Transgender Health and HIV
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Transgender
• Gender identity which differs from birth sex
• Gender dysphoria
  – Describes a state where the discordance between gender identity and birth sex causes distress
• Cisgender = non-transgender

Gender Identity & Sexual Orientation
• Gender Identity
  – How one self-identifies in the way they live and move through the world
  – Mind
  – Female? Male? Non-binary/genderqueer?
• Gender Expression
  – How one “does” gender
  – Feminine? Masculine? Androgynous?
• Sexual Orientation
  – Multidimensional representation of sexuality

Transgender Terminology
• Transgender (Trans) Man / Trans-masculine
  – Female-to-Male/FTM
  – “Female Assigned at Birth (FAAB)”
• Transgender (Trans) Woman / Trans-feminine
  – “Male-to-Female/MTF”
  – Male Assigned at Birth (MAAB)
• Genderqueer / non-binary / non-conforming
  – Range of identities which lie outside binary
Sexuality intersections with gender

- Lesbian transgender woman
  – Female identity, attracted to women
- Gay transgender man
  – Male identity attracted to men

How many transgender people are there?

<table>
<thead>
<tr>
<th>Study</th>
<th>Year</th>
<th>Country</th>
<th>Age</th>
<th>Race/ethnicity</th>
<th>Transgender identity</th>
<th>Method of calculating prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illinois et al.</td>
<td>2008</td>
<td>USA</td>
<td>15-39</td>
<td>2008</td>
<td>5247</td>
<td>---</td>
</tr>
<tr>
<td>Chicago et al.</td>
<td>2012</td>
<td>USA</td>
<td>18-64</td>
<td>2005</td>
<td>577</td>
<td>---</td>
</tr>
<tr>
<td>Beijing et al.</td>
<td>2014</td>
<td>USA</td>
<td>18-26</td>
<td>2012</td>
<td>176</td>
<td>730</td>
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<tr>
<td>China et al.</td>
<td>2014</td>
<td>New Zealand</td>
<td>High school</td>
<td>2012</td>
<td>175</td>
<td>---</td>
</tr>
</tbody>
</table>

*Deutsche MB. Making it Count: Improving Estimates of the Size of the Transgender and Gender Nonconforming Populations. LGBT Health, in press.*
• Health outcomes for all categories of respondents show the appalling effects of social and economic marginalization, including much higher rates of HIV infection, smoking, drug and alcohol use and suicide attempts than the general population.
• Refusal of care: 19% of our sample reported being refused medical care due to their transgender or gender non-conforming status, with even higher numbers among people of color in the survey.
• Uninformed doctors: 50% of the sample reported having to teach their medical providers about transgender care.
• High HIV rates: Respondents reported over four times the national average of HIV infection, with rates higher among transgender people of color.
• Postponed care: Survey participants reported that when they were sick or injured, many postponed medical care due to discrimination (28%) or inability to afford it (48%).

USTS – Health Care
• 23% avoiding seeing a doctor due to discrimination
• 25% experienced insurance-related barriers due to being transgender
• 33% reported discrimination in the healthcare setting

USTS – Behavioral Health
• 40% lifetime suicide attempt, 7% in past year
• 39% report history of severe psychological distress
• 17% dropped out of school due to harassment
USTS - HIV

- Black – 19%
- Latinx and Native American 4.5%

USTS - Employment

- 30% reported being fired, harassed in the workplace, or denied a promotion due to their transgender status

USTS - Housing

- 30% report homelessness at least once in past – 12% in last year
- 26% avoided a shelter due to fear of being mistreated due to trans status
- 70% of those who stayed in a shelter experienced trans-related discrimination
USTS – Sex Work and Underground Economy

- 20% have participated in underground economy
  - 86% reported mistreatment by police
  - 77% IPV
  - 72% sexually assaulted

- 33% of all Black transgender women and 30% of all multiracial transgender women report police assuming they were sex workers

USTS – Harassment and Violence

- 54% lifetime IPV

- 47% lifetime sexual assault, 10% in last year

- 46% verbally harassed in past year

- 59% avoided a public restroom in past year
  - 32% limited food and drink to avoid need for restroom
  - 8% report resulting UTI or kidney problem in past year

HIV - Epidemiology

Factors which impact HIV risks and outcomes in transgender populations

- Discrimination
- Emotional and physical trauma
- Unstable housing
- Lack of employment protections/options
  - Poverty
- Lack of general legal protections
- High rates of incarceration
  - Survival sex work

Poteat et al; Lancet; Jan 17;385(9964):274-86
• 78% transgender women retained in care vs 80% national average

• 74% HIV treatment cascade among transgender women in San Francisco respondent driven sampling study.
HIV in transgender men

- Very little is known, little data
- Most HIV research in transgender populations is oriented towards transgender women

HIV screening and risk assessment

- Effective risk assessment requires ability to and comfort with obtaining an accurate sexual history
  - Must be conducted in a culturally appropriate manner
    - Use open ended questions that do not make assumptions
  - Should include anatomy-specific sexual behavior
    - Don’t just ask “do you have sex?” ask the how’s and where’s. Penile-anal? Penile-oral? Insertive? Receptive? Has patient had a vaginoplasty?

Engaging transgender people in HIV programs and services

- HIV prevention and treatment interventions and programs should be designed specifically for transgender populations, rather than aggregated with, or adapted from MSM or other populations
  - Adapted interventions fail to address unique structural factors, inequities, and barriers experienced by transgender people
Engaging transgender people in HIV programs and services (continued)

• Trans-inclusive social marketing
• Address community level concerns about interactions between HIV medications and gender affirming hormones
• Ensure services are delivered by a provider who is knowledgeable in transgender health


HIV pre-exposure prophylaxis in transgender women: a subgroup analysis of the iPrEx trial

iPrEx RCT – results of transgender subanalysis

• Intention to treat
  – 11 seroconversions in the intervention group vs 10 in the placebo group

• As treated
  – None of the TGW who seroconverted had protective drug levels at the time of detection

• Random drug levels
  – Trans or woman ID less likely than MSM to have always detected (P=0.04, OR=0.39, 95% CI 0.16 to 0.96)

iPrEx OLE – Results of transgender subanalysis

• 1603 eligible (192 TGW)

• 1225 participated (151 TGW)

• PrEP uptake comparable to MSM
  – (79% vs 76%, p=0.45)

• TGW less time with protective drug concentrations vs MSM
  (17% vs 35%, P<0.001)

• Among all TGW, trend toward fewer having concentrations indicating > 3 tablets/week vs MSM (OR -0.71, 95% CI 0.49 to 1.03, p=0.07).
iPrEx OLE – Results of transgender subanalysis (continued)

- TGW using hormones less likely to have any (OR 0.32, p=0.002) or protective (OR 0.14, P<0.001) drug levels compared to TGW not using hormones

- TGW using hormones less likely to have any (OR 0.41, p=0.003) or protective (OR 0.10, P<0.001) drug levels compared to MSM

- No difference by use of 17-beta estradiol vs synthetic estrogens (p=0.74)

iPrEx OLE – results of transgender subanalysis (continued)

- 2 TGW seroconversions
  - 1 had DBS below limit of detection
  - 1 had DBS < 2 pills/week
HIV – what are the next steps?

- HRSA SPNS initiative just ended – awaiting data
  - 9 demonstration sites: linkage & retention interventions

- PrEP uptake and retention study funded by California HIV/AIDS Research Program
  - 3 projects involving multiple sites in N. and S. CA
  - PK substudy

<table>
<thead>
<tr>
<th>% (n)</th>
<th>Odds ratio (95% CI)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV testing completely accessible</td>
<td>56.9 (117)</td>
<td>1.30</td>
</tr>
<tr>
<td>Transgender MSM</td>
<td>45.5 (88)</td>
<td>0.57 (0.35, 0.93)</td>
</tr>
<tr>
<td>Vaccines completely accessible</td>
<td>54.7 (111)</td>
<td>1.30</td>
</tr>
<tr>
<td>Transgender NMM</td>
<td>58.6 (115)</td>
<td>0.60 (0.38, 1.00)</td>
</tr>
<tr>
<td>Gender-compatible lubricants completely accessible</td>
<td>36.5 (109)</td>
<td>1.30</td>
</tr>
<tr>
<td>Transgender NMM</td>
<td>39.1 (108)</td>
<td>0.65 (0.30, 1.40)</td>
</tr>
</tbody>
</table>

*Matched on age group, region, and HIV status. Bolded values indicate statistical significance at P < 0.05.

Inequalities in access to HIV prevention services for transgender men: results of a global survey of men who have sex with men

Gender Affirming Hormones – Supporting Evidence

- Hormone therapy reduces anxiety, depression and improves social functioning & QOL
  
- Surgery improves global functioning and quality of life
- Regret rates are extremely low
- Malpractice risk effectively non-existent

**Table 2. Prevalence of Inadequate Pap Tests: FTM Transgender and Female Patient Pap Tests**

<table>
<thead>
<tr>
<th></th>
<th>FTM transgender (N=415)</th>
<th>Female (N=7594)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inadequate</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative</td>
<td>45 (10.8%)</td>
<td>97 (1.3%)</td>
</tr>
<tr>
<td>ASCUS</td>
<td>345 (83.1%)</td>
<td>6546 (86.2%)</td>
</tr>
<tr>
<td>ASC-H^3</td>
<td>13 (3.1%)</td>
<td>493 (6.5%)</td>
</tr>
<tr>
<td>Atypical glandular cells</td>
<td>0 (0 %)</td>
<td>6 (0.1%)</td>
</tr>
<tr>
<td>LSIL^2 and LSIL-H^3</td>
<td>12 (2.9%)</td>
<td>435 (5.7%)</td>
</tr>
<tr>
<td>HSIL^3</td>
<td>0 (0 %)</td>
<td>13 (0.2%)</td>
</tr>
<tr>
<td>Total</td>
<td>415 Paps</td>
<td>7594 Paps</td>
</tr>
</tbody>
</table>

**Table 5. Testosterone Therapy and Inadequate Paps Among Transgender Patients**

<table>
<thead>
<tr>
<th></th>
<th>At least one inadequate Pap n/N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No testosterone use</td>
<td>1/22 (4.5%)</td>
</tr>
<tr>
<td>1-6 months testosterone use</td>
<td>1/18 (5.6%)</td>
</tr>
<tr>
<td>6-12 months testosterone use</td>
<td>2/10 (20.0%)</td>
</tr>
<tr>
<td>12+ months testosterone use</td>
<td>34/183 (18.6%)</td>
</tr>
</tbody>
</table>

Gender Affirming Hormones – Supporting Evidence

- Bundling of hormones and other gender affirming procedures may improve participation in other important health care, such as HIV care or smoking cessation.
- Access to gender affirming care, and associated improved gender affirmation and alignment with identity, has been described as a pathway to reduced risk-taking behavior (specifically HIV risk, but can be applicable to other health areas and to self-care and self-efficacy regarding health) in the Model of Gender Affirmation (see next slide)

- Gender affirming procedures, including hormone therapy, genital, chest, and facial surgery, voice procedures, and hair removal are defined as medically necessary by WPATH SOCx7
Feminizing Hormones - Goals

- Development of feminine secondary sex characteristics
- Suppression/minimization of masculine secondary sex characteristics

Feminizing hormones – physical effects

- Breast development
- Feminine redistribution of sub-Q facial and body fat.
- Reduced muscle mass
- Reduced body and (to a lesser extent) facial hair
- Changes in perspiration and odors
- Arrest (and possible reversal) of scalp hair loss

Feminizing hormones – other effects

- Reduced libido and erectile function
- Reduced size of testes, reduced or absent ejaculatory fluid and sperm count
- Changes in emotional and social functioning
  - Effects vary from person to person
  - Avoid projecting stereotypes

Gender Affirmation: A Framework for Conceptualizing Risk
Behavior among Transgender Women of Color

Jae M. Sevelius, Ph.D.

Sex Roles 2013 June 1; 68(11-12): 675–689
Feminizing hormones –

general approach

- Estrogen
  - PO/SL/TD estradiol (not EE), less common IM

- Androgen blocker
  - usually spironolactone

- (Sometimes) a progestagen

Expected effects and time frames

- Factors which predict both extent of and length of time to achieve feminizing effects:
  - Age at start
  - Genetics
  - Body habitus/shape

- Results are individualized and patients should avoid making comparisons to others

- Maintain reasonable expectations
  - Actual results may not meet desired effects

Monitoring “sex specific” labs

- Hemoglobin/hematocrit (“H&H”)
- Creatinine
- Alkaline phosphatase

- All may vary depending on sex hormone milieu
- Transgender women:
  - May retain elevated muscle mass (Creatinine)
  - May retain higher bone mass (Alkaline phosphatase)
  - Do not menstruate (hemoglobin/hematocrit)
  - Modify reference ranges accordingly (see table) (9)

Venous thromboembolism –
mediating factors

- Risk may relate to choice of progestagen (10)
  - Norethindrone and other norpregnanes may confer 4x increased risk
  - Medroxyprogesterone may not increase risk

- Risk may be reduced in setting of 17-beta estradiol tablets by using sublingual route

- Equine estrogens may confer increased risk (1,2)
Venous thromboembolism – data in transgender women

- Studies > 10 years old showing 20 to 40 fold increase involved use of up to 200mcg/day of ethinyl estradiol, and did not control for tobacco use (30,31)
  - These studies are not applicable to modern 17-beta estradiol regimens used in an average risk, non-smoking population
- No increased risk has been observed in a large retrospective sample of Dutch transgender women using 17-beta estradiol (5)

Masculinizing hormones – physical effects

- Development of facial and body hair
- Redistribution of body fat
- Increased muscle mass
- Deepened/masculine voice
- Increased perspiration, change in urine and body odors
- Frontal and temporal hairline recession, possible male-pattern baldness/crown recession
- Clitoral growth

Masculinizing hormones – other effects

- Increased libido
- Vaginal dryness and atrophy
- Cessation of menses
- Infertility/anovulatory state
- Possible changes in emotional and social functioning

Masculinizing hormones – general approach

- Use of one of several forms of parenteral testosterone
  - Dose for complete replacement, not supplementation of low testosterone
- Other adjuncts may include progestagens, 5-alpha reductase inhibitors or aromatase inhibitors
Individualized approach

- Approach each patient individually, to assess their goals and expectations
- Avoid making guarantees of specific effects and time frames
  - General expect major changes in 1st 1-2 years, but can continue for as many as 5 years (11)
- Age at start, body habitus/shape, and genetics all play a role in extent and rate of changes

Common Surgeries

- Not specific to transgender populations
  - Hysterectomy / oopherectomy
  - Breast augmentation
  - Orchietomy

- Specific to transgender populations
  - Phalloplasty
  - Vaginoplasty
  - Metaiodioplasty
  - Top surgery/male chest reconstruction (mastectomy)
  - Facial feminization
  - Tracheal shaving
  - Other “cosmetic” procedures
    - Cosmetic in quotes, since many of these procedures are not at all cosmetic, but instead therapeutic in transgender people

Vaginoplasty
STI screening after vaginoplasty?

- Penile inversion technique – skin lined vagina
  – ? Urethral mucosa used

- Sigmoid colon vaginoplasty
  – Less common
  – Mucosa
Neovaginal Flora

- 50 trans women evaluated by a variety of microbiological techniques
- 1/50 showed lactobacilli
- Mean pH 5.8
- No candida
- Mix of skin, colonic, vaginal / BV flora
- No association between sx and any species

Approach to neovaginal discharge

- Skin-lined cavity
- pH = neutral
- Does not self-clean
  - sebum, dead skin, lubricant, ejaculate
- “Normal” flora?
- Skin infection vs vaginal infection
- Granulation tissue