HIV in Transgender Populations: Evidence for Action

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No financial relationships with commercial entities to disclose
Transgender populations

- United States: population data
  - 0.5% (1.1 million) identify as trans
  - Limited access to legal documents

- Europe: gender clinic data
  - Range 0.1 - 0.5%

- Asia: convenience samples
  - Range 0.7 – 2.9%

- Case study: South Asia
  - Estimated 1 - 6 million hijra in India
  - Legal recognition of “third gender”
    eg. Nepal, India, Pakistan, Bangladesh

HIV estimates: transgender men

- Systematic review (2012-2015)
  - 6 U.S. prevalence studies
    - 1 Self-report: 0.4%
    - 5 Laboratory-tested: 0.5% - 4.3% (n=1)
  - 5 non-U.S. prevalence studies
    - 3 Self report: 0.6% - 8.0% (n=2)
    - 2 Laboratory tested: 0 – 2.2%

Yours In Liberation
The Queer Life of Trans Pioneer Lou Sullivan

“...I took a certain pleasure in informing the gender clinic that even though their program told me that I could not live like a gay man, it looks like I’m going to die like one.”
- Lou Sullivan, gay trans activist, 1951-1991

Laboratory Confirmed HIV Prevalence

- Green 2015 (n=30)
- Habarta 2015 (n=2364)
- Reisner 2015 (n=82)
- Peitzmeier 2014 (n=233)
- Reisner 2014 (n=23)
HIV estimates: transgender women

- Global meta-analysis of laboratory-confirmed HIV (2000-11)
  - 39 studies, 15 countries: 19% prevalence, Odds 49-fold higher than general population
  - Prevalence 22% in the U.S. (OR 34); highest among trans women of color

- Systematic review and data synthesis (2012-2015)
  - 49 new studies, exponential increase in research, ongoing burden
  - Estimates range 2% in youth to 45% in sex workers and women of color
  - 3 incidence estimates: 1.2 – 3.6 per 100 person-years

Trans women who have sex with men have the highest HIV burden of any key population

Baral 2013, Poteat 2016
HIV estimates: transgender women (2)

- “MSM” studies in sub-Saharan Africa (6 sites, 4 countries)
  - Up to 23% identified as women
  - Up to 13% as transgender
  - HIV prevalence higher among women/trans in 5 of 6 sites

- Disproportionate burden, even in high burden country: Lesotho example
  - National adult HIV prevalence 23%
    - 27% women, 18% men, 28% MSM
  - HIV in transgender women 60%
## Trans women-specific HIV vulnerabilities

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Estrogen and antiretroviral agents

- No published data available on interactions with 17-beta estradiol or conjugated equine estrogen

- Where interactions with oral contraceptives exist
  - No clinically significant effect on levels of modern ART
  - Some NNRTIs and PIs reduce levels of estrogen

- HIV+ transgender women who believed ART had negative effects on hormones 3 times more likely to take higher than prescribed doses of hormones*

*Deutsch 2015 (preliminary self-report data), DHHS 2015
PrEP and estrogens

- *In vitro* differences in tenofovir (TFV) pharmacokinetics (PK) in presence of exogenous estrogen
  - Creatine kinase (CK) responsible for phosphorylation of TFV in colon tissue
  - Estrogen regulates TFV diphosphate in female reproductive tract cells and CK
  - 100-fold higher TFV diphosphate concentrations in colon vs. vaginal tissue

- It’s feasible that *exogenous estrogen exposure could affect TFV PK in colon tissue*, a critical site for PrEP efficacy among transgender women

**Clinical relevance**
- Should there be different dosing in transgender women on estrogens?

Shen 2014, Lade 2015, Hendrix 2016
PrEP in transgender women (1)

- Many TW meet WHO 2015 PrEP guidelines
  - Incidence > 3 per 100 person-years (p-y)
- Barriers
  - Lack of trans-inclusive marketing
  - Concerns about hormone interactions
  - Medical distrust/avoidance
- Facilitators
  - Trans-competent services
  - Empowerment approach

PrEP in transgender women (2)

- **iPrex**: N=339/2499 (14%) trans women (TW)
- Lack of efficacy: **HR 1.1**
  - TDF detected in **zero** TW at seroconversion
  - **Zero** seroconversions in TW with TDF levels consistent with > 4 pills/week
  - TDF levels not linked to behavioral risk

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<th>Clinical Trials among women</th>
<th>Truvada Adherence</th>
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<td>iPrex (TW only)</td>
<td>18%</td>
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<td>FEM-PrEP</td>
<td>24%</td>
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<td>VOICE</td>
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- Hormone use associated with lower detection of TDF
  - Adherence?
  - Interactions?
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Surgery and fillers for feminization

- **Fillers (17-40%)**
  - Loose fillers (industrial silicone, other substances)
  - Injected into breasts, face, hips, buttocks for feminization
  - *Risk of bloodborne pathogens*, migration, inflammation, emboli, disfigurement, and death

- **Surgery (2-15%)**
  - Breast augmentation, orchiectomy, vaginoplasty, labioplasty, facial feminization, etc.
  - Few transgender women have genital surgery
  - *HIV risk in neovagina is unknown*
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Social/Structural Drivers: Stigma

- Consequences of Stigma
  - Employment discrimination
    - Sex work (15-64%)
  - Housing discrimination
    - Transience, homelessness
  - Violence and Victimization
  - Depression/suicide
  - Substance use

- Impact on partnerships
  - Limited partner pool
  - High risk partners and clients
  - Gender norms
  - Receptive role

Structural factors and Secondary Prevention

Longitudinal Clinic Data on transgender people in U.S.
- Low educational attainment: 63% high school or less
- Poverty: 79.5% below federal poverty level ($15,730 per year for family of 2)
- Housing instability: 26.4% temporary or unstable housing, 22% homeless

Impact on HIV Outcomes
- 400 trans women, 9 SPNS demonstration sites in U.S.

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<th>Structural Factor</th>
<th>Undetectable Viral Load</th>
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<td>Transient</td>
<td>-60%</td>
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<td>Lack transportation</td>
<td>-50%</td>
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<tr>
<td>Healthcare empowerment</td>
<td>+37%</td>
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Chakravarty 2015 (NHPC preliminary, self report data), HRSA 2014 RSR data, Mizuno 2015
Transgender Adults and Adolescents Served RWHAP: Disparities in Viral Suppression, 2014

**Pie Chart:**
- **29.6%** Black/African American
- **24%** Hispanic/Latino*
- **11.7%** Asian
- **0.8%** Native Hawaiian/Pacific Islander
- **0.4%** White
- **53.4%** Multiple races
- **1.7%** American Indian/Alaska Native

**Bar Graph:**
- **81.4%** Viral Suppression for RWHAP Overall
- **74.0%** Viral Suppression for Transgender
- **53.1%** Viral Suppression for 20-24 years
- **53.0%** Viral Suppression for Unstable housing

*HRSA RSR data
Gender affirmation and HIV care

Top 5 Health Concerns of HIV+ trans people, in order
1. Gender-affirming and non-discriminatory care
2. Hormone therapy and side effects
3. Mental health care, including trauma
4. Personal care, eg. nutrition
5. Antiretroviral therapy and side effects

- 400 transgender women (TW) in 9 demonstration sites
  - 48% used hormones within previous 6 months
- If HIV primary care provider was hormone prescriber, TW were three times more likely to:
  - Have an undetectable viral
  - Have an HIV primary care visit in the previous 6 months

Deutsch 2015 (preliminary self-report data presented at NHPC); Positively Trans Survey, n = 157
HIV Prevention Research Agenda

- **In the lab**
  - Investigate potential drug interactions between PrEP and exogenous hormones

- **In the clinic**
  - Identify facilitators of viral suppression, eg. integration of HIV care and gender care

- **In the community**
  - Engage and empower trans people throughout research
  - Include partners and clients

- **In society**
  - Address structural factors that impede access, uptake, and adherence

- **In the design/analysis**
  - Do not conflate TW and MSM
  - Use adequate sample size of TW

“A trans person should be asking the questions, a trans person should be talking about trans issues, education on trans topics. It should be conducted by trans people.”

- Transgender participant (Poteat 2016)
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- International Reference Group on Transgender People and HIV/AIDS

- The multitudes of transgender people who have participated in research studies