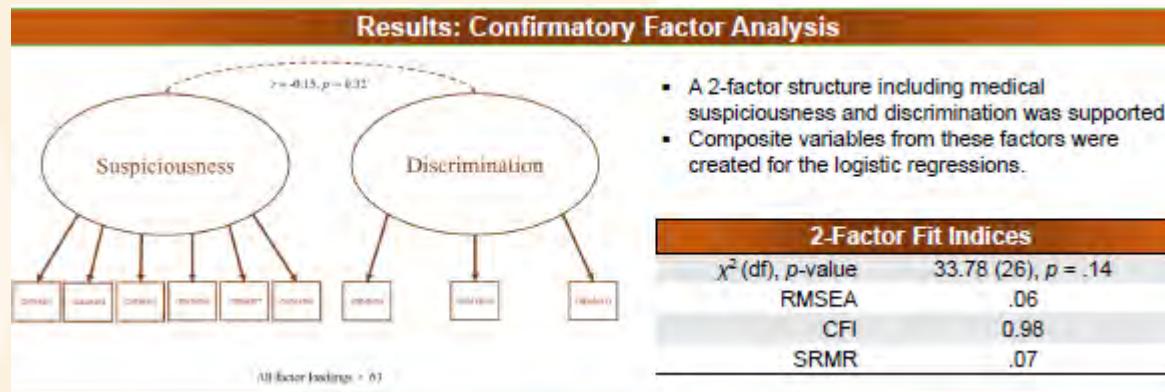


The University of Texas
Health Science Center at Houston

HIV Testing Barriers among Ethnically and Racially Diverse Women: An Examination of Medical Mistrust, Discrimination, and Substance Use

Sarah Tonkin, MA & Angela Heads, PhD

University of Texas Health Science Center at Houston



- Lower medical suspiciousness and higher discrimination exposure were associated with a greater likelihood of being tested for HIV.
- Lower medical suspiciousness was associated with a greater likelihood of recent HIV testing. Medical suspiciousness moderated the effect of recent HIV testing for individuals with problematic substance use. Greater medical suspiciousness was associated with a lower probability of recent testing for individuals with problematic substance use.

Understanding Barriers – Ongoing Research

The purpose of the study is to:

- Apply an intersectional lens to identify barriers to engagement in HIV prevention;
- Assess the impact of perceived stigma, self-efficacy, medical mistrust, and health literacy on willingness to engage in integrated HIV prevention and SUD interventions;
- Explore provider attitudes about HIV prevention among individuals with problematic substance use; and explore the potential acceptability of an integrated HIV prevention and SUD treatment intervention.
- Funded by the Texas Developmental Center for HIV Research

Understanding Barriers – Ongoing Research

Aim 1: Identify individual characteristics that impact likelihood of engaging in HIV prevention strategies. **Data collection completed – analyzing data**

Aim 2: Elicit information on knowledge and attitudes about HIV prevention strategies and perceived barriers to engaging in HIV prevention activities and obtain feedback about the potential design of an integrated behavioral intervention that addresses substance use and HIV risk. **Data collection in progress**

Principal Investigator:

Angela M. Heads, PhD

Co-Investigators:

- Rob Suchting, PhD
- Constanza de Dios, PhD
- Adrienne Gilmore-Thomas, PhD
- Judy Hong, PhD

UTHealth Department of Psychiatry and Behavioral Sciences

Intervention Development



Research Article

Hill MJ, et al., J AIDS Clin Res Sex Transm Dis 2020, 7: 028

DOI: 10.24966/ACRS-7370/100028

HSOA Journal of AIDS Clinical Research and STDs

PrEP Education and Awareness Building through an Intervention for African-Americans Reporting both Condomless Sex and Substance Use During an Emergency Department Visit

Mandy J Hill^{1*}, Charlene A Flash², Angela Heads³, Marylou Cardenas-Turanzas¹ and Richard Grimes¹

¹Department of Emergency Medicine, University of Texas Health, McGovern Medical School, Houston, USA

(n=9/14) and willingness to use PrEP (n=9/14).

Conclusion: Our study suggests iPrEP is potentially associated with PrEP willingness among sexually-active African American women who use substances.

Keywords: African American women; HIV; Pre-exposure prophylaxis (PrEP) education; Risk awareness; Substance use

Introduction

There are higher rates of new HIV diagnoses among African American women than among women from other racial and ethnic groups [1,2]. Condomless sex and substance use may compound that population risk [3]. Houston, TX ranks 11th in the nation for HIV incidence rates, of which 36% were women, and 71% of those were African American [4]. Risky sexual behavior in Texas is common: 88% of African American women contract HIV through condomless

Intervention Development: Ongoing Research Development and Pilot Testing of an Addiction Clinic-Based PrEP Adherence Intervention for Women with Substance Use Disorders

- The study proposes to establish an intervention incorporating PrEP care into the addiction clinic with counseling support and technology based (cell phone app) contingency management to encourage behavior change.
- Methods – Qualitative interviews with women in treatment for substance use disorders, followed by intervention development and pilot testing.
- Funded by the Centers for Disease Control and Prevention (CDC; U01PS005209)
- Principal Investigator: Angela M. Heads, PhD
- Co-Investigators: Joy Schmitz, PhD; Diana Santa Maria, PhD; Rob Suchting, PhD; Mandy Hill, DrPH; Luba Yammie, PhD

The Study Population

- Ethnic-minority women continue to bear a disproportionate burden of health and social consequences of HIV.
- Women with problematic substance use are at increased risk
 - Injection drug use
 - Behaviors and situations that place them at risk
 - Condomless sex with partners of unknown status
 - Exchange sex

Aim 1: Elicit information on knowledge and attitudes about PrEP use and obtain feedback about the potential design of the integrated bio-behavioral intervention from women undergoing treatment for SUD who engage in high-risk sexual behaviors.

- Individual semi-structured interviews
- Approximately 25 women will participate in the interviews, continuing the interview process until saturation is achieved.
- Interview guide will be informed by IMB constructs
- Feedback on potential design of a behavioral intervention to be integrated within the addiction clinic treatment setting.

Intervention Framework - IMB

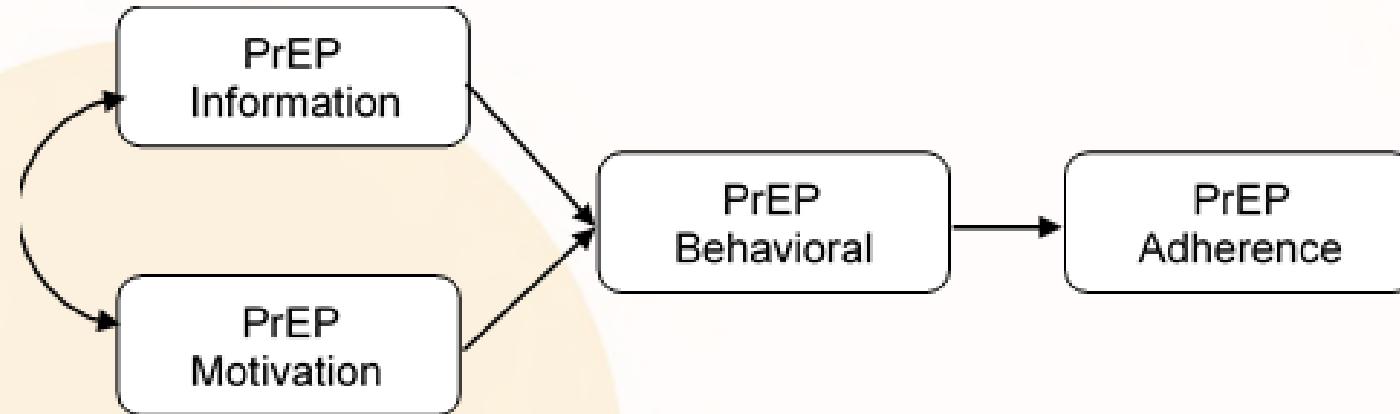


Figure 2. The IMB Model of PrEP Adherence (adapted from Fisher et al.)

Aim 2: Develop an integrated intervention to promote PrEP uptake and adherence in women undergoing treatment for SUD who are at high risk for HIV.

- Qualitative Data Analysis
- Develop and refine intervention
- Anticipated components
 - Information on PrEP including the purpose, how it works, eligibility, etc.
 - Motivational enhancement to include motivational counseling and app-based contingency management
 - Behavioral Skills including medication reminders, side effect management, identifying supportive peers, deciding whether, with whom, and how to communicate about PrEP

Aim 3: Assess initial efficacy, feasibility, and acceptability of the integrated intervention.

- Randomized trial with n=60 women
- Usual care – continued substance use treatment with referral to community partner – AIDS Foundation, Houston
- Intervention – based on feedback from aim 1 and developed in aim 2

Hypotheses for Aim 3

- Hypothesis 3a: Compared to standard treatment, the integrated intervention will result in a greater proportion of participants who fill their first PrEP prescription.
- Hypothesis 3b (primary hypothesis): Compared to standard treatment, the integrated intervention will result in greater adherence to PrEP in those who filled their prescriptions (self-report and lab verified urine tenofovir concentrations).
- Hypothesis 3c: The integrated intervention will be feasible and acceptable by women as demonstrated by enrollment rate, study retention, session attendance, and participant satisfaction scores.

Intervention Development: Ongoing Research Development and Pilot Testing a PrEP Uptake and Adherence Intervention for Women with Trauma-Related Mental Health Conditions

- The overarching goal of this research is to establish a mental health clinic-based behavioral intervention for increasing PrEP uptake and adherence among women with trauma related conditions who have risks for HIV.
- The Trauma and Resilience Center and the Center for Neurobehavioral Research on Addiction (UTHealth Houston McGovern Medical School) Houston TX
- AIDS Foundation Houston
- Funded by National Institutes for Drug Abuse (R34DA055496)

Principal Investigators:

Angela M. Heads, PhD & Ron Acierno, PhD

Co-Investigators:

- Rob Suchting, PhD
- Mandy Hill, DrPH
- Luba Yammie, PhD

Aim 1: Collect information on knowledge and attitudes about PrEP and obtain feedback about the potential design of the integrated behavioral intervention from women with trauma-related conditions who are at risk for HIV and their providers. **(Completed)**

- Individual semi-structured interviews
- Approximately 25 women and 10 providers.
- Interview guide informed by IMB constructs

Aim 2: Develop an integrated behavioral intervention to promote PrEP uptake and adherence in women undergoing treatment for trauma-related conditions who are at risk for HIV. **(In Progress)**

- Qualitative Data Analysis
- Develop and refine intervention
- Anticipated components
 - Information on PrEP including the purpose, how it works, eligibility, etc.
 - Motivational enhancement to include motivational counseling and app-based messaging
 - Behavioral Skills including medication reminders, side effect management, identifying supportive peers, deciding whether, with whom, and how to communicate about PrEP

Aim 3: Assess initial efficacy, feasibility, and acceptability of the integrated intervention.

- Randomized trial n=60
- Usual care – continued mental health treatment with referral to community based PrEP provider
- Intervention – based on feedback from aim 1 and developed in aim 2

Comments from women regarding HIV prevention and PrEP

- Brief thematic analysis for PrEP knowledge, perceived risk, and opinions on who should use PrEP
- N=5
- Only 1 reported having heard of PrEP before the interview
- All 5 reported low perceived risk for HIV
 - “at the moment. Not very [concerned]. I've acted out sexually, you know, in just bad binges.”
 - “I'm not really very sexually active, but ... I just got tested.”

Quotes from women regarding PrEP

- Community not knowledgeable about PrEP:
 - “The only thing I think that people are actually aware of is the fact that it is a pill that prevents HIV.”
- There is a stigma associated with PrEP use:
 - Others think that ...“they have to be very sexually active... that they have more than one partner.”
 - “They mainly say homosexuals. They have multiple partners.”
- Concerns that using PrEP would lead to people being less safe:
 - I think they give them a false protection, and they will stop doing the main things they need to do to protect themselves.

Summary

- There are disparities in access to and engagement in effective HIV prevention strategies
- It is necessary to consider barriers and facilitators to engaging in existing HIV prevention strategies
- Mental health and substance use disorders treatment providers are in a unique position to access populations that have not been reached by existing efforts
- Tailored interventions designed to increase trust on an individual level may be promising but more needs to be done on the system level to reduce disparities in access and disparities in outcomes

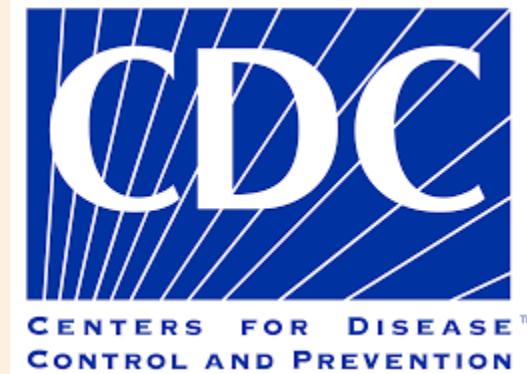
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Advancing Addiction Science



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- Diane Santa Maria, PhD
- Joy Schmitz, PhD
- Rob Suchting, PhD
- Sarah Tonkin, MA
- Erin “Charli” Washington, MA
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Questions?

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