GLOBAL HEALTH NEEDS OF TRANSGENDER PEOPLE

Stefan Baral, MD MPH
Acknowledgements

- The transgender men and women across the world who participate in these studies given significant risks and limited personal benefits

- The community groups that make great personal and professional sacrifices to serve the unmet health and advocacy needs of those most marginalized in the HIV response

- Contributions of Ideas and New Data
  - Sari Reisner, Sam Winter, Tonia Poteat, Kevan Whylie, Claire Holland, Ashley Grosso, Paul Semugoma, Chris Beyrer, and others
Transgender Global Disease Burden Systematic Review 2008-2014

- 116 studies
  - 30 countries
  - 95 Definitions of Transgender Persons
  - 981 health-related outcomes
    - Mental health
    - Sexual and reproductive health
    - Substance use
    - Violence/victimization
    - Stigma and Discrimination
    - General Health
Transgender Health Research by Assigned Sex at Birth

Reisner et al, Poteat, Baral., Lancet Special Issue, in press
Global Distribution of Transgender Health Research

What do we know and where?

Reisner et al, Poteat, Baral., Lancet Special Issue, in press
## Population Studies Yielding Prevalence Data for Transgender People

<table>
<thead>
<tr>
<th>Author, Date, country</th>
<th>Sample</th>
<th>Measure</th>
<th>Prevalence Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conron, 2012, USA</td>
<td>28662 Adults</td>
<td>Identification as Transgender</td>
<td>0.5</td>
</tr>
<tr>
<td>Glen and Hurrell, 2012, UK</td>
<td>10039 Adults</td>
<td>Identification as other gender or in another way</td>
<td>0.6</td>
</tr>
<tr>
<td>Clark, 2014, New Zealand</td>
<td>8166 High School Students</td>
<td>Identification as transgender</td>
<td>1.3</td>
</tr>
<tr>
<td>Kuyper and Wijsen, 2014, Netherlands</td>
<td>8064 Adults</td>
<td>Identification gender spectrum</td>
<td>1.1</td>
</tr>
<tr>
<td>Van Caenergen, 2015, Belgium</td>
<td>1832 Adults</td>
<td>Identification gender spectrum</td>
<td>0.7</td>
</tr>
</tbody>
</table>

Winter, et al, Lancet Special Issue, in press
### Global Health Burden: Six Health Outcome Categories in Transgender Health (n=981 Data Points), 2008-2014

<table>
<thead>
<tr>
<th>Health Outcome Category</th>
<th>Number of Data Points (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mental Health</td>
<td>303</td>
</tr>
<tr>
<td>Sexual and Reproductive Health</td>
<td>219</td>
</tr>
<tr>
<td>Substance Use</td>
<td>193</td>
</tr>
<tr>
<td>Violence/Victimization</td>
<td>105</td>
</tr>
<tr>
<td>Stigma/Discrimination</td>
<td>93</td>
</tr>
<tr>
<td>General Health</td>
<td>68</td>
</tr>
</tbody>
</table>

Reisner et al, Poteat, Baral., Lancet Special Issue, in press
Burden of Mental Health among Transgender Youth

- Retrospective Cohort using EMR
- N=180, age 12-29, 2001-2010
- Matches on multiple characteristics to non-transgender youth

Reisner et al., 2015 in J Adolescent Health
### Burden of Mental Health among Transgender Youth

<table>
<thead>
<tr>
<th>Condition</th>
<th>RR (95% CI)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression (DSM-4-TR diagnosis)</td>
<td>3.95 (2.60–5.99)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Anxiety (DSM-4-TR diagnosis)</td>
<td>3.27 (1.80–5.95)</td>
<td>.0001</td>
</tr>
<tr>
<td>Suicide ideation</td>
<td>3.61 (2.17–6.03)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Suicide attempt</td>
<td>3.20 (1.53–6.70)</td>
<td>.002</td>
</tr>
<tr>
<td>Self-harm without lethal intent</td>
<td>4.30 (1.95–9.51)</td>
<td>.0003</td>
</tr>
<tr>
<td>Inpatient mental health services</td>
<td>2.36 (1.33–4.20)</td>
<td>.004</td>
</tr>
<tr>
<td>Outpatient mental health services</td>
<td>4.36 (2.69–7.05)</td>
<td>&lt;.0001</td>
</tr>
</tbody>
</table>

Reisner et al., 2015 in J Adolescent Health
Reisner et al, Poteat, Baral., Lancet Special Issue, in press
## HIV Prevalence among Transgender Women 2001-2011

<table>
<thead>
<tr>
<th>Country</th>
<th>n</th>
<th>HIV prevalence in transgender women (95% CI)</th>
<th>Odds ratio (95% CI)</th>
<th>HIV prevalence in reproductive-age adults</th>
<th>HIV prevalence in reproductive-age males</th>
<th>Proportion of total HIV infections in men</th>
<th>Income level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argentina</td>
<td>931</td>
<td>33.5% (28.3-38.8)</td>
<td>92.4 (80.6-105.8)</td>
<td>0.54%</td>
<td>0.73%</td>
<td>67.3%</td>
<td>M</td>
</tr>
<tr>
<td>Brazil</td>
<td>638</td>
<td>33.1% (26.7-39.4)</td>
<td>85.3 (72.3-100.6)</td>
<td>0.58%</td>
<td>0.68%</td>
<td>59.2%</td>
<td>M</td>
</tr>
<tr>
<td>El Salvador</td>
<td>67</td>
<td>19.4% (0.0-40.9)</td>
<td>23.2 (12.7-42.5)</td>
<td>1.03%</td>
<td>1.42%</td>
<td>65.6%</td>
<td>M</td>
</tr>
<tr>
<td>Peru</td>
<td>450</td>
<td>28.9% (21.1-36.7)</td>
<td>84.7 (69.1-103.9)</td>
<td>0.48%</td>
<td>0.73%</td>
<td>75.3%</td>
<td>M</td>
</tr>
<tr>
<td>Uruguay</td>
<td>260</td>
<td>18.8% (7.9-29.8)</td>
<td>38.3 (28.1-52.3)</td>
<td>0.60%</td>
<td>0.82%</td>
<td>67.7%</td>
<td>M</td>
</tr>
<tr>
<td>Australia</td>
<td>133</td>
<td>4.5% (0.0-21.1)</td>
<td>24.9 (11.0-56.5)</td>
<td>0.19%</td>
<td>0.26%</td>
<td>69.0%</td>
<td>H</td>
</tr>
<tr>
<td>India</td>
<td>135</td>
<td>43.7% (31.0-56.4)</td>
<td>208.0 (148.0-292.3)</td>
<td>0.37%</td>
<td>0.44%</td>
<td>61.7%</td>
<td>M</td>
</tr>
<tr>
<td>Indonesia</td>
<td>1384</td>
<td>26.1% (21.6-30.6)</td>
<td>180.3 (159.9-203.3)</td>
<td>0.20%</td>
<td>0.32%</td>
<td>70.7%</td>
<td>M</td>
</tr>
<tr>
<td>Pakistan</td>
<td>2643</td>
<td>2.2% (0.0-6.0)</td>
<td>21.9 (16.9-28.4)</td>
<td>0.10%</td>
<td>0.14%</td>
<td>70.5%</td>
<td>M</td>
</tr>
<tr>
<td>Thailand</td>
<td>614</td>
<td>12.5% (5.1-19.9)</td>
<td>9.9 (7.8-12.6)</td>
<td>1.43%</td>
<td>1.71%</td>
<td>59.6%</td>
<td>M</td>
</tr>
<tr>
<td>Vietnam</td>
<td>75</td>
<td>6.7% (0.0-28.5)</td>
<td>15.6 (6.3-38.8)</td>
<td>0.45%</td>
<td>0.73%</td>
<td>70.0%</td>
<td>M</td>
</tr>
<tr>
<td>Italy</td>
<td>826</td>
<td>24.5% (18.5-30.4)</td>
<td>65.8 (56.5-77.1)</td>
<td>0.49%</td>
<td>0.65%</td>
<td>65.7%</td>
<td>H</td>
</tr>
<tr>
<td>Netherlands</td>
<td>69</td>
<td>18.8% (0.0-40.1)</td>
<td>81.8 (44.7-149.5)</td>
<td>0.28%</td>
<td>0.39%</td>
<td>68.6%</td>
<td>H</td>
</tr>
<tr>
<td>Spain</td>
<td>136</td>
<td>18.4% (3.2-33.6)</td>
<td>40.9 (26.5-63.1)</td>
<td>0.55%</td>
<td>0.81%</td>
<td>75.4%</td>
<td>H</td>
</tr>
<tr>
<td>USA</td>
<td>2705</td>
<td>21.7% (18.4-25.1)</td>
<td>34.2 (31.2-37.5)</td>
<td>0.81%</td>
<td>1.18%</td>
<td>74.2%</td>
<td>H</td>
</tr>
<tr>
<td><strong>Pooled estimate</strong></td>
<td><strong>11066</strong></td>
<td><strong>19.1% (17.4-20.7)</strong></td>
<td><strong>48.8 (31.2-76.3)</strong></td>
<td><strong>0.44%</strong></td>
<td><strong>0.58%</strong></td>
<td>...</td>
<td>...</td>
</tr>
</tbody>
</table>

*Degrees of freedom=14, heterogeneity $\chi^2=914.7$, $I^2=98.5\%$, test of odds ratio=1, z=16.21, $p=0.0001$. Income level: M=middle-income; H=high-income.*

### Table 1: Meta-analyses of aggregate country data for HIV prevalence in transgender women versus all reproductive age adults, 2000-11
Results

- The pooled global HIV prevalence was 19.1% (95% CI 17.4-20.7)
- In 7,197 transgender women from 10 LMIC, HIV prevalence was 17.7% (95% CI 15.6-19.8)
- In 3,869 transgender women from 5 HIC, HIV prevalence was 21.6% (95% CI 18.8-24.3)
HIV Prevalence Data among transgender women compared to all adults

Baral et al., Lancet Infectious Diseases, 2013
Burden of HIV among Transgender Women

- Pooled OR for HIV infection among transgender women compared to other reproductive people
  - 48.8 (95% CI 31.2-76.3)

Average HIV Prevalence Among Transgender Women by Region

Region (number of studies included)

- North America (n=25)
- Central and South America (n=6)
- Africa (n=0)
- Europe (n=3)
- South and South East Asia (n=6)
- Oceania (n=1)
- Multi-region (n=2)
Transgender Women across Sub-Saharan Africa

- Very rare for people to identify as transgender, but more common to identify as women using two-step gender assessment in studies focused on gay men and other men who have sex with men (MSM)
  - 16% in Burkina Faso
  - 19% in Malawi
  - 25.5% in Swaziland (aOR for HIV 3.96 [1.66-9.43])
  - 8% in Lesotho (p<0.05 for HIV)

Levels of HIV Acquisition and Transmission Risks

HIV Epidemic Stage
Prevalent transmission of HIV in the population

Public Policy
Content and implementation of policies promote or decrease ability to decrease HIV risk

Community
Determines the access to safe and competent prevention, treatment, and care services
Can promote health and well-being or reinforce stigma and discrimination

Social and sexual networks

Individual-Level
Biological or behavioral factors associated with acquisition or transmission risks

Level of Risks

Stage of Epidemic
Public Policy
Community
Network
Individual

The interaction of multilevel risks among Transgender People

- **Structural**
  - Criminalisation of sex work
  - Criminalisation of cross-dressing
  - Legal status of transgender identity
  - Police enforcement
  - Marginalisation and discrimination

- **Interpersonal**
  - TSW community norms
  - Sexual violence
  - Need for intimacy with partner

- **Individual**
  - Mental health problems
  - Low self-efficacy
  - Need for gender validation
  - Substance use

- **Biological**
  - Receptive role in anal sex
  - Use of progestogens
  - Condomless anal sex

- **Legal and cultural**
  - Exclusion from job opportunities
  - Low education level
  - High-risk partner pool
  - Difficulty negotiating condom use
  - Low pay
  - Inconsistent condom use
  - High number of clients
  - HIV prevention as low priority
  - Condomless anal sex
  - High HIV prevalence clients and partners

- **Health services**
  - Poor access to health services
  - Very limited availability of gender-related health care
  - Poor access to prevention information
  - Poor access to prevention methods
  - Abusive or insensitive treatment from healthcare professionals
  - Low uptake of health services
  - Shared needles for hormone injection
  - Poor engagement in care
  - Poor adherence to antiretroviral therapy
  - Late HIV diagnosis
  - Higher HIV viral load
  - Longer duration of STIs
  - Higher risk of ART resistance
  - Condomless anal sex

Poteat et al., The Lancet, 2014
Map of low-income and middle-income countries reporting community level measurements for HIV risk among gay men, other MSM, and Transgender Women, 2000-2014
Specific Results

Transgender Women

- Consistent condom use with a paying partner in India
  - OR 1.9 (95% CI 1.5-2.3) with higher collective efficacy among transgender women

Violence and Fear of Seeking Healthcare among Transgender Women

- 18+ years recruited using RDS in Burkina Faso and Togo
- Chi-square tests used to assess bivariate associations with gender identity
- Generalized structural equation model (GSEM) used to measure associations with violence/abuse and fear of seeking healthcare
  - Depression as mediator

Stahlman et al, Baral, JIAS Supplement: Transgender Health and HIV, 2015
355 (26.2%) identified as a woman though assigned male sex at birth

As compared with self-identified male participants, transgender women were more likely to report

- Depressed mood (38.9% vs. 30.3%, p<0.01)
- Verbal harassment (44.5% vs. 23.5%, p<0.01)
- Physical abuse (31.9% vs. 24.7%, p<0.01)
- Rape (20.6% vs. 8.0%, p<0.01)
- Afraid to seek healthcare (29.3% vs. 18.0%, p<0.01)
Violence and Fear of Seeking Healthcare among Transgender Women

Figure 1. GSEM showing adjusted odds ratios for each pathway

*p<0.05; **p<0.01; Model adjusts for age, education level, and study site location

Stahlman et al, Baral, JIAS Supplement: Transgender Health and HIV, 2015
## Substance Use and Bullying in the US

- **Teen Health and Technology Study**
  - Included 442 transgender 13-18 years old

### Transgender Youth

<table>
<thead>
<tr>
<th></th>
<th>Without Adjusting for Bullying</th>
<th>With Bullying</th>
<th>Proportion of Effect (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Any Use, Past 12 Months</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ever Drink Alcohol</td>
<td>1.45 (1.17, 1.80)**</td>
<td>1.22 (0.98, 1.53)</td>
<td>43.2 (27.1, 59.3)**</td>
</tr>
<tr>
<td>Ever Smoke Cigarettes</td>
<td>1.42 (1.12, 1.81)**</td>
<td>1.22 (0.95, 1.56)</td>
<td>46.8 (24.3, 69.4)**</td>
</tr>
<tr>
<td>Ever Marijuana Use</td>
<td>1.66 (1.30, 2.13)**</td>
<td>1.46 (1.14, 1.89)**</td>
<td>27.7 (15.4, 40.1)**</td>
</tr>
<tr>
<td>Ever Non-Marijuana Illicit Drug Use</td>
<td>1.80 (1.36, 2.37)**</td>
<td>1.48 (1.12, 1.97)**</td>
<td>33.9 (22.1, 45.6)**</td>
</tr>
</tbody>
</table>

| **Regular Use, Past 12 Months** |                                |               |                          |
| Regular Marijuana Use     | 1.66 (1.21, 2.28)**             | 1.48 (1.07, 2.04)* | 26.8 (10.6, 43.0)**      |
| Regular Non-Marijuana Illicit Drug Use | 1.75 (1.20, 2.56)**             | 1.48 (1.01, 2.17)* | 32.9 (15.8, 50.1)**      |

Reference: Reisner et al. 2015 in J Sex Research
## Dedicated HIV Prevention Interventions

### Published Studies

<table>
<thead>
<tr>
<th>Country</th>
<th>Intervention(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peru</td>
<td>Mobile HIV testing</td>
</tr>
<tr>
<td>India (2)**</td>
<td>Community empowerment/combination prevention (include MSM)</td>
</tr>
<tr>
<td>Laos</td>
<td>Condom social marketing</td>
</tr>
<tr>
<td>Thailand</td>
<td>Community-led peer education</td>
</tr>
</tbody>
</table>

### On-going trials (NIH RePORT)

<table>
<thead>
<tr>
<th>Country**</th>
<th>Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>India**</td>
<td>Anti-stigma program for health workers</td>
</tr>
<tr>
<td>Peru</td>
<td>TransPrep: Adherence Intervention</td>
</tr>
</tbody>
</table>

- Disconnect between measured burden of HIV and number of funded studies addressing the needs of transgender people

Poteat et al., The Lancet, 2014
Studies for Transgender Women

- NIH Funded Studies
  - Feasibility study of an anti-stigma intervention among health care providers in Mumbai, India to improve access to HIV services for hijra.
  - Feasibility study of a telemedicine approach to improving engagement in care among transgender women of color in Washington, DC.
  - RCT of the LifeSkills program (a six session, peer-led, group intervention for sexually active transgender women ages 16-24 years) in Boston and Chicago.
  - RCT of T-Talk, a peer-led harm reduction and social support intervention for transgender women in New York City.
  - Pilot RCT of Sheroes, a 5-session group intervention based on gender affirmation in the USA.
Agent-Based Model for Transwomen Sex Workers

2 distinct epidemiologic settings: Lima, Peru and San Francisco, U.S.A

10 year Intervention period

with stable partners

with clients

PrEP

Number of new HIV infections

Years
A=condoms with clients; B=condoms with partners; C=number of commercial transactions; D=PrEP; E=test and treat

Poteat et al., The Lancet, 2014
Improving Delivery of Care

- Early introduction of modules on transgender health in medical education
  - Even short training modules can help if introduced early

- Three themes of models of care in Literature
  - Core leadership role of transgender community
  - Transdisciplinary care to ensure comprehensive services
  - Importance of partnerships with different agencies

- Tools
  - Health Care Equality Index (HRC) – 30 best practices for care
  - Advancing Effective Communication, Cultural Competence Field Guide (TJC)

- Country specific examples: Trans Pulse in Canada, Gender Units in Spain, Borum Model for Transgender Youth in USA

Data Needs to Advance Transgender Health

- Dedicated studies with larger sample sizes
  - Facilitate well-powered statistical analyses

- Longitudinal prospective data
  - Follow-up over time
  - Opportunity for nested sub-studies
  - Intervention studies

- Representation of hard-to-reach subgroups
  - Diverse transgender participants

- Information on treatment and health outcomes
  - HIV alongside other health conditions

Reisner et al, Poteat, Baral., Lancet Special Issue, in press
Transgender Health Studies by Year

Reisner et al, Poteat, Baral., Lancet Special Issue, in press
Key Themes

- **Data Paradox**
  - There is the least amount of data characterizing the needs of transgender people in the most stigmatizing settings
    - Human Rights Imperative to be Counted
    - Encouraging increase in level of focused research on transgender health

- **The world is more similar than it is different**
  - Where studied across the world, communities of transgender people are present or emerging

- Disconnect between epidemiologic data and specifically funded intervention research and dedicated programs