Update on Current Research and Rollout of PrEP for Women in the US

Featuring
- Dr. Sharon Hillier, University of Pittsburgh Medicine, MTN
- Dr. Sally Hodder, Rutgers NJ Medical School, HPTN
- Dr. Dawn Smith, US Centers for Disease Control

This is the first in a series of webinars coordinated by partners in the US Women and PrEP Working Group – learn more at www.prepwatch.org/#women.
Coalition of more than 50 women from leading AIDS and women’s health organizations—formed in March 2012—to build a common understanding of what PrEP as a new HIV prevention tool could mean for women in the United States.

Focus on:
- How will PrEP be used for HIV prevention by women in the US?
- What data are needed regarding PrEP’s acceptability and effectiveness among those women?
- How will PrEP be promoted, made accessible and financed for use by US women?

Recent work includes a statement calling for a coordinated, timely and adequately funded US government response to PrEP for women that involves the full participation and leadership of individuals and communities most in need of effective, comprehensive HIV prevention.

For more visit www.prepwatch.org/#women and if interested in joining the group please send your request to avac@avac.org.
## PrEP Study Results

<table>
<thead>
<tr>
<th>Study</th>
<th>Population</th>
<th>N</th>
<th>Treatment(s)</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>iPrEx</td>
<td>Gay men, other MSM, transgender women</td>
<td>2499</td>
<td>Daily oral Truvada</td>
<td>44% efficacy</td>
</tr>
<tr>
<td>Brazil, Ecuador, Peru,</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>South Africa, Thailand, US</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TDF2 Study</td>
<td>Men and women</td>
<td>1200</td>
<td>Daily oral Truvada</td>
<td>62% efficacy</td>
</tr>
<tr>
<td>Botswana</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Partners PrEP Study</td>
<td>Serodiscordant couples</td>
<td>4758</td>
<td>Daily oral Tenofovir, Daily</td>
<td>67% efficacy</td>
</tr>
<tr>
<td>Kenya, Uganda</td>
<td></td>
<td></td>
<td>oral Truvada, Daily oral</td>
<td>75% efficacy</td>
</tr>
<tr>
<td>Bangkok Tenofovir Study</td>
<td>IDUs</td>
<td>2400</td>
<td>Daily oral Tenofovir</td>
<td>49% efficacy</td>
</tr>
<tr>
<td>Thailand</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FEM-PrEP Study</td>
<td>Women</td>
<td>1950</td>
<td>Daily oral Truvada</td>
<td>No effect</td>
</tr>
<tr>
<td>Kenya, South Africa, Tanzania</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VOICE</td>
<td>Women</td>
<td>5029</td>
<td>Daily oral Tenofovir, Daily</td>
<td>No effect</td>
</tr>
<tr>
<td>South Africa, Uganda,</td>
<td></td>
<td></td>
<td>oral Truvada, Daily vaginal</td>
<td></td>
</tr>
<tr>
<td>Zimbabwe</td>
<td></td>
<td></td>
<td>Tenofovir TFV gel</td>
<td></td>
</tr>
</tbody>
</table>
## Ongoing and Planned PrEP Demonstration Projects and Trials in Women, August 2013

<table>
<thead>
<tr>
<th>Trial/project</th>
<th>Location</th>
<th>Population</th>
<th>Sponsor/funder</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Partners Demo Project</td>
<td>Kenya, Uganda</td>
<td>Serodiscordant couples</td>
<td>Scientists from Kenya, Uganda and the US; funded by NIMH/NIH, USAID and BMGF</td>
<td>Ongoing; results expected in 2016.</td>
</tr>
<tr>
<td>LVCT and SWOP</td>
<td>Kenya</td>
<td>Young women, female sex workers, MSM</td>
<td>National partners, O'Neill Institute, LSHTM, Imperial College, UNAIDS and WHO; funded by BMGF</td>
<td>In development</td>
</tr>
<tr>
<td>Nigerian National Agency for the Control of AIDS</td>
<td>Nigeria</td>
<td>Serodiscordant couples</td>
<td></td>
<td>In development</td>
</tr>
<tr>
<td>Wits Reproductive Health and HIV Institute</td>
<td>South Africa</td>
<td>Female sex workers</td>
<td>National partners, O'Neill Institute, LSHTM, Imperial College, UNAIDS and WHO; funded by BMGF</td>
<td>In development</td>
</tr>
<tr>
<td>Durbar (DMSC) and Ashodaya Samithi</td>
<td>India</td>
<td>Female and transgender sex workers</td>
<td></td>
<td>In development</td>
</tr>
<tr>
<td>Choices For Adolescent Methods Of Prevention In South Africa (CHAMPS)</td>
<td>South Africa</td>
<td>Heterosexual men and women</td>
<td>NIAID</td>
<td>Ongoing; results expected June 2015.</td>
</tr>
<tr>
<td>Victorian PrEP Demo Project</td>
<td>Australia</td>
<td>At risk-population</td>
<td>Victorian AIDS Council/Gay Men’s Health; funded by Victorian Government</td>
<td>In development</td>
</tr>
<tr>
<td>CDC Foundation Demo Project</td>
<td>US</td>
<td>MSM and heterosexual women</td>
<td>Funding pending</td>
<td>In development</td>
</tr>
<tr>
<td>CDC 494 (TDF2 Follow-Up)</td>
<td>Botswana</td>
<td>Heterosexual men and women</td>
<td>Botswana MOH, CDC, Gilead</td>
<td>Ongoing; results expected in Nov. 2013.</td>
</tr>
</tbody>
</table>

For a complete list of ongoing and planned PrEP demonstration projects and trials in all populations see [www.avac.org/prepdemo](http://www.avac.org/prepdemo)
Discussion

- Unmute your line by pressing *7 and ask it on the line (remute your line by pressing *6)
- Enter it into the chat box in ReadyTalk
- Email your question to avac@avac.org
- Tweet @hivpxresearch

*****

Webinar recording will be available at www.avac.org/meetingreports and www.prepwatch.org

Visit www.prepwatch.org/#women for more on the working group and info on upcoming webinars
Join us for next month’s webinar

**PrEP-ception: sero-discordant couples using PrEP to reduce HIV transmission risk while achieving pregnancy**

Monday, October 28, 2013
11:00 AM – 12:30 PM EDT

- **Introduction: Overview of PrEP and the Role of the Working Group**
  - Dazon Dixon Diallo, MPH, Founder and President, SisterLove, Inc.

- **Defining the Need for Safer Conception Options: The Role of “PrEP-ception”**
  - Shannon Weber, MSW, Director, Perinatal HIV Hotline, Bay Area Perinatal AIDS Center

- **A Framework for the Integration of PrEP**
  - Erika Arron, CRN, Drexel University College of Medicine, Division of Infectious Diseases and HIV Medicine

- **One Mom’s Story**
  - Poppy

- **Questions and Discussion**
  - Dazon Dixon Diallo, Moderator

Register at [www.prepwatch.org/uswomenwebinars](http://www.prepwatch.org/uswomenwebinars)
VOICE Results: Questions and Implications

Sharon Hillier
Microbicide Trials Network

Ready, Set, PrEP: Update on Current Research and Rollout of PrEP for Women in the US (webinar)
September 16, 2013
Overview

- VOICE results recap
- Questions still to be answered
- What does VOICE say about women and PrEP?
- Summary and conclusions
Which is effective?
Is each safe?
Which will women use?
Women enrolled between Sept 2009 – June 2011

- **UGANDA**: 322 participants
  - Makerere Univ./JHU, Kampala: 1 site

- **ZIMBABWE**: 630 participants
  - UZ-UCSF, Harare: 1 site
  - UZ-UCSF, Chitungwiza: 2 sites

- **SOUTH AFRICA**: 4,077 participants
  - Durban
    - Medical Research Council: 7 sites
    - CAPRISA eThekwini: 1 site
  - Johannesburg
    - WRHI: 1 site
    - PHRU Soweto: 1 site
  - Klerksdorp
    - Aurum Institute: 1 site

Half of the women were under 25, 80% were unmarried
How was the study done?

Women were randomized to 1 of 5 study product groups and asked to use assigned product daily

Standard HIV prevention package provided throughout study

VOICE stopped testing oral tenofovir and tenofovir gel early but continued testing daily use of Truvada until scheduled end of study

VOICE stopped testing oral tenofovir tablets after a Sept. 2011 review of study data found them not effective in VOICE.

VOICE stopped testing tenofovir gel after a Nov. 2011 review of study data found it not effective in VOICE.
What VOICE found

- Daily approach – gel or tablet – was not right for the population of women in VOICE
  - No product was effective
  - Most participants did not use the products

- Younger (under 25), unmarried women were least likely to use the products and the most likely to acquire HIV

- HIV incidence was 5.7% – twice what we estimated – and nearly 10% at some South African sites

- Study retention was very high (91%)

- No safety concerns with the products
HIV seroconversion endpoints*

334 HIV acquisition events for ITT analysis

312 HIV acquisition events in primary study (mITT) analysis

22 HIV infected at enrollment (PCR+)

Overall HIV incidence 5.7%

* Includes data through 12/6/2012
**No significant difference in efficacy**

<table>
<thead>
<tr>
<th></th>
<th>Tenofovir Tablet*</th>
<th>Oral Placebo*</th>
<th>Truvada Tablet</th>
<th>Oral Placebo</th>
<th>Tenofovir Gel</th>
<th>Gel Placebo</th>
</tr>
</thead>
<tbody>
<tr>
<td>Person-yrs</td>
<td>823</td>
<td>837</td>
<td>1285</td>
<td>1306</td>
<td>1026</td>
<td>1030</td>
</tr>
<tr>
<td>No. of HIV infections</td>
<td>52</td>
<td>35</td>
<td>61</td>
<td>60</td>
<td>61</td>
<td>70</td>
</tr>
<tr>
<td>HIV incidence per 100 p-y</td>
<td>6.3 [4.7, 8.3]</td>
<td>4.2 [2.9, 5.8]</td>
<td>4.7 [3.6, 6.1]</td>
<td>4.6 [3.5, 5.9]</td>
<td>5.9 [4.5, 7.6]</td>
<td>6.8 [5.3, 8.6]</td>
</tr>
</tbody>
</table>

*Censored on date when sites were informed to take women off of tenofovir and placebo tenofovir tablets*
Results for product adherence

Analyzed blood samples from 773 participants (including 185 women who acquired HIV) for presence of drug

- Adherence to product use was low across all groups
  - Drug detected in less than 1/3 of samples from women in Truvada and oral tenofovir groups
  - Drug detected in less than 1/4 of samples from women in tenofovir gel group
  - More than 50% of women never had any drug detected

- Adherence estimated to be 90% based on what participants reported and counts of unused applicators and leftover pills
## Adherence from 3 Different Measures

<table>
<thead>
<tr>
<th></th>
<th>Truvada Tablet</th>
<th>Tenofovir Tablet</th>
<th>Tenofovir Gel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Returned Pill or Applicator Counts</td>
<td>92%</td>
<td>87%</td>
<td>86%</td>
</tr>
<tr>
<td>Self Report</td>
<td>91%</td>
<td>90%</td>
<td>90%</td>
</tr>
<tr>
<td>Drug Detected in Blood</td>
<td>29%</td>
<td>28%</td>
<td>23%</td>
</tr>
<tr>
<td>Percentage of women with no drug detected in <em>any</em> sample</td>
<td>50%</td>
<td>58%</td>
<td>55%</td>
</tr>
</tbody>
</table>
Young, unmarried women

Compared to older, married women in VOICE, those under age 25 and not married were:

- Least likely to use study product
  - Drug was detected in 21% of young, unmarried women vs. 54% of the older, married women in the Truvada group

- Most likely to acquire HIV
  - HIV incidence was 8.8% vs. 0.8%
  - Overall HIV incidence in study was 5.7%
Social Science/ Behavioral Research

- Social/behavioral scientists engaged at every step
- Oversaw modification of counseling approach during VOICE – included client-centered motivational counseling
- Introduced community-centered, ethnographic study: VOICE C
  - Conducted at the WRHI trial site in Johannesburg
  - Looked at factors and beliefs within women’s communities, social groups and households that may have influenced ability and willingness to use products
  - Involved VOICE participants, male partners, CAB members and community stakeholders
Lots of Questions!?!?

- Why did women join VOICE and attend all study visits but not use the products?
  - Did they participate for other reasons, e.g., health care services and HIV testing the study provides?
- Why did they go to great lengths to hide non-use?
- They live where incidence is very high – don’t they see themselves at risk?
- Why didn’t they or couldn’t they use the products?
  - Was there stigma with ARV-based products?
- Even after being told that other trials found regular use effective, they still didn’t use the products – why not?
  - Will they use other prevention products? Especially ones that may be easier to use?
Seeking Answers: VOICE D

- Behavioral sub-study launched after VOICE – still ongoing
- Involves former VOICE participants at 5 sites in Uganda, Zimbabwe and South Africa
- Aims to better understand women’s actual and reported use of study products and sexual behavior during VOICE
- Part 1 (completed) – 88 women after they exited VOICE
  - In-depth interviews focused on perceptions and understanding of risk behaviors, e.g., anal sex
- Part 2 – 108-144 women who were on active product
  - Results of their own blood tests (drug levels) to be used as ice-breaker for in-depth interviews and focus group discussions to get to reasons for non-use
Answering other questions

- More information about who used products
  - Blood samples were tested for drug in only 15% of the participants
  - Now testing every sample collected from all 5,029 women – 160,000 plasma samples alone
- Effects of oral products on bone health
  - VOICE-B results awaiting additional data on drug levels and product use
- Frequency of drug resistance
- Effects of tenofovir gel on HSV-2 acquisition
Truvada and women?

- **Effective** in Partners PrEP
  - Women were older (mean age 36)
  - All in committed relationship with a partner they knew was HIV-positive; both partners aware of HIV risk

- **Effective** in TDF2
  - Relatively small study
  - Effect size in women (49.4% in sub-analysis) not statistically significant-- (wide CI: -0.217% to 80.8%)

- **Not effective** in FEM-PrEP
  - Similar population to VOICE - 59% under age 25
  - 70% perceived themselves at little or no risk of HIV

- **Not effective** in VOICE
## Truvada and women?

<table>
<thead>
<tr>
<th></th>
<th>Avg # women per arm</th>
<th>Avg # woman yrs follow-up per arm</th>
<th>Women on active product (Truvada)</th>
<th>Women yrs follow-up on active product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Partners PrEP</td>
<td>595</td>
<td>920</td>
<td>873</td>
<td>1,271</td>
</tr>
<tr>
<td>TDF2</td>
<td>278</td>
<td>351</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FEM-PrEP</td>
<td>1,060</td>
<td>703</td>
<td>2,066</td>
<td>1,829</td>
</tr>
<tr>
<td>VOICE</td>
<td>1,006</td>
<td>1,126</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
A few take-home messages

- Even the most effective product will do no good if it’s not used (or not used correctly)
  - The women who need safe and effective HIV prevention methods must also be willing and able to use them – and they must actually use them

- Low adherence in a clinical trial can provide important clues about potential “real world” use
  - Is there stigma with using an ARV product for prevention?
  - Is daily use asking too much?
Summary and Key Points

- Results of VOICE are clear: daily use (gel or tablet) was not right approach for the women in VOICE
- Young, unmarried women used product the least – and acquired HIV the most
- Hope to understand why women didn’t use products
- VOICE is consistent with FEM-PrEP results for Truvada – together, send very strong message

- Need products women will use
  - Exploring long-acting methods: ASPIRE and The Ring Study of monthly dapivirine ring
  - Next generation: Products that also provide contraception
More to come....

- Primary results expected to be published soon
- VOICE C results to be reported before end of 2013
- VOICE D expected to be completed by end of 2013 and report results mid 2014
- VOICE B results (bone health) available in 2014
- Complete analysis of all drug plasma levels in VOICE by ????
Acknowledgements

We are grateful to the women who participated in VOICE, to the community and family members who supported their participation, and to everyone who continues to support HIV prevention research so that someday we may all live in an AIDS-free world.

MTN is funded by NIAID (AI068633), NICHD and NIMH, all of the U.S. National Institutes of Health
PrEP Research Agenda in the HPTN

Sally L. Hodder, MD

SEPTEMBER 16, 2013
HIV Incidence Among US Women HPTN 064: The Women’s HIV SeroIncidence Study (ISIS)
ISIS Objectives

• Accurately estimate new HIV incidence in a group of women at risk for HIV in the US
• Evaluate new lab methods for identification of new HIV infections
• Describe factors in participants lives that impacted HIV risks
  – For example, partner risks, alcohol use, financial factors, condom use
ISIS Inclusion Criteria

- Self identifies as a woman ages 18-44 years
- Residence in area with relatively high rates of HIV prevalence and poverty
- Unprotected sex with a man during the previous 6 months
- AND at least one additional risk factor
Study Sites

- Bronx and Harlem, NY
- North and South Newark, NJ
- Baltimore, MD
- Washington, DC
- Durham and Raleigh, NC
- Decatur and Atlanta, GA

10 distinct communities within 6 geographic locations
Qualitative data collected in four communities
## ISIS Cohort Baseline Characteristics n=2,099

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Percentage^a</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Median Age</strong></td>
<td>29</td>
<td>[23 – 38]</td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>1851</td>
<td>88.2</td>
</tr>
<tr>
<td><strong>Hispanic Ethnicity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>245</td>
<td>12</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; high school graduation</td>
<td>777</td>
<td>37.0</td>
</tr>
<tr>
<td><strong>Marital Status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single/Divorced/Widowed</td>
<td>1258</td>
<td>59.9</td>
</tr>
<tr>
<td>Married/Living with partner</td>
<td>638</td>
<td>30.4</td>
</tr>
<tr>
<td><strong>Annual Household Income</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;$10,000</td>
<td>932</td>
<td>44.4</td>
</tr>
<tr>
<td>$10,000 - $20,000</td>
<td>225</td>
<td>10.7</td>
</tr>
<tr>
<td>&gt;$20,000</td>
<td>197</td>
<td>9.4</td>
</tr>
<tr>
<td>Unknown</td>
<td>745</td>
<td>35.5</td>
</tr>
<tr>
<td><strong>Food Insecurity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concerns for self and/or family</td>
<td>971</td>
<td>46</td>
</tr>
</tbody>
</table>

^a Number and percentage shown for all variables except age which shows median, interquartile range.
# Reported Characteristics at Baseline (all risk factors within 6 months)

<table>
<thead>
<tr>
<th>FACTOR</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; Monthly binge drinking &gt; 4 drinks on one occasion</td>
<td>39</td>
</tr>
<tr>
<td>Intravenous drug use</td>
<td>4</td>
</tr>
<tr>
<td>Exchange sex for commodities</td>
<td>37</td>
</tr>
<tr>
<td>Unknown HIV status of last vaginal sex partner</td>
<td>41</td>
</tr>
<tr>
<td>Anal sex</td>
<td>40</td>
</tr>
<tr>
<td>Condom at last vaginal sex</td>
<td>18</td>
</tr>
<tr>
<td>Condom at last anal sex</td>
<td>18</td>
</tr>
</tbody>
</table>
HIV Prevalence and Incidence in Context

- Thirty-two women (1.5%) entered the study unaware of their HIV infection, suggesting that testing programs must improve coverage.

- Annual incidence of 0.32% is more than 6 times the CDC estimated national incidence for similarly aged black women.
Univariate Analysis of Potential Factors Associated with HIV Infection

<table>
<thead>
<tr>
<th>Participant Risk Factors</th>
<th>Prevalent HIV (n=30)</th>
<th>Incident HIV (n=8)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Substance Use(^a)</td>
<td>2.52 (1.22, 5.21)(^b)</td>
<td>0.57 (0.06, 3.18)</td>
</tr>
<tr>
<td>Age (27-33 vs. 18-26)</td>
<td>5.83 (1.22, 27.96)(^b)</td>
<td>0.84 (0.08, 5.89)</td>
</tr>
<tr>
<td>Age (34+ vs. 18-26)</td>
<td>11.54 (2.71, 49.05)(^b)</td>
<td>0.57 (0.05, 3.94)</td>
</tr>
<tr>
<td>HIV Diagnosis of partner</td>
<td>8.19 (2.64, 25.42)(^b)</td>
<td>0.0 (0.0, 47.90)</td>
</tr>
</tbody>
</table>

\(^a\) Within the previous 6 months. \(^b\) \(p<0.05\)
HIV Combination Prevention

- Male Circumcision
- HIV Counseling and Testing
- Treatment for Prevention
- Treatment of STIs
- Behavioral Interventions
- Prevention for Positives
- Needle Exchange
- PrEP
- Cash Incentives
- Condoms
- Microbicides
- Vaccines
HIV Combination Prevention

- Male Circumcision
- HIV Counseling and Testing
- Treatment for Prevention
- Treatment of STIs
- Behavioral Interventions
- Prevention for Positives
- Needle Exchange
- PrEP
- Cash Incentives
- Condoms
- Microbicides
- Vaccines
US Women are Being Prescribed PrEP

• Between January 2011 and March 2013, pharmacy data from ~55% US pharmacies assessed for PrEP prescriptions

• Total of 1,774 subjects were identified as starting TVD for PrEP.
  – 47.7% women

Mera RM et al. ICAAC 2013, Poster H-663a
HPTN PrEP Agenda

- Evaluate the efficacy of an ARV regimen containing new oral drugs (such as maraviroc (MVC) for PrEP
- Develop new agents and new formulations for PrEP including long lasting injectables
- Develop pharmacostatistical models to define the role of new agents for PrEP
HPTN Pre- Exposure Prophylaxis (PrEP) Studies
HPTN 067
The ADAPT Study:
Alternative Dosing to Augment PrEP pill-Taking
Main Study Questions

• How does taking oral Truvada® tablets intermittently compare to taking the tablets daily? Will participants in the intermittent groups:
  – have the same coverage of sex events,
  – need fewer tablets for coverage, and
  – report fewer side effects compared to participants who take their tablets daily?
Study Groups

Truvada taken:
1. Daily
2. Event-driven (before and after sex)
3. Time-driven (2 times a week and a booster after sex)

No more than
• 2 tablets in a 24-hour period
• 7 tablets in a week.
Daily
180 Participants
120 MSM
60 Women

Time Driven
180 Participants
120 MSM
60 Women

Event Driven
180 Participants
120 MSM
60 Women
HPTN 069/ACTG 5305
NEXT-PREP:
Novel Exploration of Therapeutics for PREP

NEXT PrEP
AN HPTN/ACTG STUDY
HPTN 069 Study Groups

• There are 3 active drugs:
  – maraviroc (MVC)
  – emtricitabine (FTC)
  – tenofovir (TDF)

• Study Regimens (3 pills/arm):
  – maraviroc + FTC placebo + TDF placebo
  – maraviroc + emtricitabine + TDF placebo
  – maraviroc + tenofovir + FTC placebo
  – tenofovir + emtricitabine + MVC placebo
**HPTN 069 Endpoints**

**Primary Endpoint:**
- Grade $\geq 3$ toxicities; time to study treatment discontinuation

**Secondary Endpoints:**
- Assess changes in bone mineral density
- Evaluate drug concentrations of in plasma, peripheral blood mononuclear cells (PBMC), rectal tissue and fluid, and cervical tissue and cervicovaginal fluid, in a subset of participants
- Assess adherence as measured by an electronic drug monitoring device (EDM)
- Assess and characterize sexual behavior over time as measured by computer-assisted self-interview (CASI).
- Evaluate the association of drug concentrations with other adherence measures

**Exploratory Objective**
- Determine whether oral PrEP is associated with suppression of HIV replication in colorectal and cervical explants (ex vivo HIV challenge, Tissue Subset).
HPTN 073: PrEP Adherence and Uptake Among BMSM in Three US Cities
HPTN 073 Study Design

- Demonstration project
- Once daily oral emtricitabine 200 mg / tenofovir disoproxil fumarate 300 mg (FTC/TDF)
- Client-centered care coordination (C4)
Main Study Questions

- How willing BMSM are to take PrEP
- How consistently the men who do decide to take PrEP, take it as prescribed
- How the men evaluate the experience of using PrEP, and
- Is it acceptable for local health care facilities to administer client-centered care coordination (C4) along with PrEP to BMSM
Chapel Hill, NC
75 Participants
- 5 PrEP Uptake Interviews
- 5 PrEP Non-Initiator Interviews
- Site Staff C4 Focus Group

Los Angeles, CA
75 Participants
- 5 PrEP Uptake Interviews
- 5 PrEP Non-Initiator Interviews
- Site Staff C4 Focus Group

Washington, DC
75 Participants
- 5 PrEP Uptake Interviews
- 5 PrEP Non-Initiator Interviews
- Site Staff C4 Focus Group
HPTN 076: Injectable Pre-Exposure Prophylaxis (PrEP)
HPTN 076 Main Study Questions

• Is injectable rilpivirine PrEP safe for women?
• Will women find injectable PrEP acceptable for use?
• Is injectable PrEP tolerable for women?
Study in Development

• Total of 132 participants at 4 sites
  – 48 at each international site
  – 18 at each US site

• Injectable PrEP vs injectable placebo
Conclusions

• Existing data suggest that US women are at risk and are actively being prescribed antiretroviral therapy for prophylaxis

• HPTN research agenda assesses novel PrEP agents and administration strategies

• Data to be generated from the HPTN addresses the need for increased PrEP options
THANK YOU

Wafaa El-Sadr, MD, MPH
Jonathan Lucas, MPH
Niru Sista, PhD

Sponsors
HPTN Investigators and Study Staff
Participants of past and current HPTN studies
PrEP Update:
The science, new tools, and next steps

Dawn K. Smith MD, MS, MPH
Division of HIV/AIDS Prevention, CDC
US Women & PrEP WG Webinar
16 September 2013

“The findings and conclusions in this presentation have not been formally disseminated by the CDC and should not be construed to represent any agency determination or policy”
# PrEP Efficacy by Adherence

<table>
<thead>
<tr>
<th>Intervention</th>
<th>mITT</th>
<th>Self-report, diary, or pill count</th>
<th>Drug detected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male condom (HET)</td>
<td>-</td>
<td>80% (always vs never)</td>
<td>&lt;10% (sometimes vs never)</td>
</tr>
<tr>
<td>PrEP – TDF/FTC (iPrEx, MSM)</td>
<td>44%</td>
<td>73% (&gt;90% self-report+pill count)</td>
<td>50% (&gt;50% self report+ pill count)</td>
</tr>
<tr>
<td>PrEP – TDF/FTC (Partners PrEP, HET)</td>
<td>75%</td>
<td>100% (&gt;80% pill count)</td>
<td>-</td>
</tr>
<tr>
<td>PrEP – TDF (BTS)</td>
<td>49%</td>
<td>56% (&gt;71% diary)</td>
<td>-</td>
</tr>
</tbody>
</table>

**Sources:**
Relative risk reduction in acquiring HIV infection (compared with placebo) based on plasma TFV concentrations (Partners PrEP)

- Never Measurable: -6.5
- Sometimes Measurable: 58.9
- Always Measurable: 93.9
- Overall: 75.1

TVF level
Resistance, ART, and PrEP

Source: Abbas UL et al. JID 2013;208:224–34.
Implementation Science

- Adoption
- Diffusion (passive)
- Implementation (active)
- Institutionalization (sustainability)
Uptake of ZDV for perinatal prevention
(in 18 states with HIV surveillance)

Source: Lindegren et al., JAMA 1999; 282:531-38
PrEP Cascade

**Patients**

1. At risk for HIV infection
2. Identified as PrEP candidate
3. Interested in PrEP
4. Linked to PrEP program
5. Initiated PrEP
6. Retained in PrEP program
7. Achieve and maintain medication adherence

**Providers**

1. Providing health care to high risk populations
2. Educated about PrEP
3. Willing to provide PrEP
Evidence of PrEP Use
HIV Care Providers, mid-2011

• 78% had read Interim Guidance for MSM
• 43% had patients who requested PrEP
• **19% had prescribed PrEP, of those**
  – 78% for MSM    31% for MSW    28% for WSM
  – 83% prescribed TDF/FTC
  – 92% documented initial HIV-negative status
  – 25% did not test for acute HIV infection-if symptomatic
  – 17% did not confirm ongoing risk behaviors

N=189, web survey of members of AAHIVM
Source: Maznavi et al., IDSA, 2011
Estimating PrEP Uptake

• **3,000+** patients in US PrEP post-approval studies 2013-2014

• **Gilead analysis:**
  – Retail prescriptions for ~ 55% of US pharmacies, claims data
  – PrEP prescribers in ~700 US cities, 49 states
    • 31% family practice and internal medicine
    • 17% non-physician prescribers (NP and PA)
    • 14% emergency medicine
    • 12% infectious disease
    • 37% also prescribed Truvada for HIV treatment
  – Prescriptions increasing 2011-2013
    • 13.6% were for persons under age 25 years
    • 47.7% were for women
  – In 2013, anticipated as many as 2545 PrEP prescriptions

Source: Levin J, et al. ICAAC 2013
Tools for implementation of PrEP in clinical practice

- PrEP Guidelines
  - Interim guidance
  - PHS guidelines
  - Local protocols
- Risk screening tools (for MSM, IDU, HRH, and HDC)
- Local prevalence data
  - Health department reports
  - www.AIDSVue.org
- Brief risk counseling protocols
- Billing codes for PrEP-related care
PrEP Patient Assistance Program

Statement of Medical Necessity for Financially Needy Applicants. To the best of my knowledge, this applicant has no coverage (including Medicaid or other public programs) for TRUVADA. I certify that the medication(s) listed above are medically indicated for this applicant and that I will be supervising the applicant’s treatment. I certify that I am prescribing TRUVADA for PrEP as part of a risk reduction strategy for HIV prevention for this applicant. I certify that the applicant has been tested for HIV infection and found to be HIV negative, and regular HIV testing will be conducted as part of the applicant’s care plan. As part of my applicant’s eligibility, I agree to periodically verify continued use of Gilead medication and resubmit current prescriptions.

SIGN HERE
Prescriber Signature: __________________________ Date: ____________

Applications are considered complete only if they include all of the following:
• Front and Back Pages of Enrollment Form
• Applicant as well as Prescriber Signatures and Dates
• Documentation of Income Sources and Residency
• Copy of Prescription

When complete, FAX application and documentation to: 1-855-330-5478

Gilead Sciences, Inc.
Medication Assistance Program
P.O. Box 13185

Social Security #: ___________ – ___________ – ___________ Date of Birth: _____ / _____ / ______

Primary Contact: __________________________ Relationship: __________________________ Phone Number: __________________________

Applicant Financial Information

Current Annual Household Income: $ ___________ Number in Household (circle one): 1 2 3 4 5 6

Please include current documentation for all sources of income (e.g., tax return, W2, last 2 pay stubs, etc).

☐ Applicant is insured (Please fill out all the applicable insurance information below. Attach copy (front and back) of applicant insurance card.)

☐ Applicant is uninsured (No health insurance through any public or private payer.) Complete “Additional Insurance Information” below.
Next Steps

• With what we know now:
  – Increase awareness and linkage to clinical care for persons who might benefit from PrEP use
  – Increase awareness and training for providers interested in offering PrEP to their patients
  – Increase systematic monitoring of PrEP use and its health impact

• With what we will learn soon:
  – Incorporate lessons learned from OLE and demonstration projects
  – Continue implementation research
  – Continue clinical research
Post-Trial PrEP Studies

Open-Label Extension
- Previous trial participants
- Research consent
- Research staff

“Demonstration Project”
- Community recruits
- Research Consent
- Research staff

“Implementation Pilot”
- Community recruits
- Clinical care consent
- Clinic staff
The findings and conclusions in this presentation have not all been formally disseminated by the CDC and should not be construed to represent any agency determination or policy.