

# **HIV in Transgender Populations: Evidence for Action**

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No financial relationships with commercial entities to disclose

# Transgender populations

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- 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

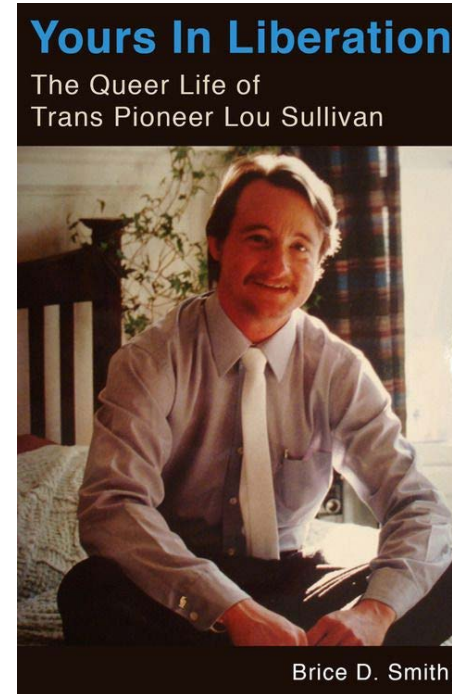
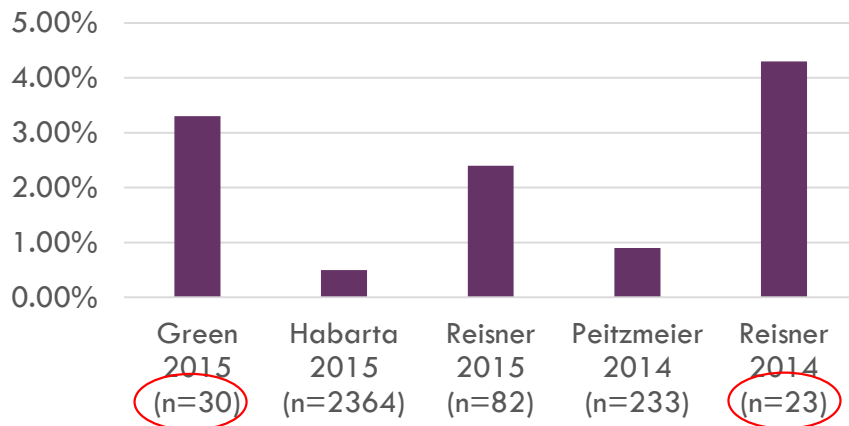


# HIV estimates: transgender men

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- 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%

**Laboratory Confirmed HIV Prevalence**



*“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

# HIV estimates: transgender women

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- 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





# HIV estimates: transgender women (2)

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- “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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	HIV risk/prevention
<b>Biological</b>	
Hormones	Interaction with PrEP? Impact on anal mucosa?
Surgery	Neovaginal acquisition?
Fillers	Contaminated equipment?
<b>Social/Structural</b>	
Sexual networks	Partner pool
Employment	Sex work
Housing	Transience
Mental Health/Substance Use	Reduced condom use

# Trans women-specific HIV vulnerabilities

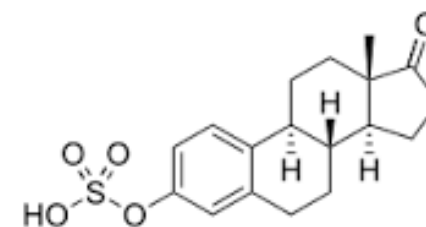
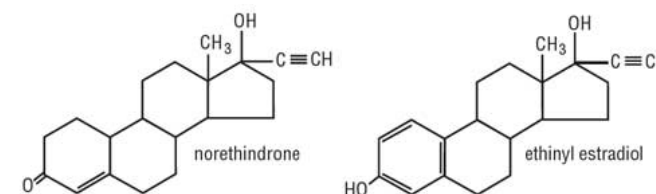
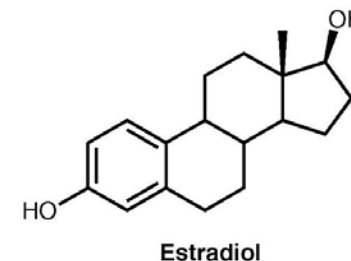
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# Estrogen and antiretroviral agents

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- 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\*

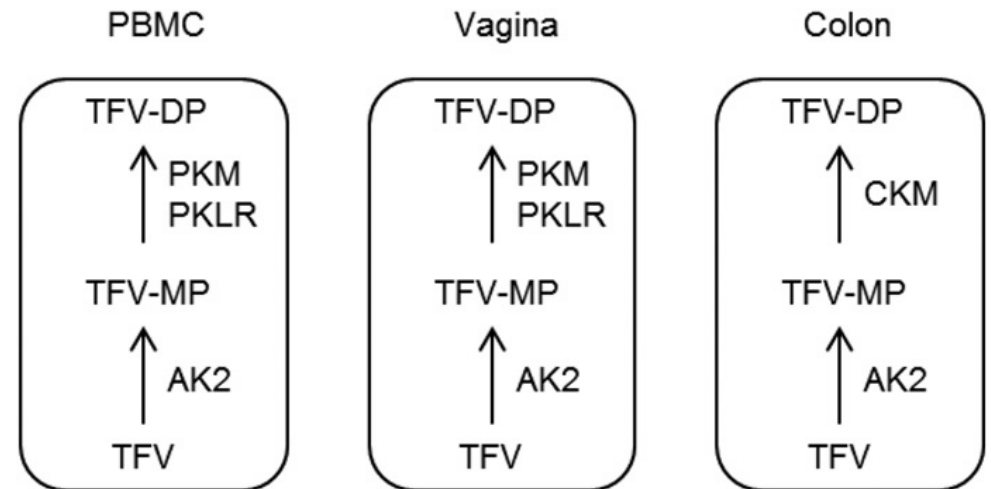




# PrEP and estrogens

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- *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 v. 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



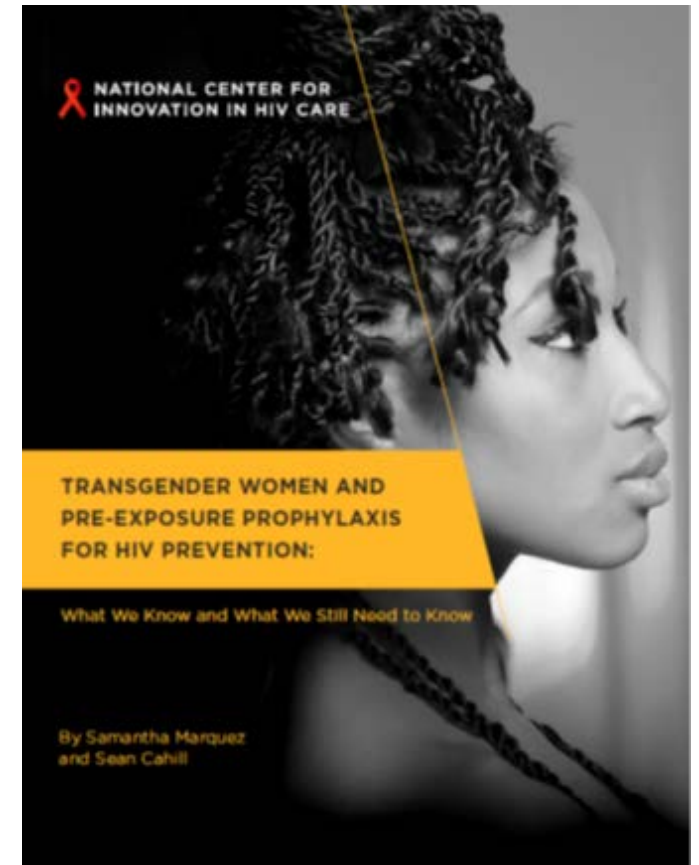
## Clinical relevance

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

# PrEP in transgender women (1)

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- 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

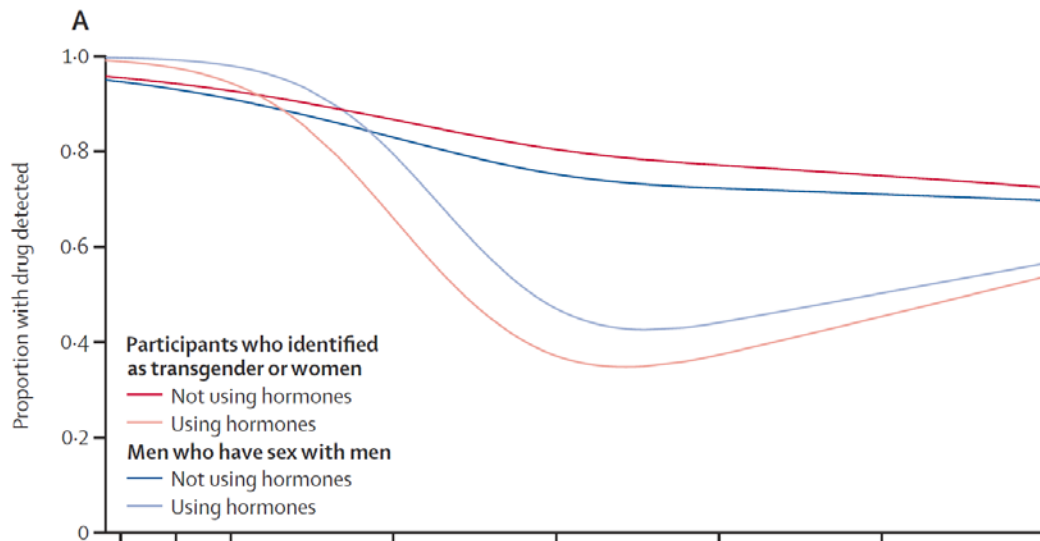


# PrEP in transgender women (2)

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- **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

Clinical Trials among women	Truvada Adherence
iPrex (TW only)	18%
FEM-PrEP	24%
VOICE	29%



- **Hormone use associated with lower detection of TDF**
  - Adherence?
  - Interactions?

# Trans women-specific HIV vulnerabilities

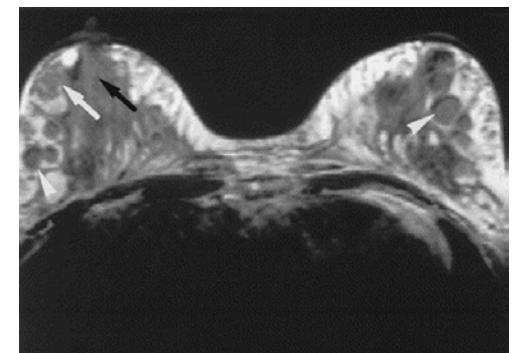
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	HIV risk/prevention
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# Surgery and fillers for feminization

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- **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**



# Trans women-specific HIV vulnerabilities

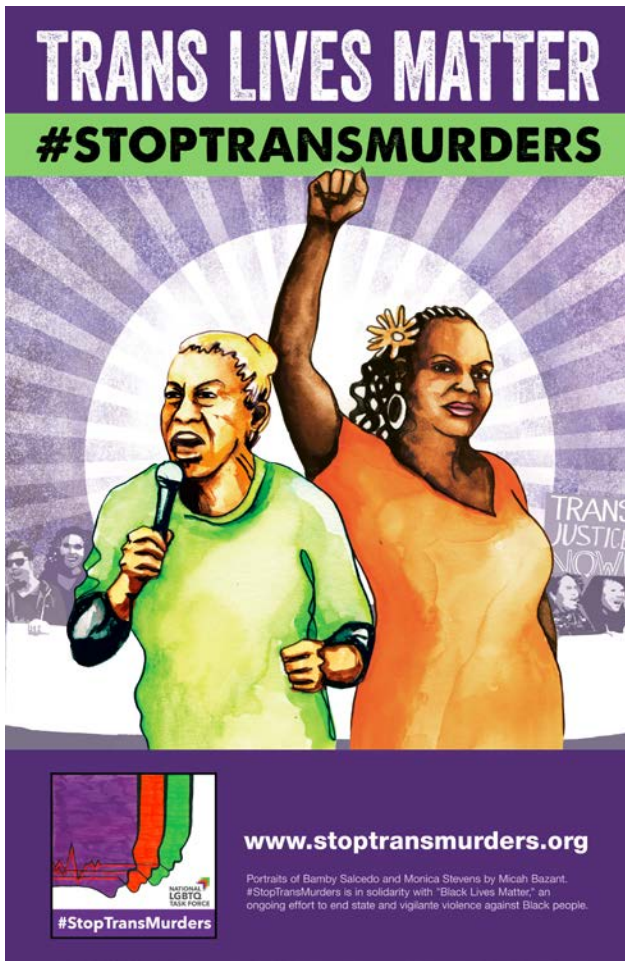
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# Social/Structural Drivers: Stigma

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- 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

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## Longitudinal Clinic Data on transgender people in U.S.

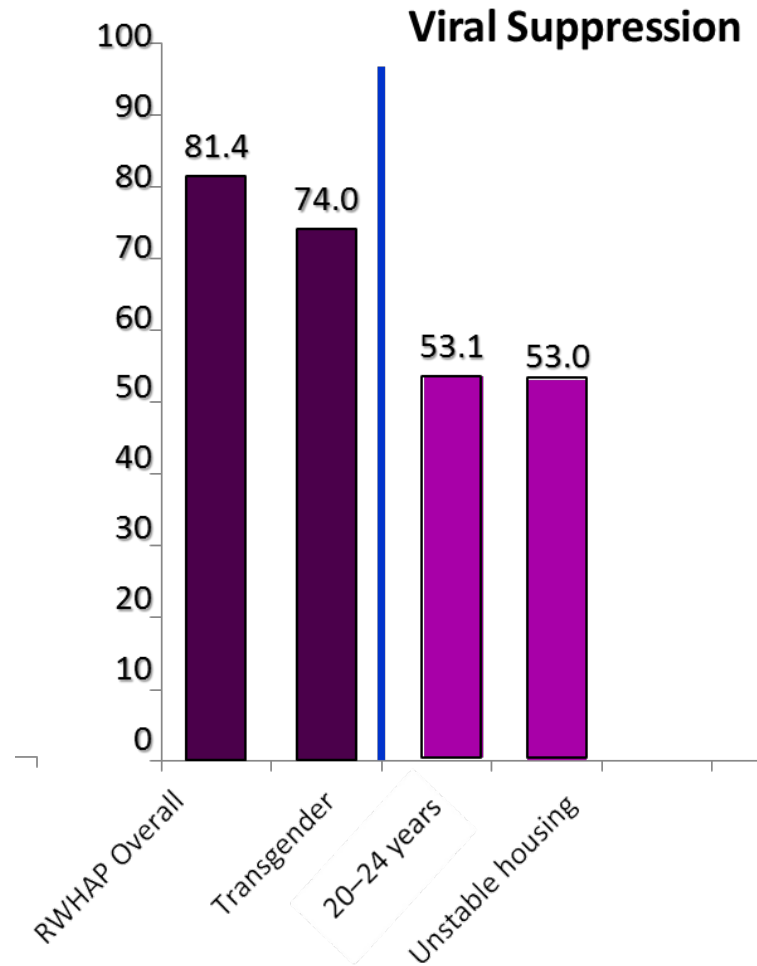
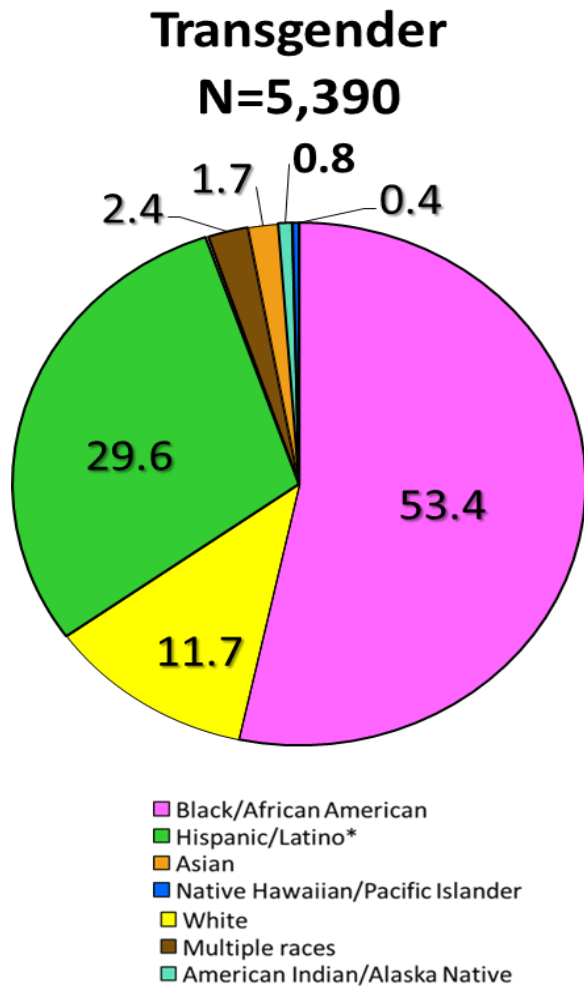
- ▣ Low educational attainment: 63% high school or less
- ▣ Poverty: 79.5% below federal poverty level (\$15,730 per year for family of 2)
- ▣ Housing instability: 26.4% temporary or unstable housing, 22% homeless

## Impact on HIV Outcomes

- ▣ 400 trans women, 9 SPNS demonstration sites in U.S.

Structural Factor	Undetectable Viral Load
Transient	-60%
Lack transportation	-50%
Healthcare empowerment	+37%

# Transgender Adults and Adolescents Served RWHAP: Disparities in Viral Suppression, 2014



# Gender affirmation and HIV care

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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

# HIV Prevention Research Agenda

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## □ 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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