

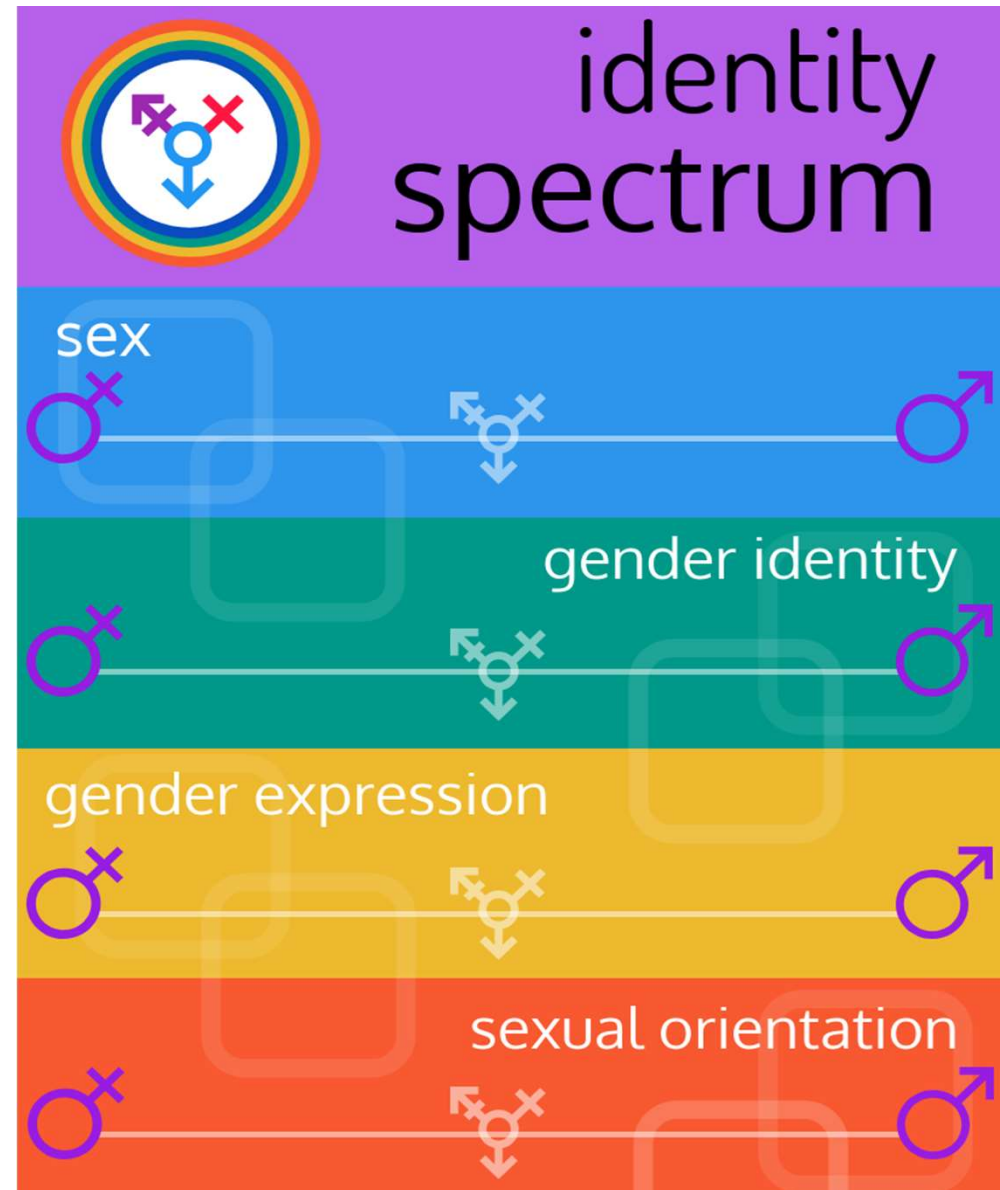


Transgender / Gender Non-Binary Populations & HIV

Corinne Heinen, MD, FAAFP
Clinical Associate Professor, AID and Family Medicine
Physician Lead, UW Transgender/ Gender Non-Binary Health Program
Director, LGBTQ Health Student Pathway
21 May 2019

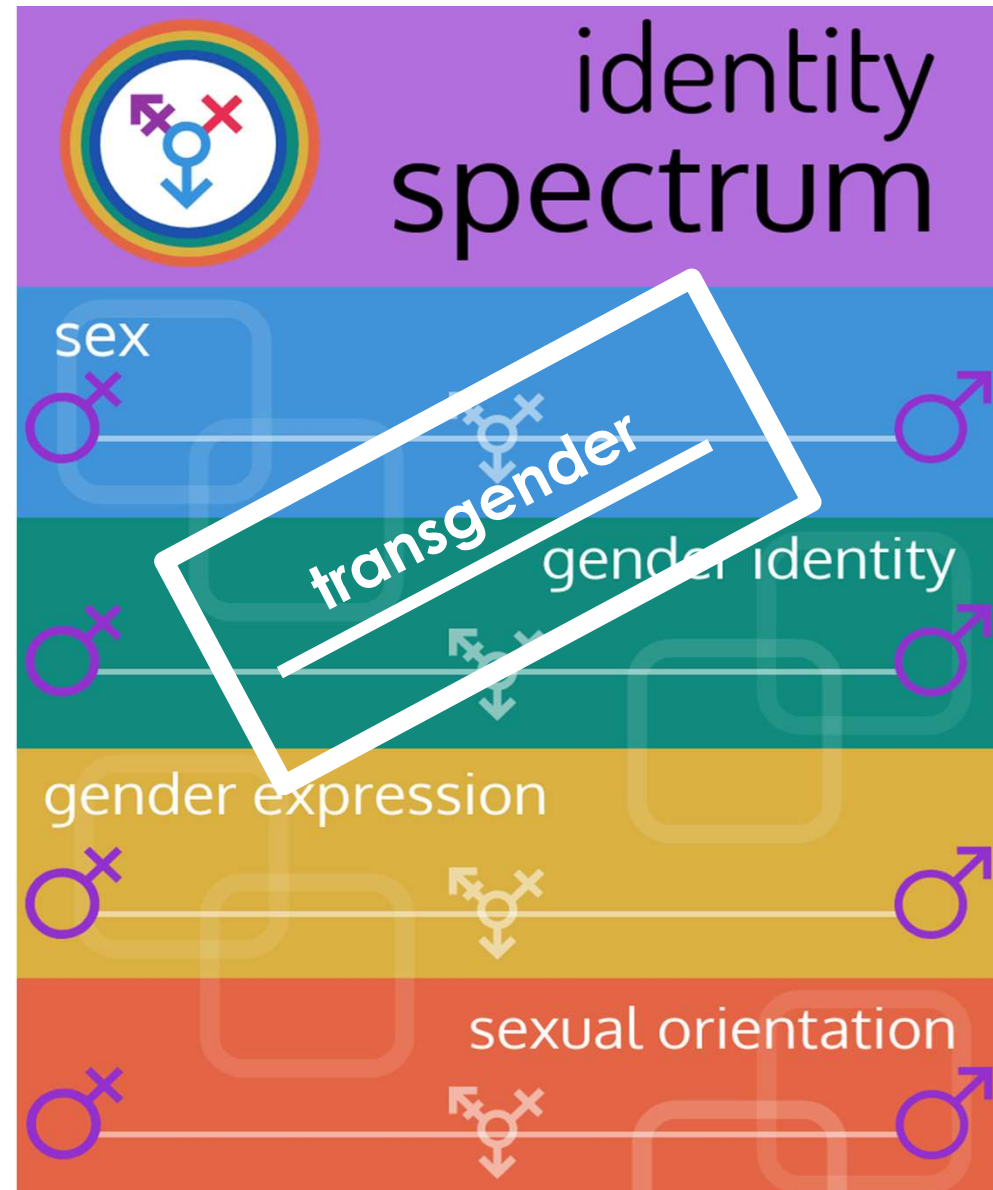
Variables in the Equation of Self

- **Sex**: chromosomes, hormones, anatomy; designated at birth
- **Gender identity**: core sense of self, attitudes, emotions, societal role & ways of relating
- **Gender expression**: presentation including clothing, hair, body language, manner, voice



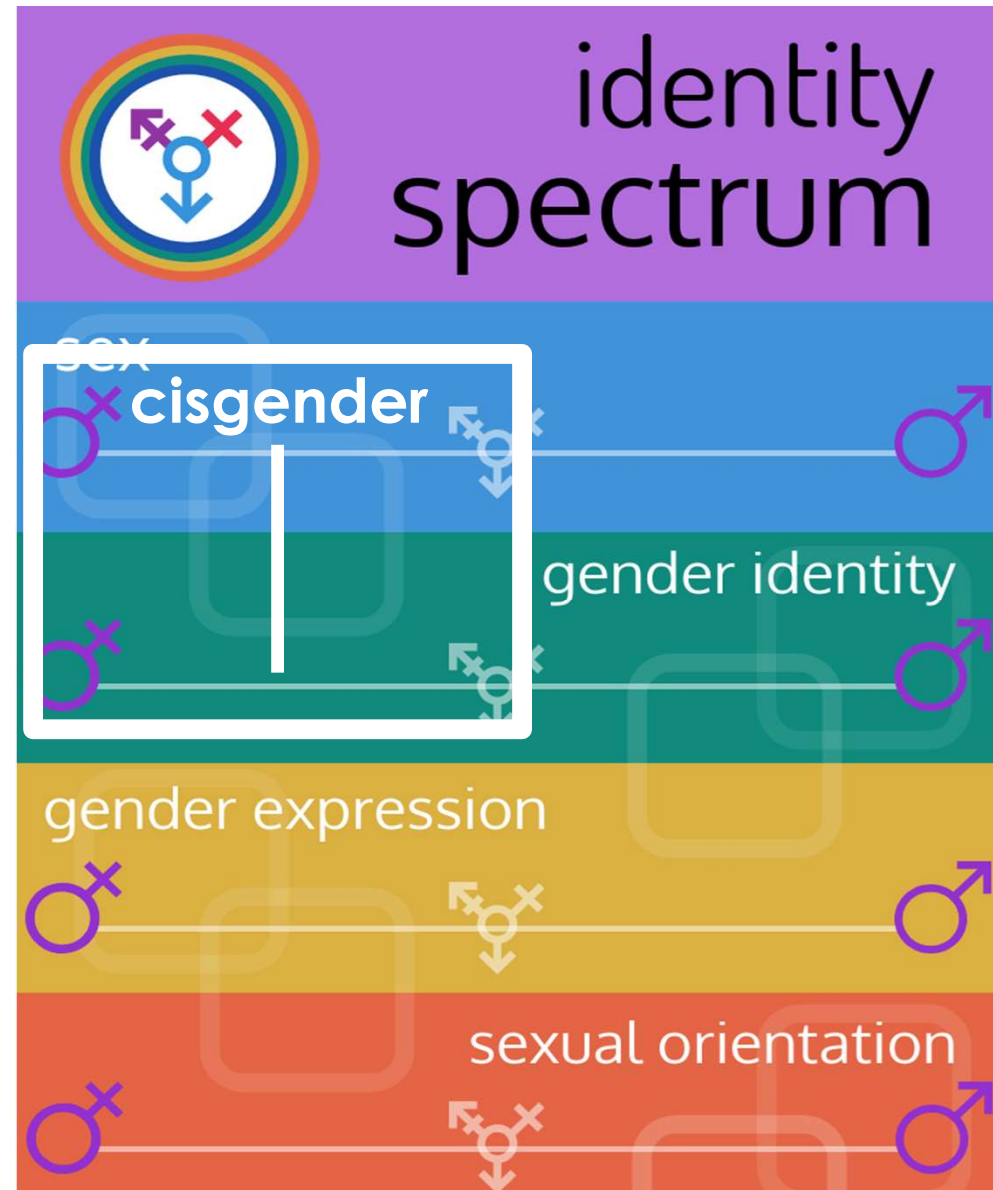
Variables in the Equation of Self

- **Sex**: chromosomes, hormones, anatomy; designated at birth
- **Gender identity**: core sense of self, attitudes, emotions, societal role & ways of relating
- **Gender expression**: presentation including clothing, hair, body language, manner, voice



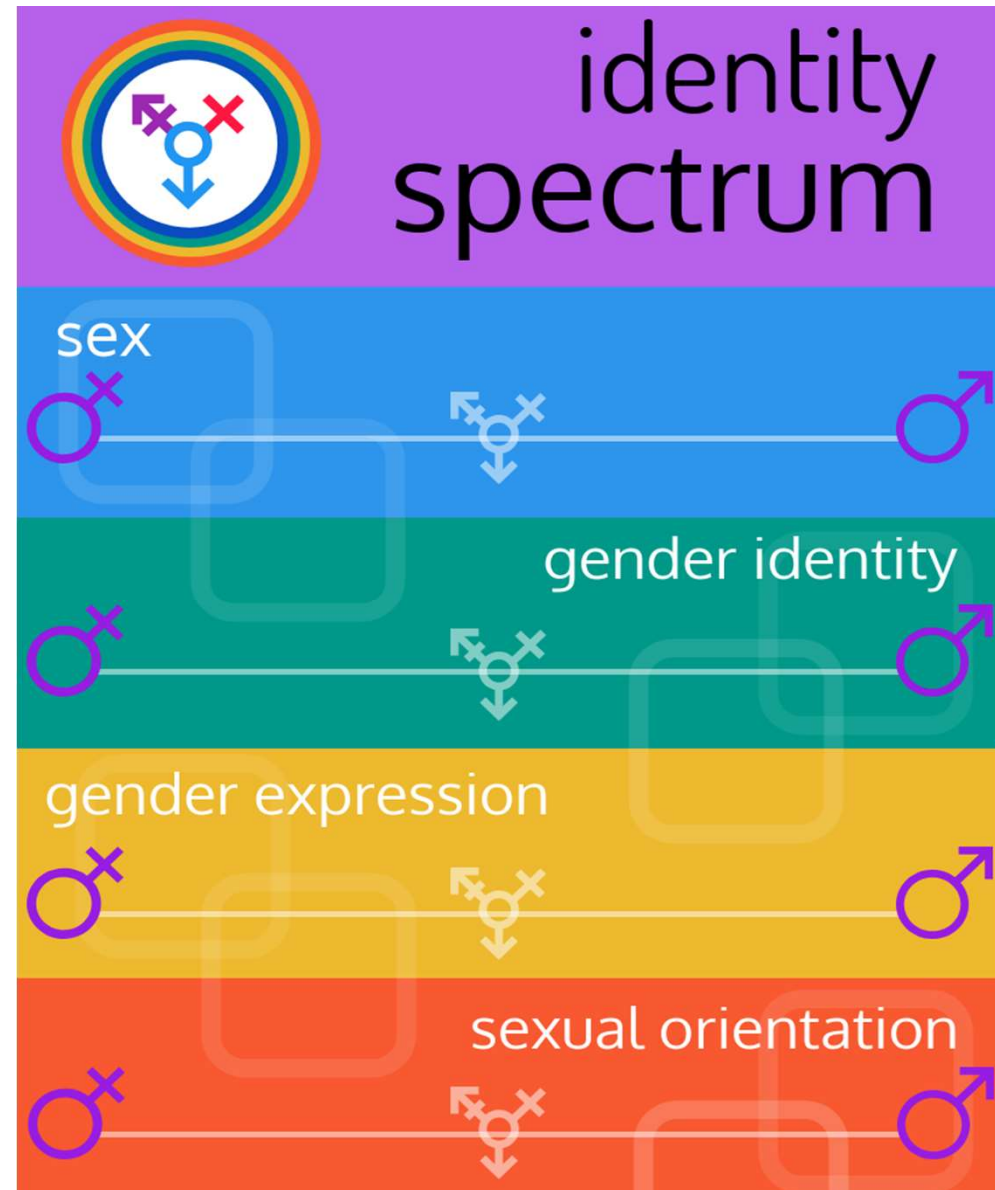
Variables in the Equation of Self

- **Sex**: chromosomes, hormones, anatomy; designated at birth
- **Gender identity**: core sense of self, attitudes, emotions, societal role & ways of relating
- **Gender expression**: presentation including clothing, hair, body language, manner, voice



Variables in the Equation of Self

Sexual orientation is an entirely different characteristic, but it can evolve on hormones



Non-Binary Language

- **Gender non-binary or genderqueer:** Define their gender outside the binary construct of male/female – feel their gender identity is intermediate or contains elements of both; however, **often still identifies as transmasculine or transfeminine.**
- **Gender neutral:** Feel themselves to be between genders
- Often use they/them pronouns

Patient Language to Convey Identity

Female Identified

**Transgender woman /
transwoman / transfeminine / woman**

(avoid MTF, they weren't truly male to begin with)

Male Identified

**Transgender man /
transman / transmasculine / man** (avoid MTF)

Memory device:

Trans-woman = transitioning => womanhood

Transsexual: clinical but “old school” term for one who has had complete transition

Terminology to convey sex

—
“**Assigned** male at birth” = AMAB &

“**Assigned** female at birth” = AFAB

are terms used to convey the gender originally thought to apply to a person based on anatomy

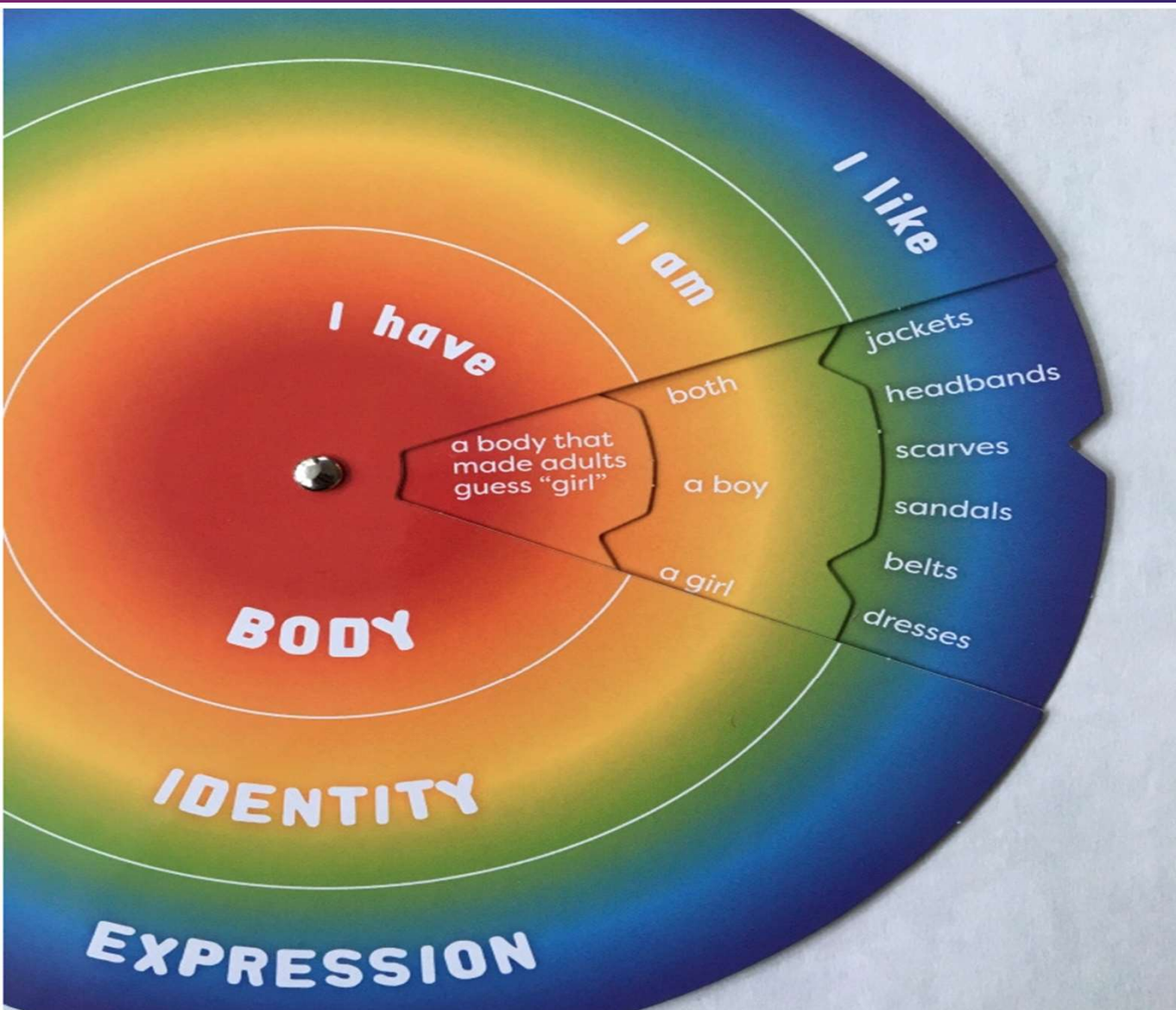
Words That Convey Concepts

Dysphoria: profound sense of unease or distress; can be accompanied by depression & anxiety

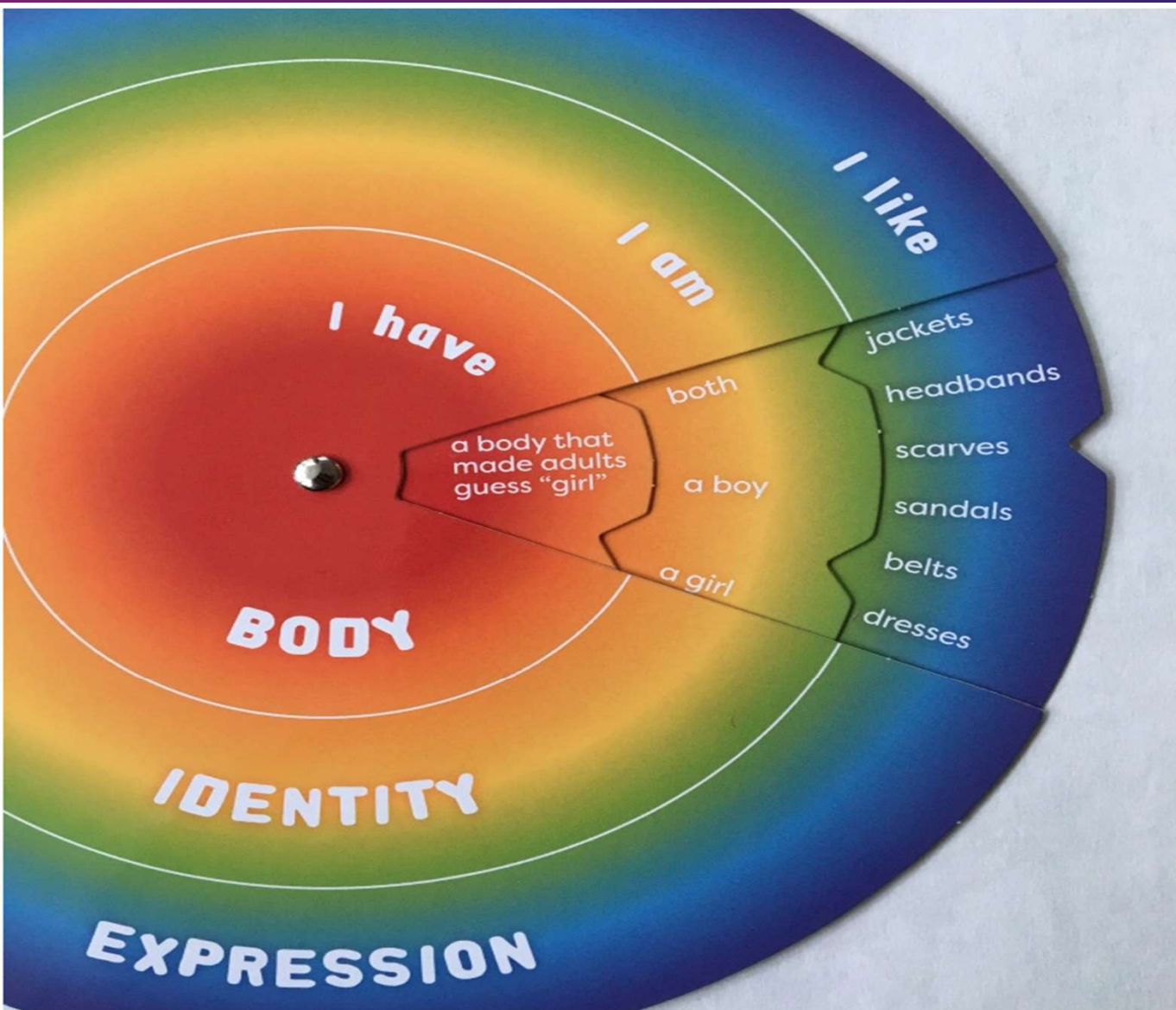
Dysmorphia: intense discomfort with a body part or feature

Misgendered: being attributed the wrong gender

Gender affirming: surgery or medication that affirms the patient's identity



What if my variables add up in a way that is not socially stereotypical for someone with my DNA?



Stigma and discrimination

Dramatic Health Disparities

- **Depression, anxiety, social disenfranchisement, PTSD => 41%** rate of lifetime suicide attempt
- **HIV infection: 18.8%** rate transwomen, **2.0%** transmen
- **Victimization**, including IPV & homicide
- **Substance use**
- **Lack of healthcare for ANY** medical conditions

Due to a cascade of stigma, adverse social determinants of health & barriers to care

Social Determinants of Health

2015 US Transgender Survey – Washington

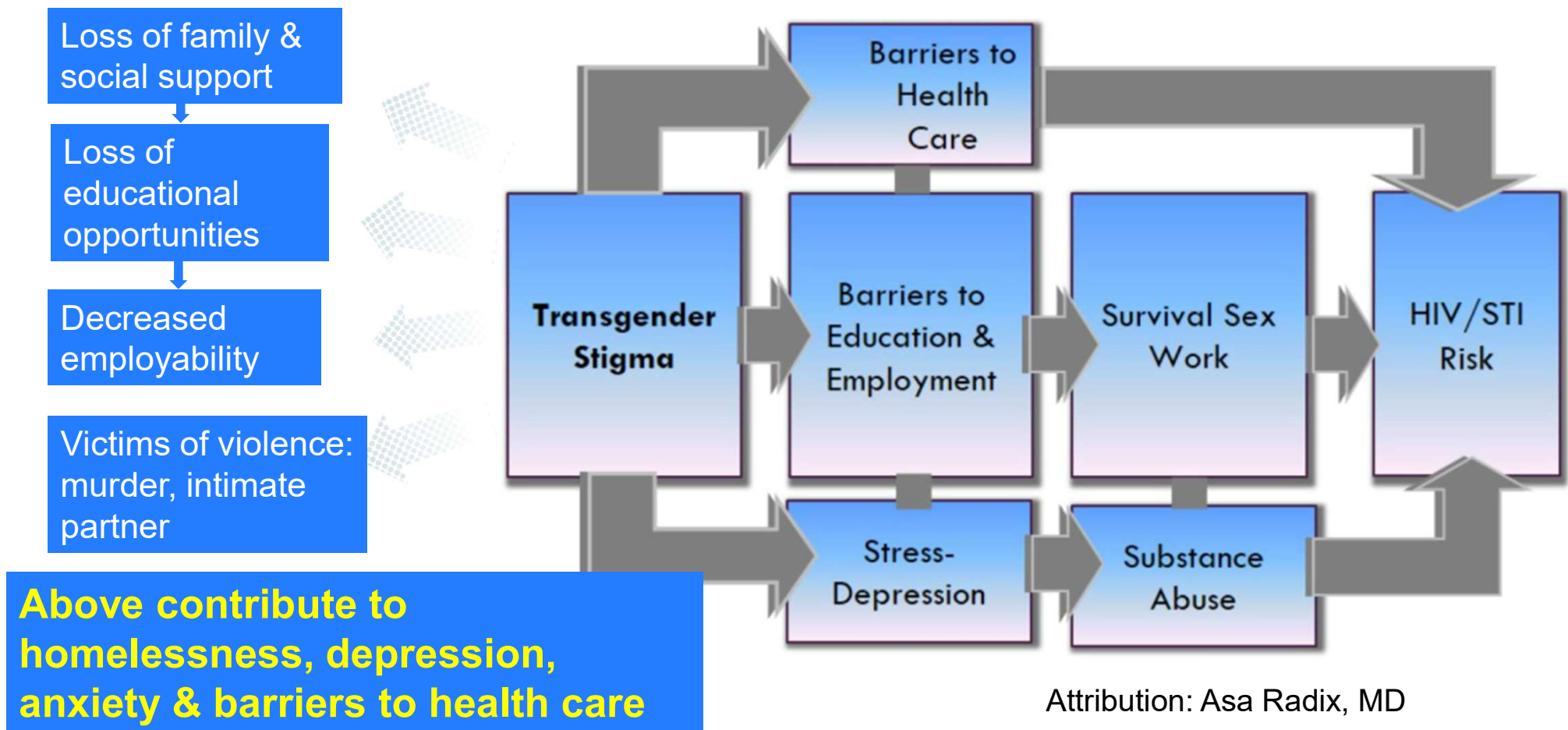
In the previous year

- **14%** unemployment, 3x average
- **28%** were living in poverty
- **13%** homeless
- **8%** were denied access to a bathroom

Even though TGNB persons come from all walks of life & backgrounds

N = 1667 for state WA substudy; see <http://www.ustranssurvey.org>

Cascading Contributors to HIV Risk



Barriers To Healthcare Access

2015 US Transgender National Survey
N = 27,715

Negative experience	% of those who had seen a provider in the past year
They had to teach their health care provider about transgender people to get appropriate care	24%
A health care provider asked them unnecessary or invasive questions about their transgender status that were not related to the reason for their visit	15%
A health care provider refused to give them transition-related care	8%
They were verbally harassed in a health care setting (such as a hospital, office, or clinic)	6%
A health care provider used harsh or abusive language when treating them	5%
A health care provider refused to give them care not related to gender transition (such as physicals or care for the flu or diabetes)	3%
A health care provider was physically rough or abusive when treating them	2%
They were physically attacked by someone during their visit in a health care setting (such as a hospital, office, or clinic)	1%
They were sexually assaulted ⁹ in a health care setting (such as a hospital, office, or clinic)	1%
One or more experiences listed	33%



24% had to teach their provider



15% were asked intrusive questions



8% were refused gender care

11% verbally maltreated

3% were refused any care




33% who had seen a provider had had a negative experience in a medical setting in the previous year

23% didn't seek care due to fear of being mistreated

Barriers To Healthcare Access

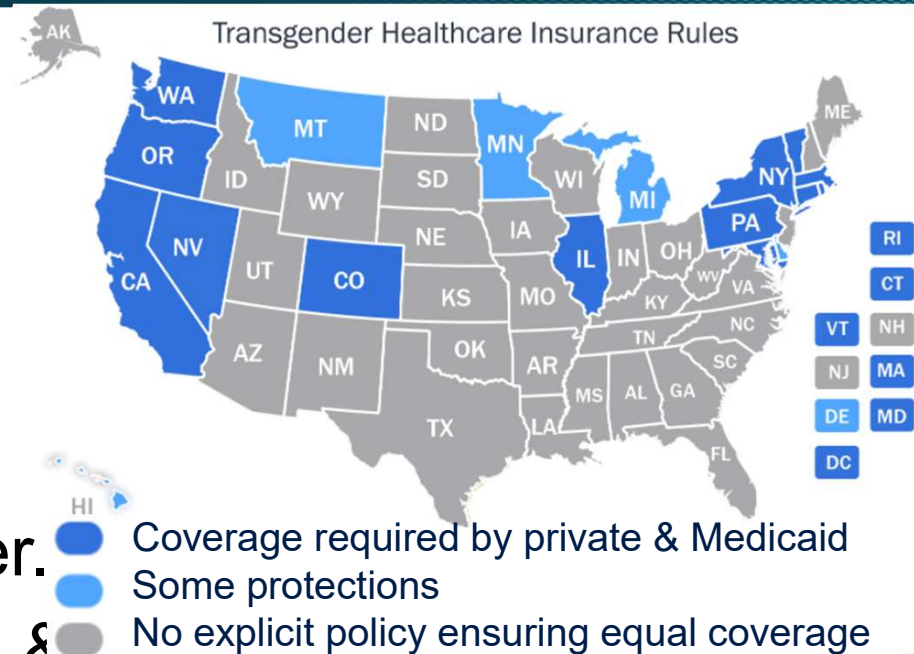
- Transgender patients have often experienced neglect, ridicule or other **maltreatment in medical settings** & so don't pursue care
- An **inadequate number of providers** to provide informed care due to lack of training
- **Historically there hasn't been insurance coverage** to be treated with hormones or surgeries

Barriers To Healthcare Access

- Transgender patients have often experienced neglect, ridicule or other maltreatment in medical settings & so don't pursue care  **IMPROVING**
- An inadequate number of providers to provide informed care due to lack of training  **BETTER ?**
- Historically there hasn't been insurance coverage to be treated with hormones or surgeries  **SIGNIFICANTLY IMPROVED**

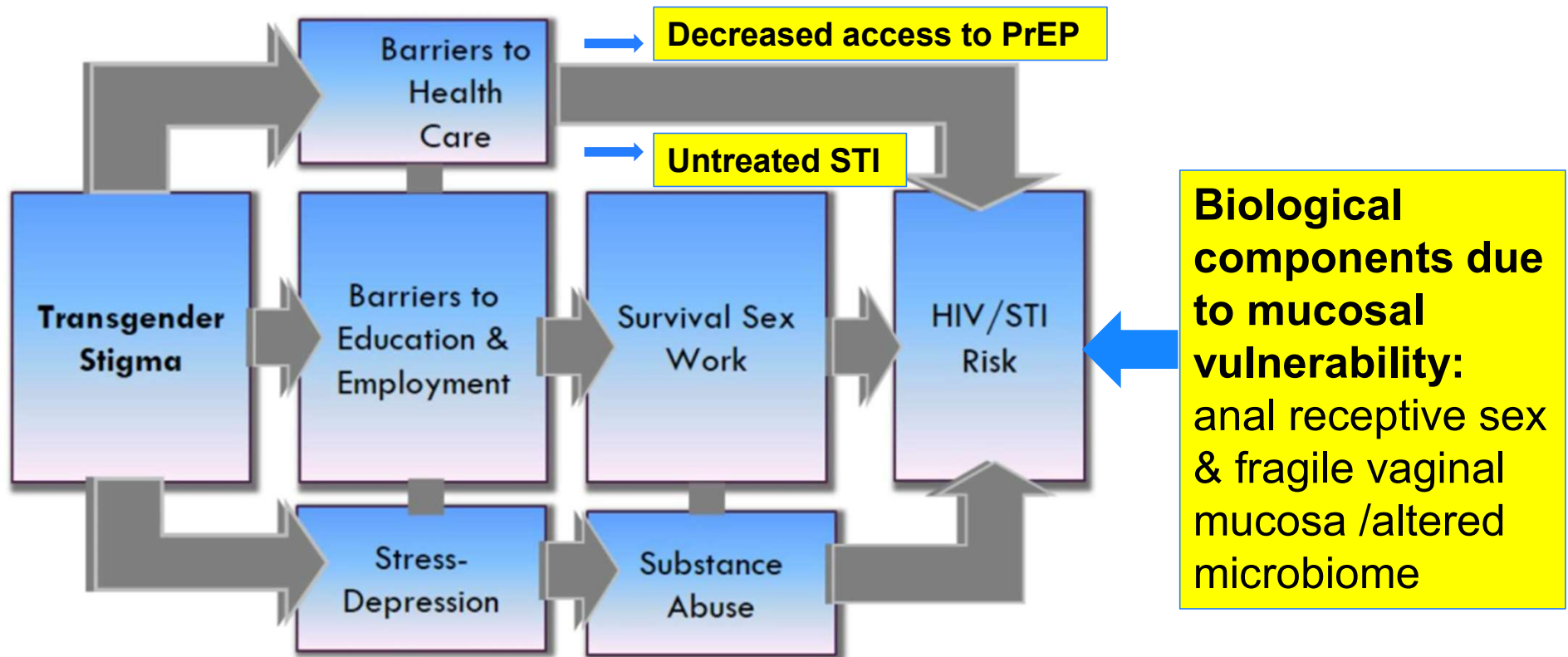
Improving Insurance Coverage for TGNB Care

Private & Apple Health insurance plans based in Washington were **required** to cover transgender care since 2014 per the Office of the Insurance Commissioner. **Medicare** has covered care & surgeries since 2014.

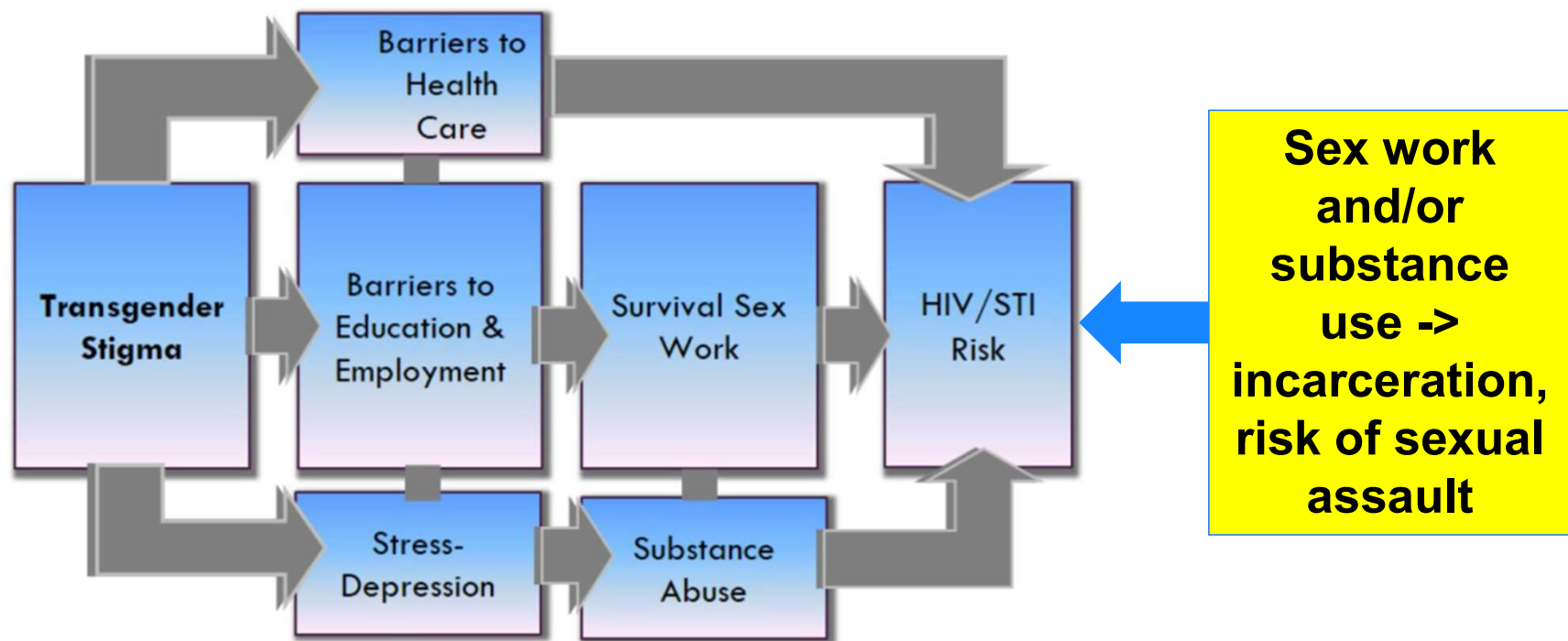


Rollback of the ACA shouldn't reverse these gains in Washington

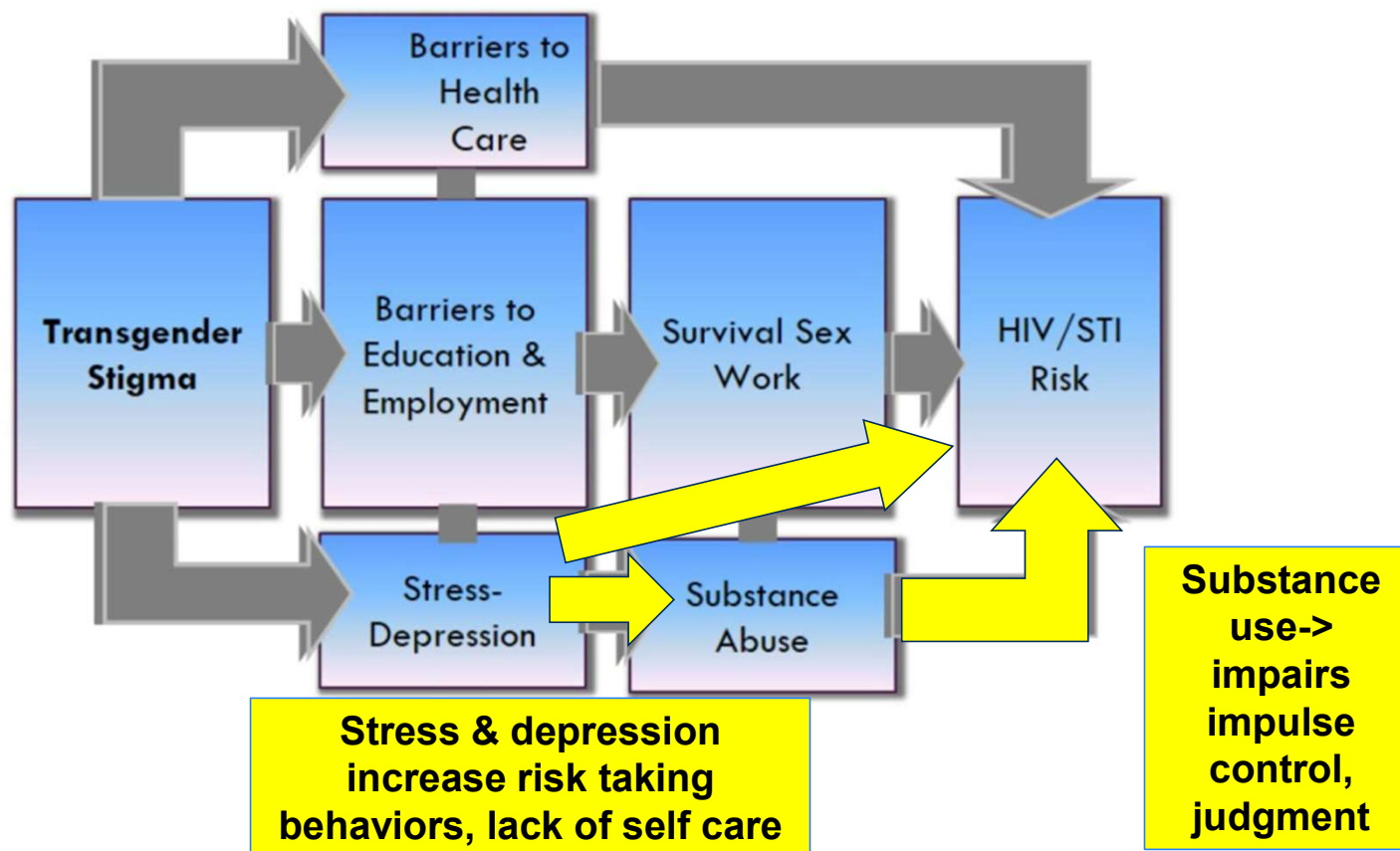
Cascading Contributors to HIV Risk



Cascading Contributors to HIV Risk



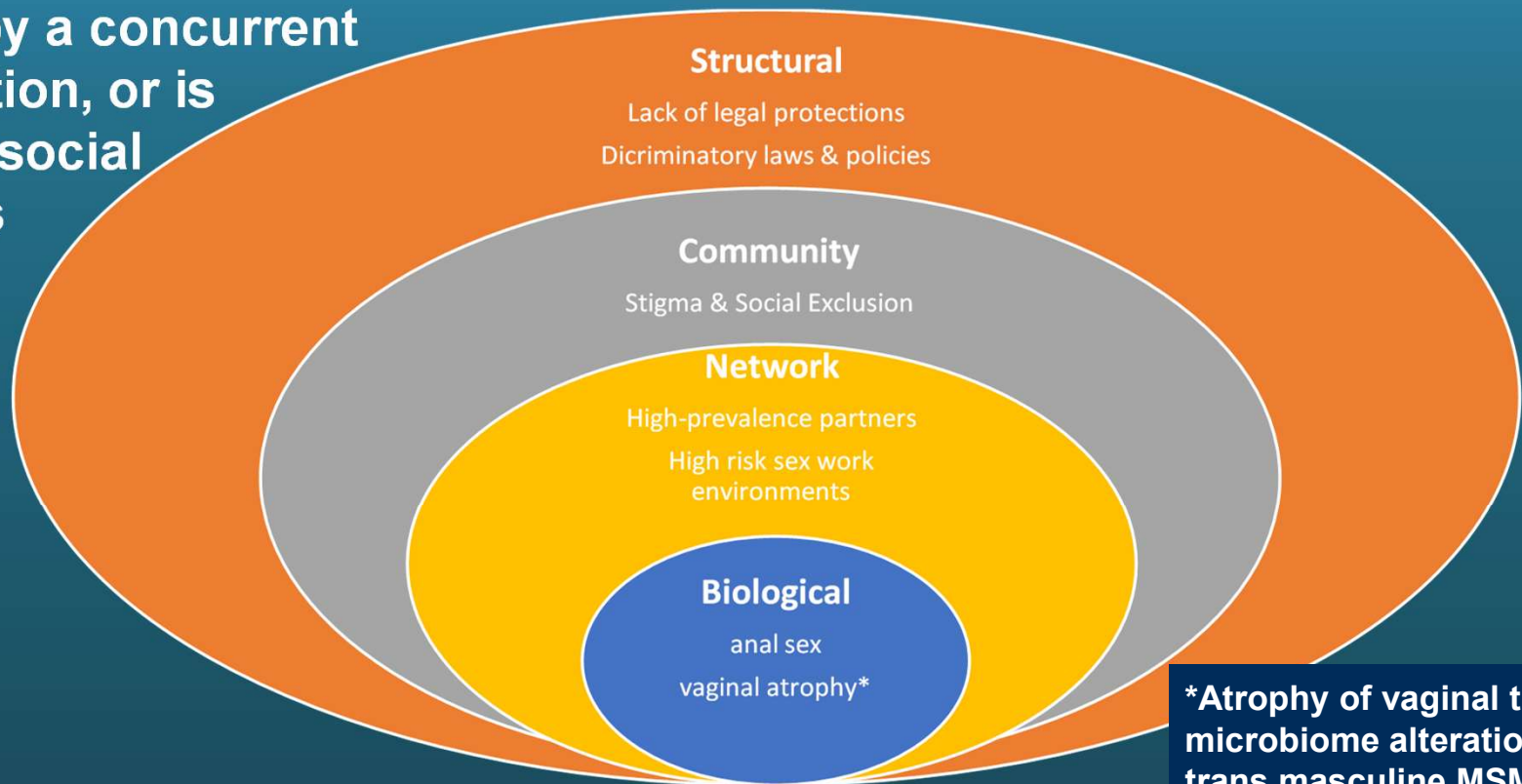
Cascading Contributors to HIV Risk



Syndemics

Synergistic Epidemics Contributing to HIV Risk in Transgender People

Syndemics apply when a given disease is aggravated by a concurrent health condition, or is amplified by social determinants of health



***Atrophy of vaginal tissue & microbiome alterations among trans masculine MSM taking testosterone**

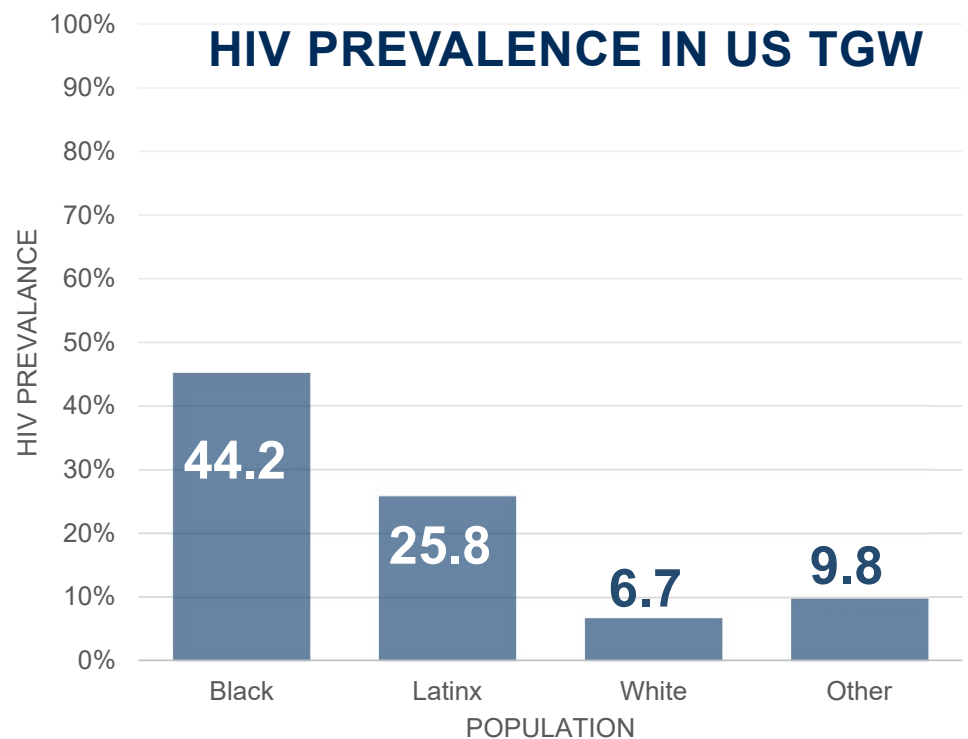
Demographics

- Transgender status is not queried on the US Census
- Estimates from the Williams Institute based on CDC state-based surveys from 2014:
 - 0.58% of the population in the US, = 1.4 million
 - **0.62%** of the population in **Washington** state,
= 32,850 persons
 - **0.73%** of those in the **18-24 year old age group**

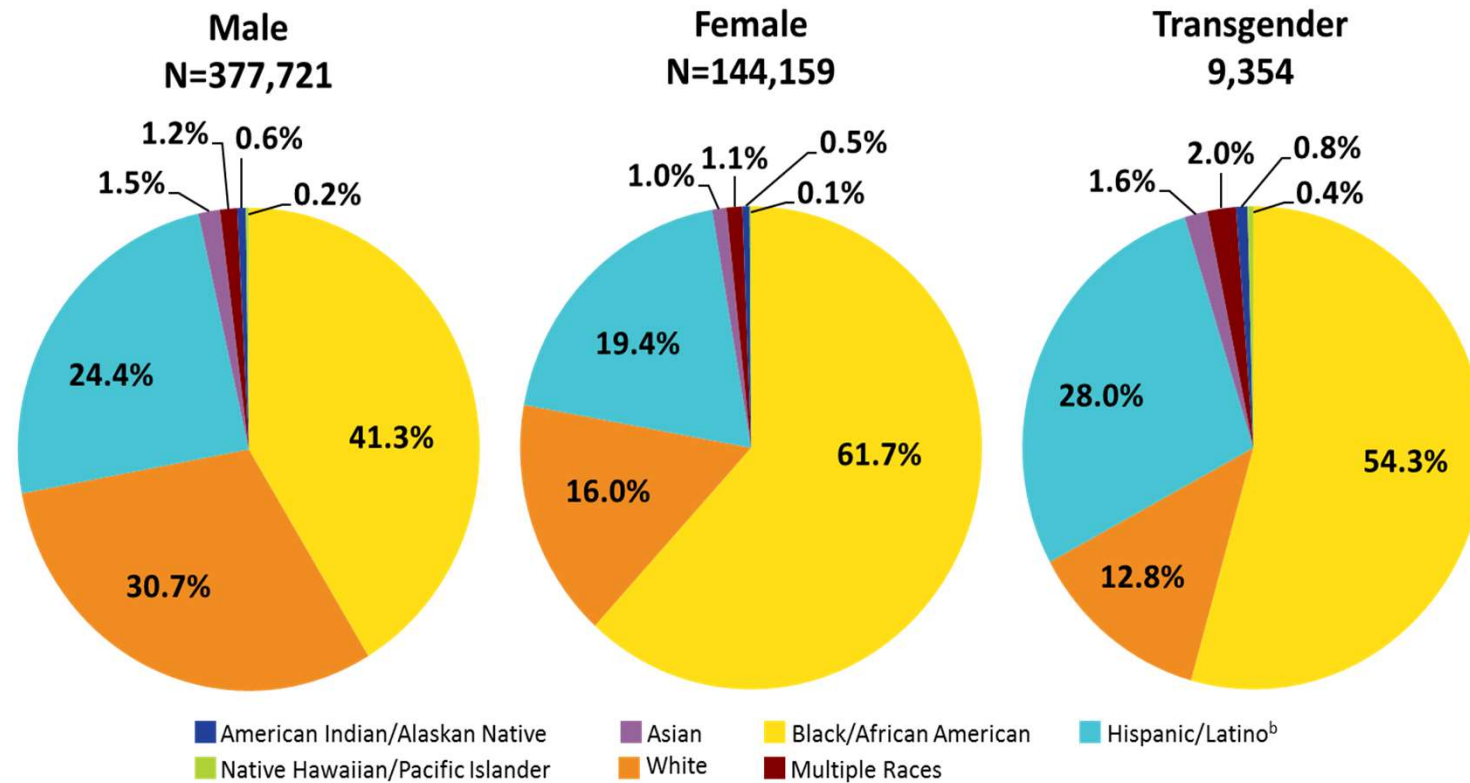
Estimated Prevalence of HIV & Sexual Behaviors in US Trans Population: A Systematic Review & Meta-Analysis, 2006-2017

88 total studies

- HIV prevalence, weighted lab-confirmed + self report: **13.7%**
 - **18.8%** transwomen
 - **2.0%** transmen
- Sex work
 - 38% transwomen
 - 13% transmen
- HIV tested
 - 75% transwomen
 - 69% transmen



Clients Served by the Ryan White HIV/AIDS Program, by Gender and Race/Ethnicity, 2017—United States and 3 Territories^a



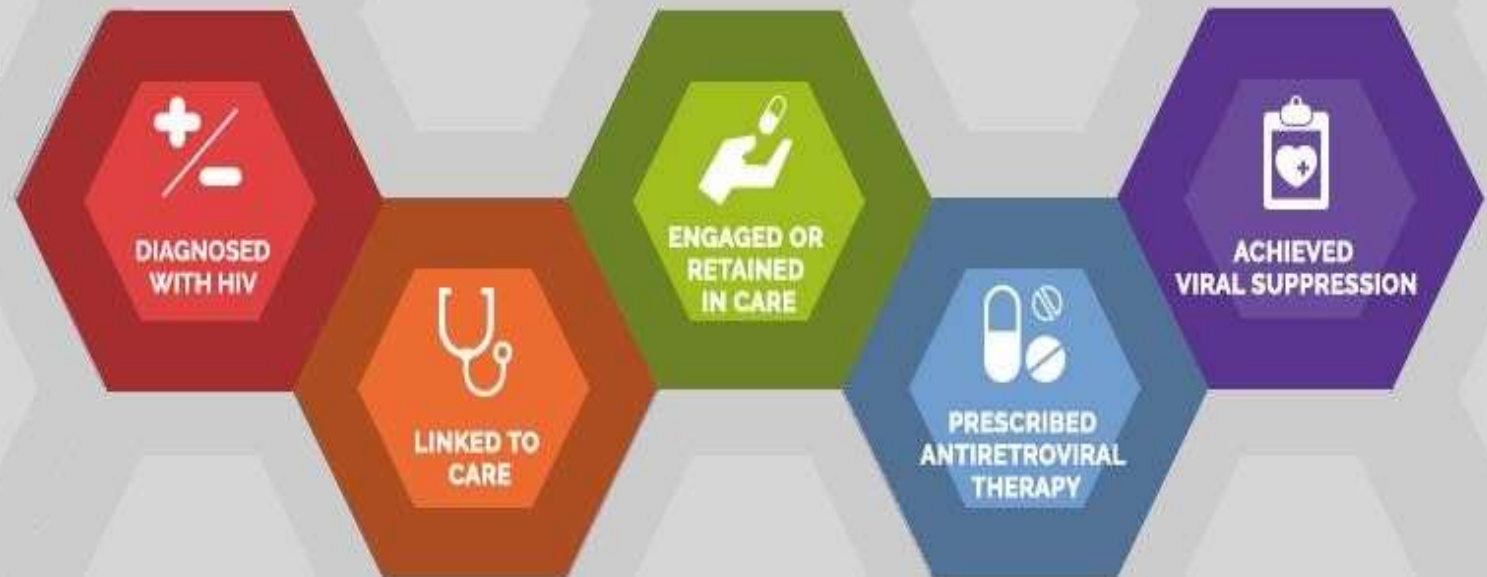
^a Guam, Puerto Rico, and the U.S. Virgin Islands.

^b Hispanics/Latinos can be of any race.

The Breaks in the Care Continuum

HIV CARE CONTINUUM:

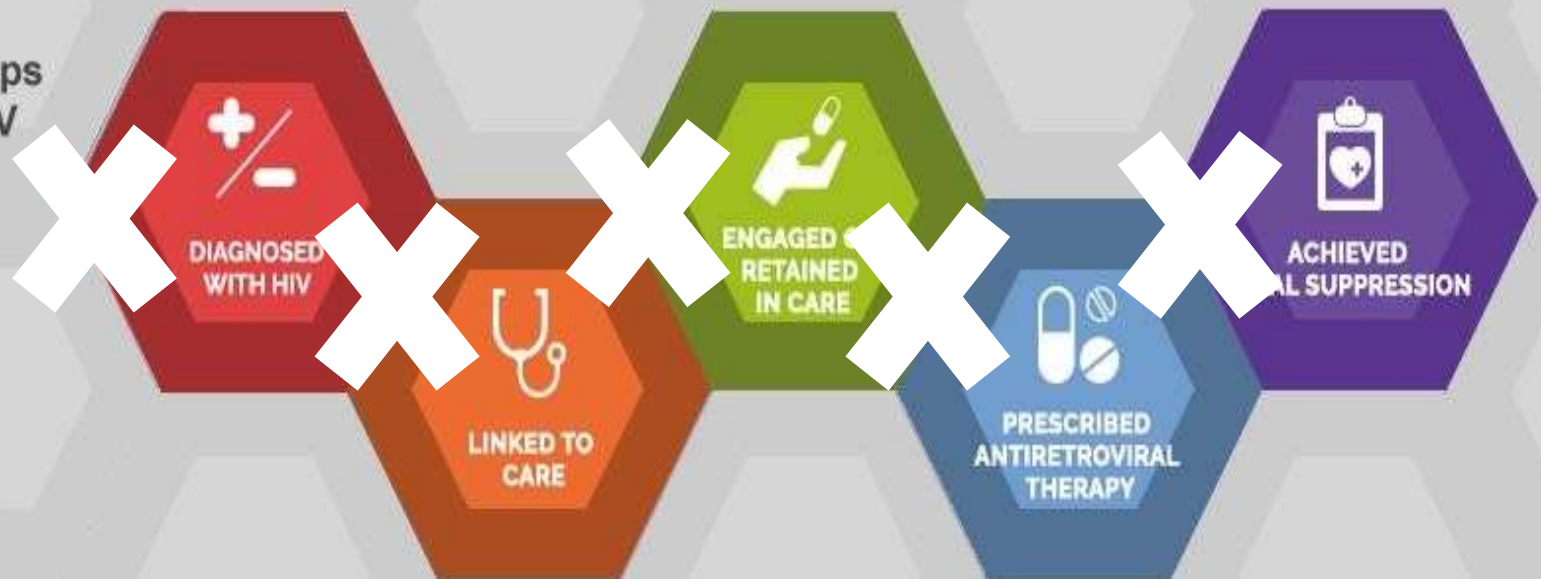
The series of steps a person with HIV takes from initial diagnosis through their successful treatment with HIV medication



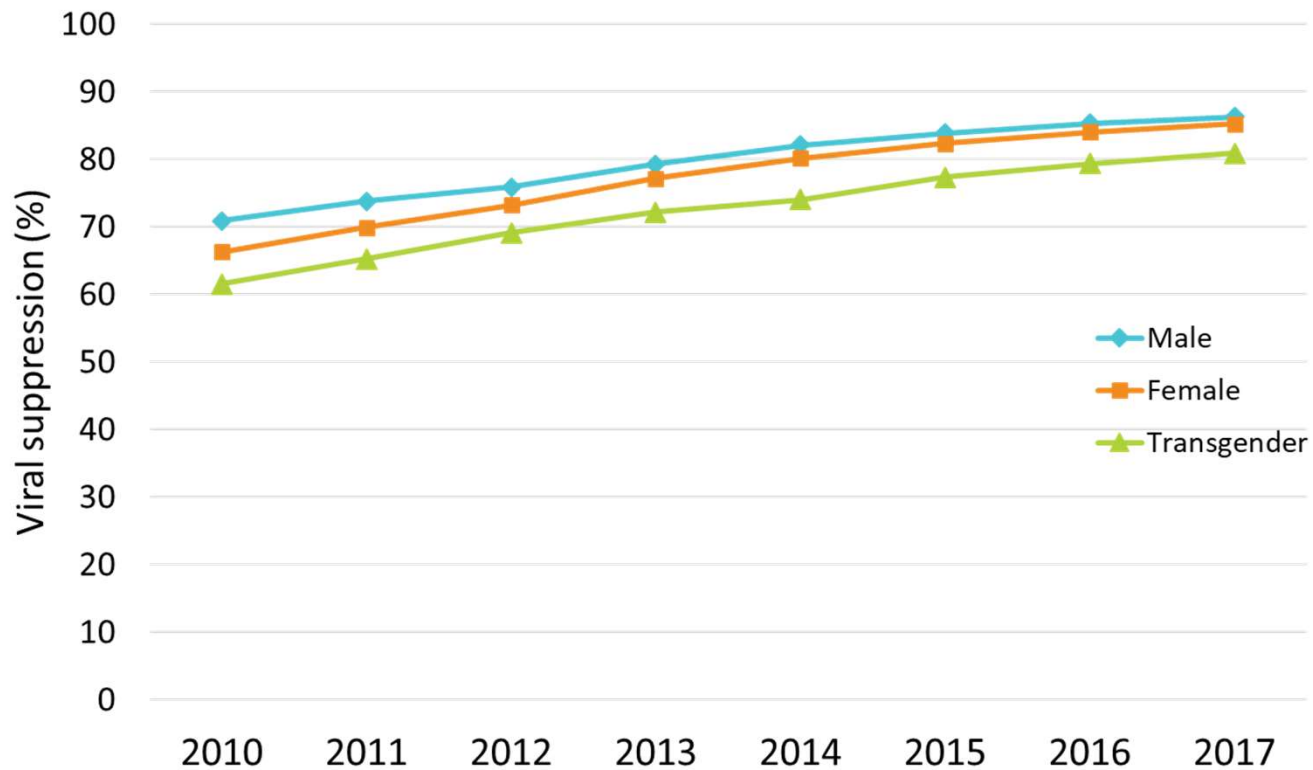
The Breaks in the Care Continuum

HIV CARE CONTINUUM:

The series of steps a person with HIV takes from initial diagnosis through their successful treatment with HIV medication



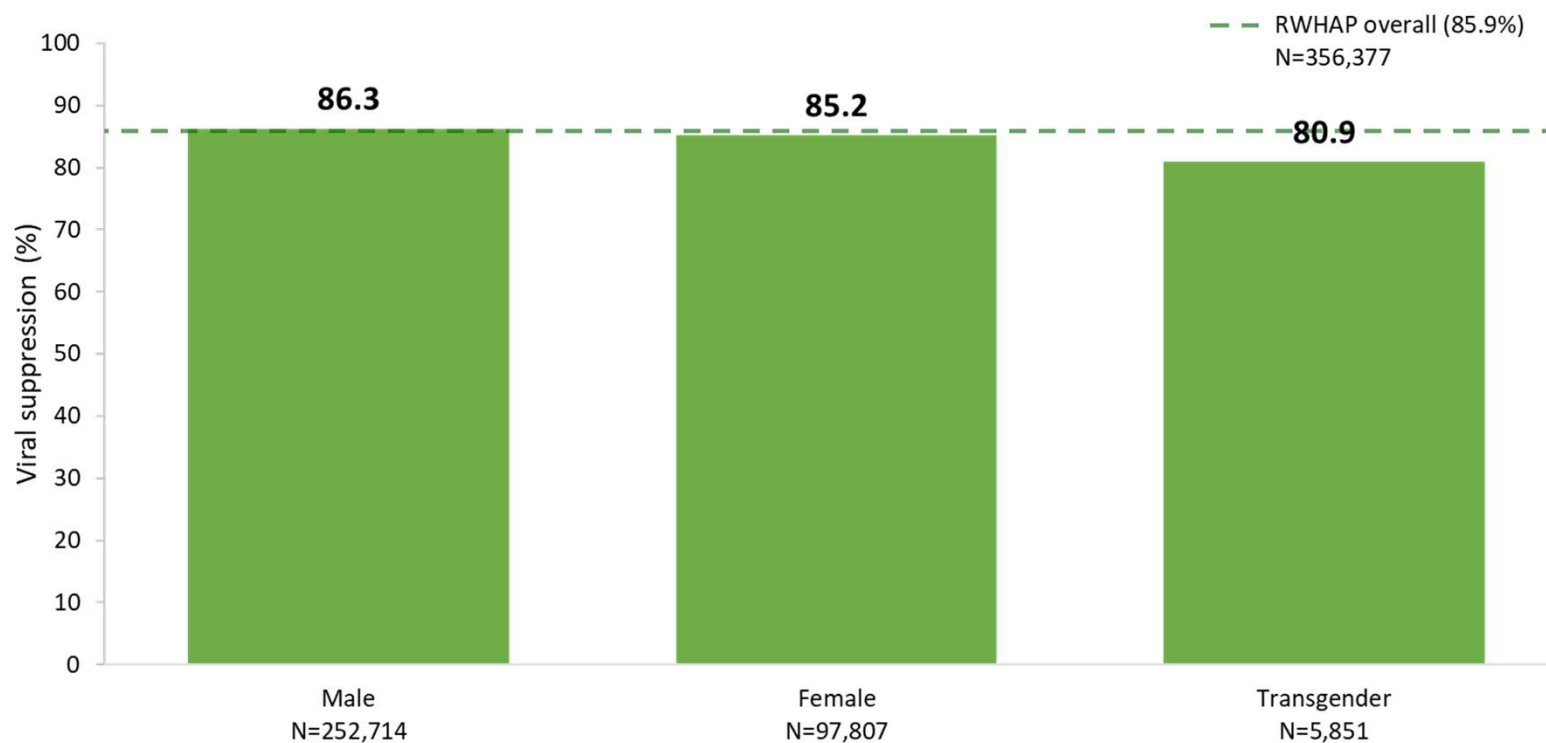
Viral Suppression among Clients Served by the Ryan White HIV/AIDS Program, by Gender, 2010–2017—United States and 3 Territories^a



Viral suppression: ≥ 1 OAHS visit during the calendar year and ≥ 1 viral load reported, with the last viral load result < 200 copies/mL.

^a Guam, Puerto Rico, and the U.S. Virgin Islands.

Viral Suppression among Clients Served by the Ryan White HIV/AIDS Program, by Gender, 2017—United States and 3 Territories^a



N represents the total number of clients in the specific population.

Viral suppression: ≥ 1 OAHS visit during the calendar year and ≥ 1 viral load reported, with the last viral load result < 200 copies/mL.

^a Guam, Puerto Rico, and the U.S. Virgin Islands.

Gender Care Improves Adherence to HIV Care



Positively Trans Survey, n = 157

Top 5 Health Concerns of HIV+ transgender persons, in order:

1. **Gender-affirming, 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

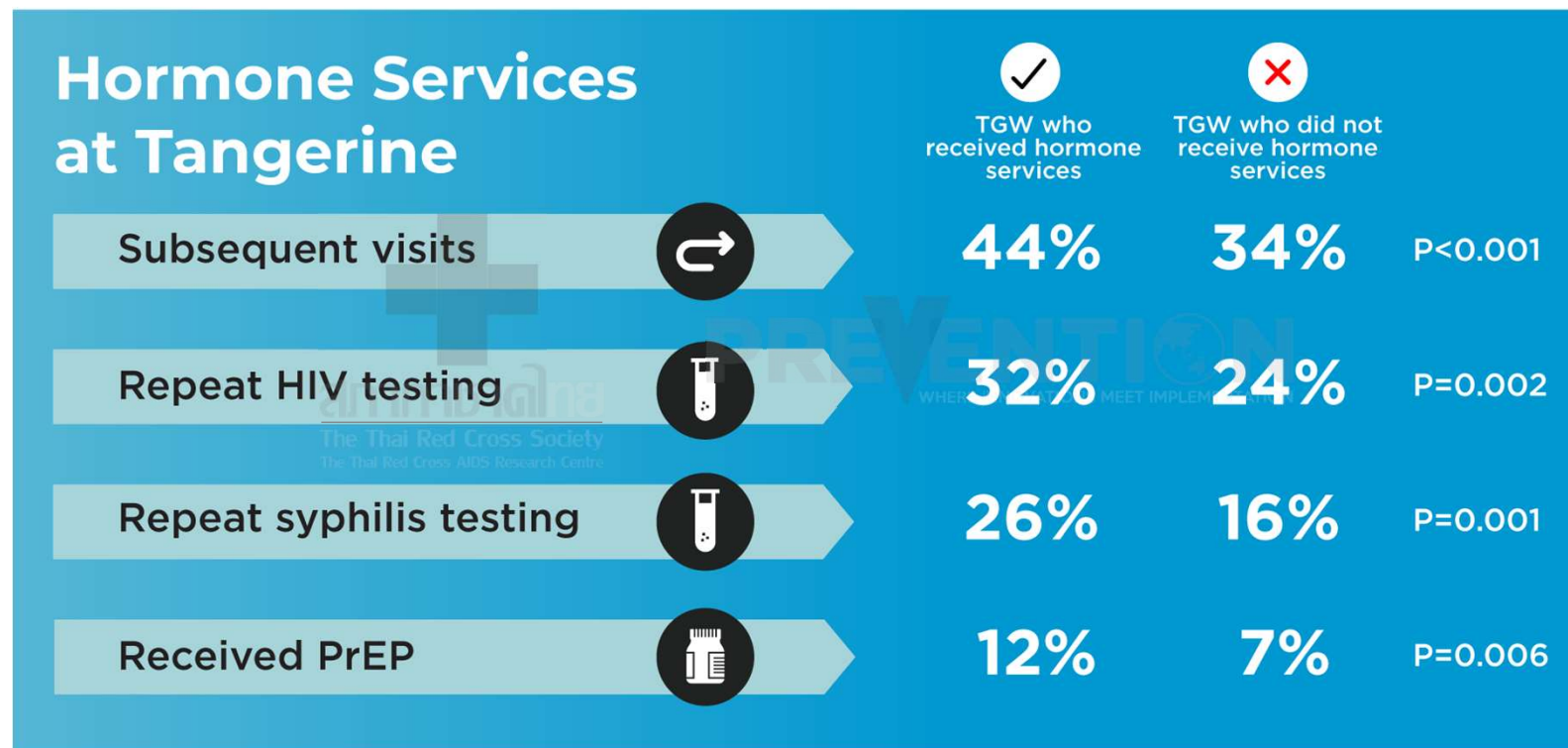
SPNS: Transgender women of color who has a HIV primary care provider who is also their hormone prescriber, more likely to:

- Have an undetectable HIV viral load
- Have had an HIV primary care visit in the previous 6 months

Chung, Cecilia, 2016; Some kind of strength: Findings on health care and economic wellbeing from a national needs assessment of transgender and gender non-conforming people living with HIV. Oakland, CA: Transgender Law Center.

Gender Affirming Hormone Treatment (GAHT) Increasing HIV Testing, Syphilis Testing and PrEP Uptake

Tangerine Clinic in Thailand



Reference: Tangerine Community Health Center, Oral Abstract Presentation, International AIDS Conference 2018, Amsterdam, The Netherlands

Why is Gender Affirming Care So Crucial?

- Some transgender persons will not discuss their identity with their healthcare provider if they feel vulnerable, so that **important medical history or medications are not disclosed**
- Creating a comfortable environment enhances the therapeutic alliance & **increases participation in medical care**
- Otherwise **may not seek appropriate medical care** for any health conditions
- Or **may buy hormones off internet or perform self-orchectomy**, which can cause major complications

Gender Affirming Approach to the Patient

- **Avoid "Sir", "Ms." or other gendered titles**
- **Double check name:** "How do you like to be called"
- **Ask about pronouns;** some use neutral pronouns = **the singular "they"**; use plural verbs as with the singular "you"
- **Use the language the patient does** about their anatomy; **if uncertain, use anatomic terms.** Transmen: chest, not breast, tissue.
- **Keep the focus to what is relevant if in for acute care** – don't ask about future plans about transitioning

Gender Affirming Approach to the Patient

- Ask open ended questions
- Ask for **self-descriptors**; people who are non-binary may still feel transmasculine/feminine applies to them
- Ascertain where your patient feels they fit on the **gender spectrum**



- Remember their **gender expression may not match with their identity** in the ways you may expect

Misgendering Mishaps

If you make a mistake with someone's name or pronoun

- correct it
- own it
- learn from it &
- move on!

Otherwise, the patient has to take care of your feelings

Or, make a repair before you start:

“Please correct me if I make a mistake.”



Reference: Transgender Health Program, OHSU



Social & Psychological History

Elicit sources of trauma & resilience

- Assess support systems
- As well as losses, which may be numerous – family, friends, church, coworkers, community
- Substance use
- Sexual history
- History of abuse – sexual, physical, emotional, IPV
- Mental health evaluation & treatment history
- Depression & anxiety screening

An Inclusive Sexual History

- **Tell me about your recent sexual relationships**
 - How many partners have you had in the last 3 months?
 - What are the genders of your partners? *(may need to drill down on this to get at anatomy involved)*
- **What kinds of sex are you having?**
 - Which behaviors might expose you to others' fluids?
 - Which behaviors might expose others to your fluids?
 - How do you protect yourself? (Your partners?)
 - How often do you use barriers? In what situations do you use them, and what are the situations when you don't?

Physical Exam

Transmen

- For transmen on T for > 6 mos, they will have some loss of elasticity -> consider an extra narrow Pederson speculum
- If have lead time, use intravaginal E2 for 4 weeks prior to help elasticity & lubrication
- Consider **HPV test only** rather than cytology
 - less uncomfortable
 - cytology often atrophic d/t T => "abnormal Pap"
- Lorazepam prior to exam can be very helpful

Physical Exam

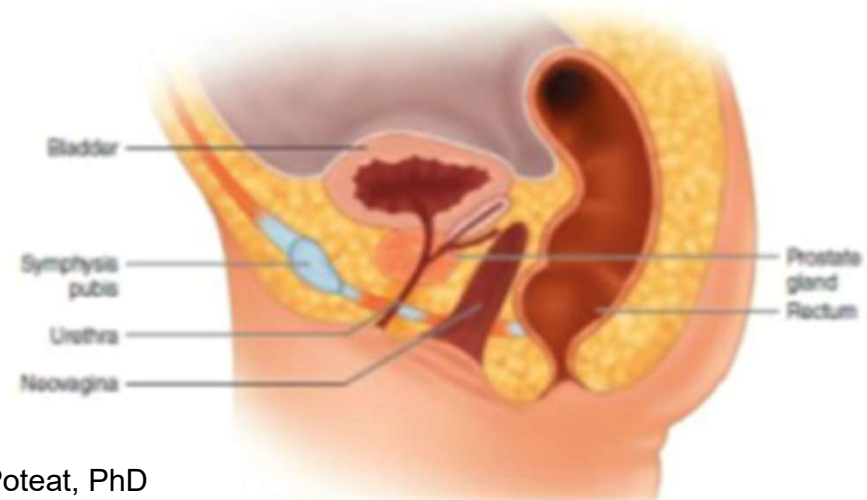
- Afford extra privacy when examining sensitive areas – allow to wait to change into gown & keep that curtain pulled
- Only examine parts of the body that are truly requisite
- Let the patient be in control of the exam
- Act **unsurprised** if there are unanticipated or partially developed body parts



Physical Exam

Transwomen after vaginoplasty

- For neovaginal exam (which is almost never needed), use an anoscope or pediatric speculum
- Their prostates are anterior to t (these are not removed at the time of gender affirmation surgery)



Gender Dysphoria – DSM V

— Previously Gender Identity Disorder, soon(?)
Gender Incongruence in ICD 11

This diagnosis involves the significant distress or problems functioning due to the **dissonance** caused by the difference between one's experienced gender & assigned sex

**Being transgender doesn't equate
with gender dysphoria**

Gender Dysphoria – Criteria

Has at least 2 of the following features, present >6 mos:

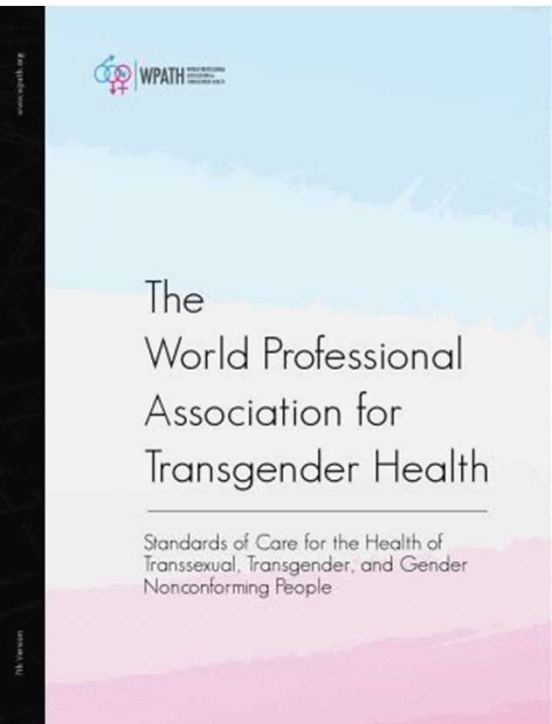
- A marked **incongruence** between one's experienced/ expressed gender & primary &/or secondary sex characteristics
- A strong desire to **be rid of one's** primary &/or secondary sex **characteristics**
- A strong **desire for** the primary &/or secondary sex **characteristics of the other gender**
- A strong desire to be of the other gender
- A **strong desire to be treated as the other gender**
- A strong conviction that one has the typical feelings & reactions of the other gender

Who to Treat

Informed Consent Model:

1. Persistent, well-documented gender dysphoria;
2. Ability to make a fully informed decision and informed consent;
3. Age of majority (18);
4. If significant medical or mental health condition are present, they must be reasonably well-controlled.

I recommend using consent forms for patient education & to ensure all topics are discussed



Gender Affirming Surgeries

- **Top surgeries –**
 - Chest tissue reduction - TM
 - Breast augmentation - TF
- **Bottom surgeries –**
 - Gonadectomy - both
 - Vulvoplasty/ vaginoplasty - TF
 - Hysterectomy, vaginectomy – TM
 - Metoidoplasty/ phalloplasty – TM
- **Facial feminization surgeries -**
 - Nose, brow, cheeks, chin, larynx

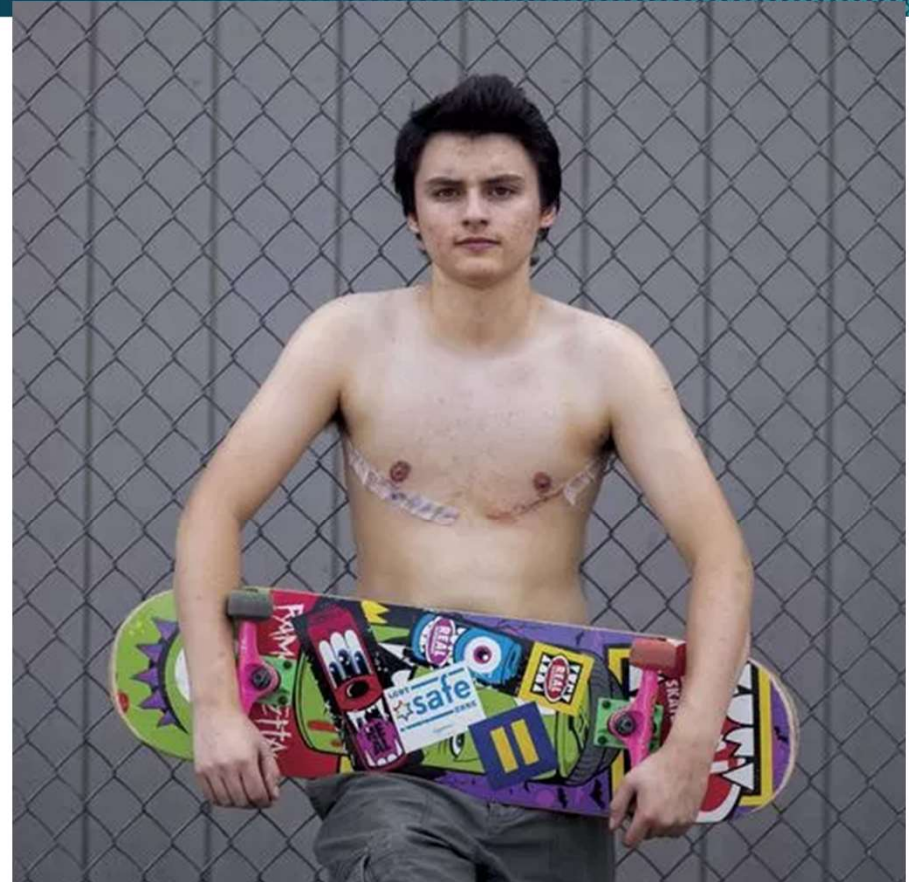
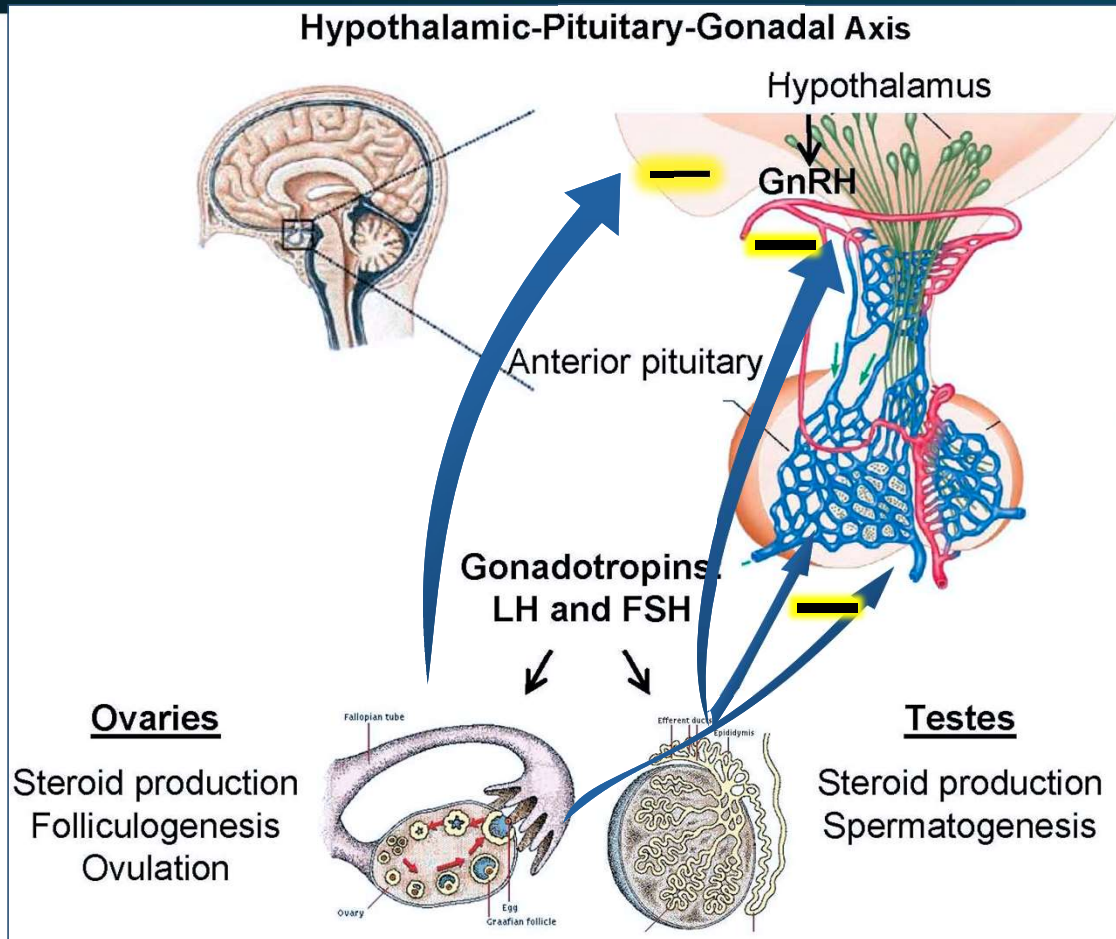


Photo attribution National Geographic, January 2017

Gender Affirming Hormone Therapy



- Transmasculine: **Testosterone**
- Transfeminine: **Estradiol, androgen blockers**

Estrogen & testosterone, even if exogenous, create negative feedback loops that affect LH & FSH production, so that innate gonads will not be stimulated to produce sex steroids.

Gender Affirming Hormone Therapy

Medication	Formulations	Dosing	Comments
Estradiol	Transdermal Oral IM	0.1-0.4 mcg/hr 1-6 mg daily Weekly to biweekly	Transdermal has lowest VTE risk; next safest 17 beta E2; avoid conjugated estrogens & ethinyl estradiol
Adjunctive feminizing options: Spironolactone Progesterone	Oral Oral, micronized/ medroxyprogesterone	50-200 mg qd, can split dose prn 100-200 mg qd 2.5-10 mg qd	Spiro helps with decreasing body hair, some breast development Progesterones not routinely used, ? benefit for breast development, mood. Medroxy has been implicated in VTE in TGW
Testosterone	Gel IM/ SC Patch	20-100 mg daily 25-100 mg weekly 2-6 mg qd (1-3 patches)	Can use T IM every other week if wishes

Want to learn about managing gender affirming hormones & referring for surgeries?

The screenshot shows a SharePoint site interface. On the left, there is a navigation pane with the following items: Plastic Surgery, Primary Care, Referrals, Insurance, Billing Information, and Sexual Health. Below this is the group name 'og_uwm_tgnbtha' and the label 'Private group'. The main content area has a header with 'this site' and a toolbar containing '+ New', 'Send by email', 'Promote', and 'Page details'. The main heading is 'How to use the Trans Health Ally site', followed by the profile of Corinne Heinen, Clinical Associate Professor. At the bottom, a welcome message reads: 'Welcome to the Trans Health Ally O365 group email & SharePoint site! wish to learn more about primary and/or specialty care for transgender'.

Become a Trans Health Ally!

- Access to our group email & Sharepoint site
- Recorded lectures including gender affirming hormone discussion in depth
- Monthly Zoom meetings for cases, didactics – will count as low cost CME
- Email me: cheinen@uw.edu

Efficacy of TDF-FTC for HIV PrEP in Setting of Cross Sex Hormones

What do we know?

Feminizing Hormone Therapy:

- iPrEx OLE, multicenter
- iFACT, Thai Red Cross Centre
- Cottrell, UNC
- Shieh, Johns Hopkins

Masculinizing Hormone Therapy:

- Unexplored

iPrEx RCT & Open Label Extension - Transfeminine Subanalysis

iPrEX (Iniciativa Profilaxis Pre-Exposición) RCT

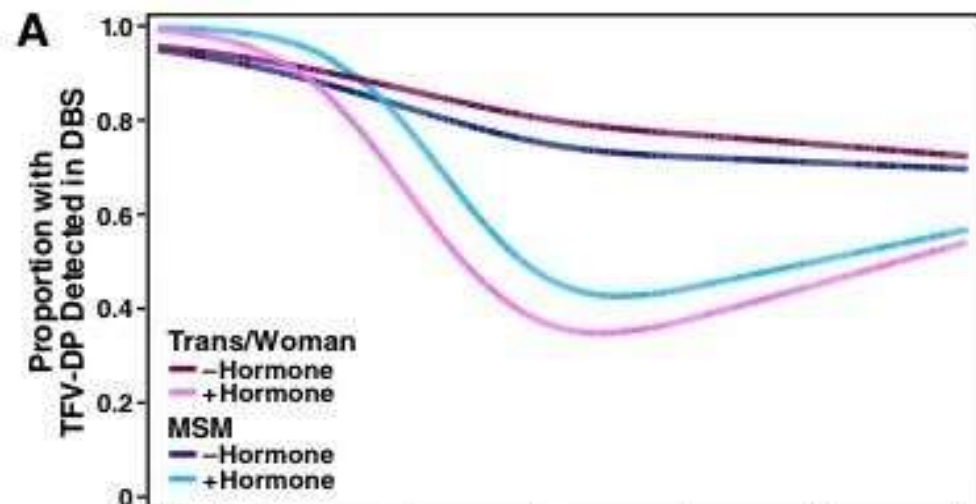
- N=2499, enrollment from Brazil, Ecuador, Peru, South Africa, Thailand & US. All participants were AMAB. 12% identified as TGW, 1% men on FHT, 1% women.
- 25% (163) on FHT: 72% estrogens, 74% progestogens, 23% anti-androgens
- **TGW more:** partners, condomless AR sex, STIs, & transactional sex

iPrEX Open Label Extension – all offered TDF/FTC

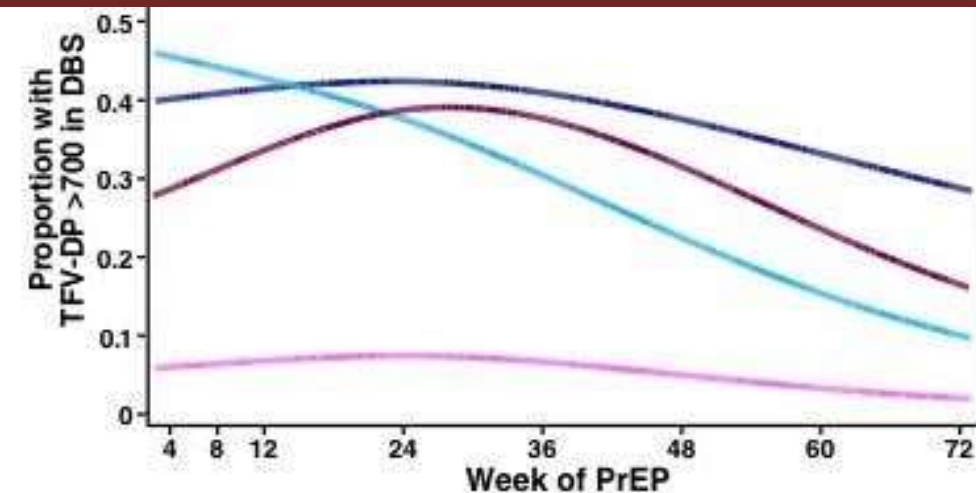
- Intention to treat, N=1225, with 151 being TGW. PrEP uptake: 79% TGW, 76% MSM

iPrEX OLE Results

- 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 ($p=0.74$)



- A. Any TDF-DP in DBS
B. TDF-DP at **therapeutic** levels

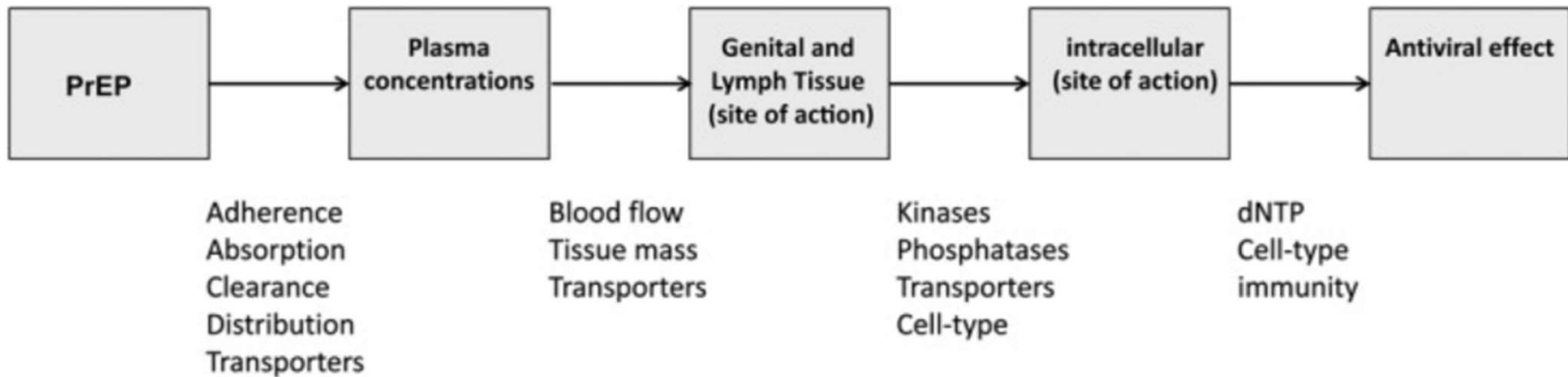


IPrEx OLE Takeaways

- Intention to treat: 11 seroconversions in the intervention group vs 10 in placebo
- As treated: None of the TGW who seroconverted had protective drug levels at the time of detection
- TGW who reported sexual practices conferring the highest risk of HIV infection tended to be less likely to have PrEP drug detected

How Is the Effect on TDF-FTC Levels Mediated?

Pharmacodynamics of TDF-FTC



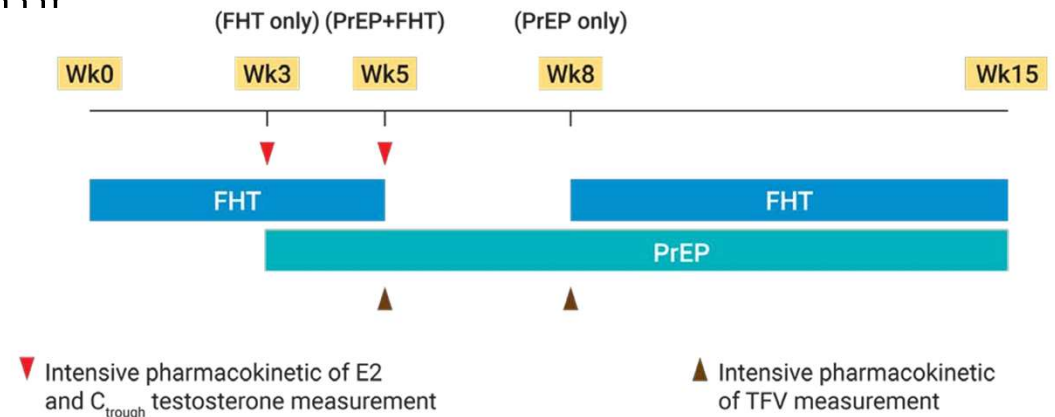
The pharmacologic continuum for TDF-FTC–based PrEP. Potential factors governing this continuum are noted at each step.

From “Pharmacologic Considerations for Preexposure Prophylaxis in Transgender Women”

[J Acquir Immune Defic Syndr. 2016 Aug 15; 72\(Suppl 3\): S230–S234.](#)

iFACT: A Careful Look at Pharmacokinetics

- To determine drug-drug interactions (DDI) between FHT and PrEP
- 20 TGW who had testes & had not received injectable FHT within 6 months were enrolled January - March 2018.
- FHT = estradiol valerate 2mg/day + cyproterone acetate 25 mg/day (no spironolactone)



At pharmacokinetic day, plasma was collected at t=0 (pre-dose), 1, 2, 4, 6, 8, 10, 12, and 24 hours after directly observed medication ingestion with a standardized meal (a total of 9 samples)

Hiransuthikul A et al. *Drug-drug interactions between the use of feminizing hormone therapy and pre-exposure prophylaxis among transgender women: The iFACT study.* 22nd International AIDS Conference (AIDS 2018), Amsterdam. Abstracts TUPDX0107LB, 2018.

iFACT Conclusions

- **Our study demonstrated lower plasma TFV exposure (13%) in the presence of FHT**, suggesting that FHT potentially affects PrEP efficacy among TGW
- **Estrogen exposure was not affected by PrEP**
- Further studies are warranted to determine whether these
 - DDIs occur in PBMC & target tissues as well?
 - DDIs occur with other FHT regimens.
 - Reductions in TFV are clinically significant

TGW on E2 Have Lower TDF/FTC Concentrations During Directly Observed Dosing When Compared to Cis Men

- 8 TGW & 8 CGM, all HIV neg, age 18-65
- DOT
- Very variable FHT regimens, more “real world” E2 dosing than iFACT
- Didn't assess effect of TDF/FTC on hormone levels
- Had to have E2 > 100, CrCl > 70

Varying Hormone Regimens

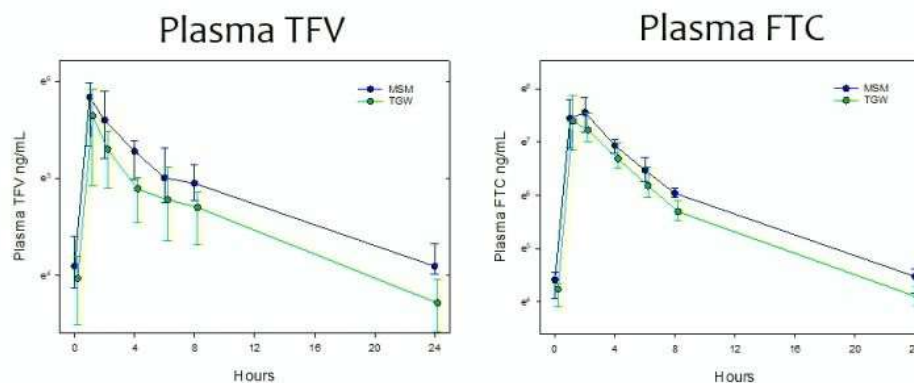
PID	Estradiol Oral	Estradiol IM	Premarin	Spirolactone	Medroxyprogesterone
1010			1.25 mg qd		
1011	6 mg q day			200 mg q day	
1012			1.25 mg qd	50 mg q day	
1017		0.5 mg q 2 wks		50 mg q day	
1018	6 mg q day	20 mg q 2 wks		200 mg q day	
1019	2 mg q day	40 mg q 2 wks	6.25 mg qd		
1020		20 mg q 2 wks		100 mg q day	5 mg q day
1021		1.5 mg q wk		200 mg q day	

Shieh, TGW on E2 Have Lower TDF/FTC Concentrations During Directly Observed Dosing When Compared to Cis Men, HIVR4P Madrid, Oct 2018

TGW on E2 Have Lower TDF/FTC Concentrations During Directly Observed Dosing When Compared to Cis Men

- TGW plasma TFV & FTC plasma concentrations lower by 20%-27%
- Values in range of 4 doses a week
- **Caution:** 4 doses a week of TDF/FTC may not be adequate; daily dosing key

Pharmacokinetics - Plasma



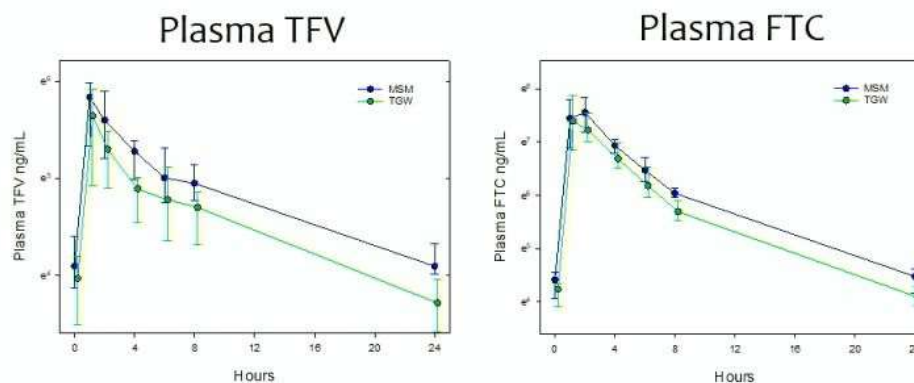
	Plasma TFV		Plasma FTC	
	C_{τ}	AUC ₀₋₂₄	C_{τ}	AUC ₀₋₂₄
% Reduction	20%	27%	26%	24%
p value	0.02	0.07	0.03	0.03

Shieh, TGW on E2 Have Lower TDF/FTC Concentrations During Directly Observed Dosing When Compared to Cis Men, HIVR4P, Oct 2018

TGW on E2 Have Lower TDF/FTC Concentrations During Directly Observed Dosing When Compared to Cis Men

- TGW plasma TFV & FTC plasma concentrations lower by 20%-27%
- Values in range of 4 doses a week
- **Caution:** 4 doses a week of TDF/FTC may not be adequate; daily dosing key

Pharmacokinetics - Plasma



	Plasma TFV		Plasma FTC	
	C _{tau}	AUC ₀₋₂₄	C _{tau}	AUC ₀₋₂₄
% Reduction	20%	27%	26%	24%
p value	0.02	0.07	0.03	0.03

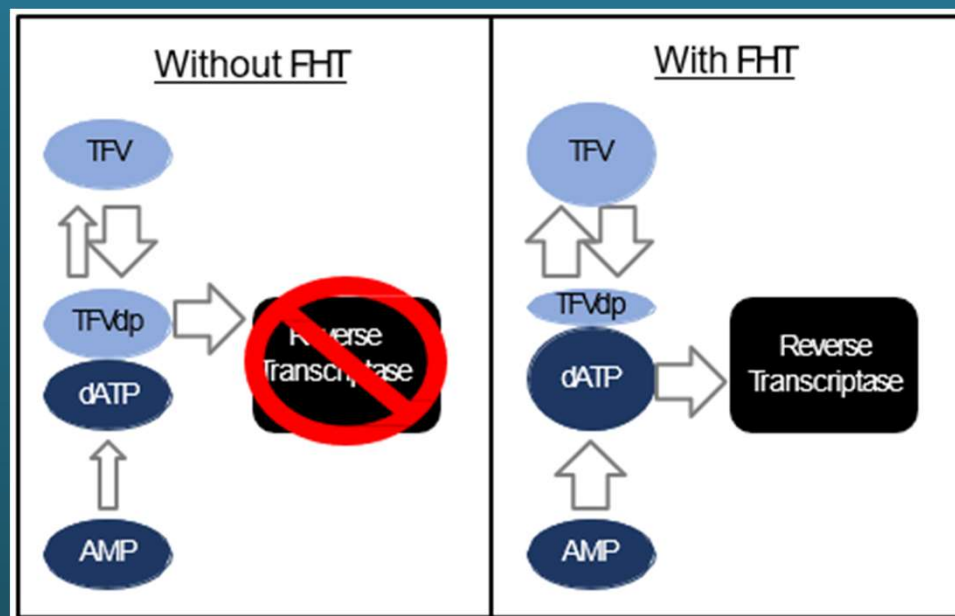
Shieh, TGW on E2 Have Lower TDF/FTC Concentrations During Directly Observed Dosing When Compared to Cis Men, HIVR4P, Oct 2018

Altered TDF/ Pharmacology in TGW: Implications for PrEP

Cottrell:

- Compared plasma & rectal tissue levels of hormones, TFV, dATP
- 4 TGW, all on E2 & spironolactone (1 on progesterone) compared to postmenopausal ciswomen & cismen

Effect of FHT on TFVdp to dATP ratio: TFV modulates dATP concentrations In a counterproductive way

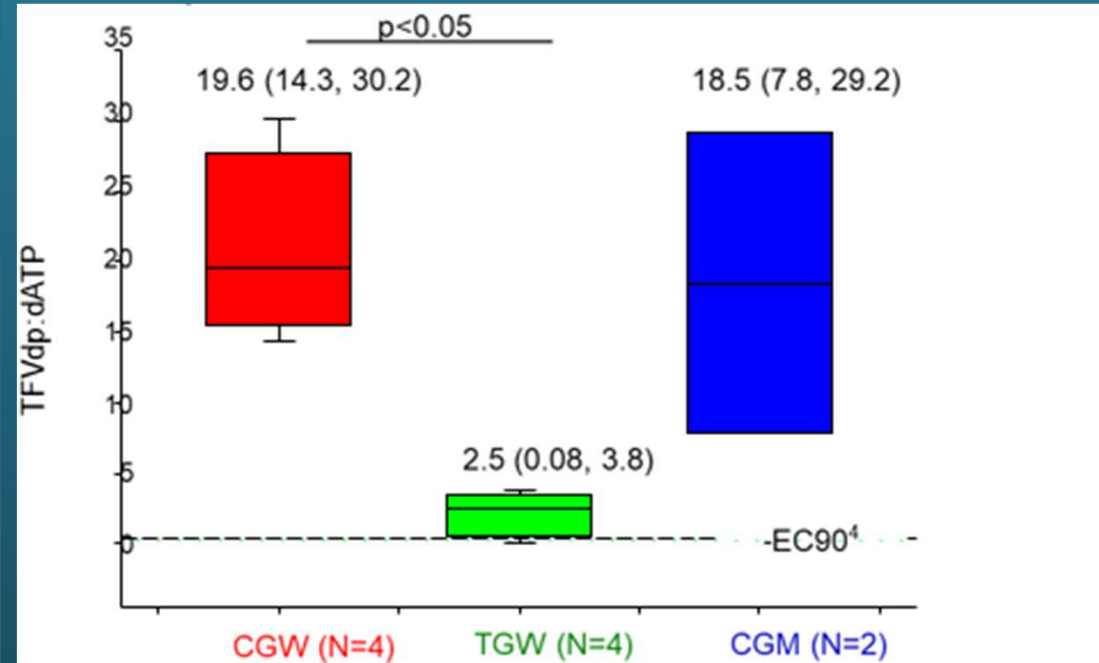


Altered TDF/FTC pharmacology in a transgender female cohort: implications for PrEP, ^{22nd} International AIDS Conference (AIDS 2018), Amsterdam. Abstracts

Cottrell, *Clinical Infectious Diseases*, ciz290, accepted manuscript

Altered TDF/ Pharmacology in TGW: Implications for PrEP

Median rectal TFVdp:dATP by 10-fold among TGW vs CGW or CGM



“We found transgender women taking FHT exhibited a 7-fold lower rectal tissue ratio of PrEP’s active metabolites vs competing deoxynucleotides compared to cisgender women and men ($p=0.03$) that inversely correlated with estradiol ($\rho=-0.79$; $p<0.05$).

Thus, FHT may negatively impact PrEP efficacy.”

Provider Resources

Medical care, including hormone therapy

- <http://transhealth.ucsf.edu/> - complete primary care protocols
- <https://www.lgbthealtheducation.org/> - webinars with free CME
- <http://callen-lorde.org/transhealth/>
- **TransLine Guidelines** (Google same): Collection of expert opinion on hormonal treatment, with pragmatic details & ~equivalent doses
- PrEP Prophylaxis in Trans Populations: DOI:10.1089/lgbt.2018.0086

Endocrine Society Guidelines 2017:

<https://academic.oup.com/jcem/article/102/11/3869/4157558>

Surgical guidelines & policy

- <http://www.wpath.org> (Standards of Care 8 under development)

Case Management Resources

- **Cardea:** organizational change: www.cardeaservices.org -> Training -> Providing Culturally Proficient Services to Transgender and Gender Nonconforming People
- **Special Projects of National Significance: Transgender Women of Color Initiative Intervention Manuals:** <https://targethiv.org/library/spns-transgender-women-color-initiative-manual>. The Howard Brown report is most salient.
- **National Center for Transgender Equality** to change name, legal status & federal documents: <https://transequality.org/documents>
- WA DOL for license change
- Gender Justice League for legal matters and insurance access