

# THE UNIVERSITY of NORTH CAROLINA at CHAPEL HILL

## HIV Transmission Science and Practice



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### RULES OF HIV TRANSMISSION

- THERE ARE THREE (AND ONLY THREE)
   ROUTES OF HIV TRANSMISSION
  - -BLOOD and blood products
  - -SEXUAL mucosal contact, including penilevaginal contact, anal contact, and possibly fellatio
  - -VERTICAL transmission from mother to child pre- or peri-natal

# Transmission of HIV Biological Requirements

#### **Infectious**

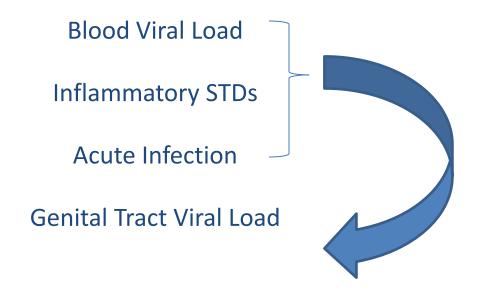
Inoculum (concentration)
Characteristics of the virus

### **Susceptibility**

Hereditary resistance
Innate resistance
Acquired (immune)
resistance

### **Amplified Transmission of HIV**

### Infectiousness



### Susceptibility

Genital ulcers

**Inflammatory STDs** 

Lack of Circumcision

Cervical ectopy

Genetics

### Average risk and individual risk of HIV transmission

Average risk can be assessed reasonably confidently from studies of large numbers of people but cannot be used to confirm individual risk because risk of HIV transmission is influenced by factors such as:

- type of sexual activity (vaginal, anal, oral, other)
- roles during penetrative sex: insertive vs receptive
- amount of HIV in the bodily fluid to which the at-risk person is exposed
- whether or not a male or female condom has been used correctly and consistently
- presence or absence of other sexually transmitted infections (STIs) in both partners
- whether or not the penis of the potentially exposed male partner has been circumcised

### Quantifying risk of acquiring HIV in a sex act

- A single value for the heterosexual infectivity of HIV-1 fails to reflect the variation associated with important cofactors.
  - commonly cited value 1 in 1000 risk per act is based on very heterogeneous estimates, ranging from zero transmissions after more than 100 penile-vaginal contacts to one transmission for every 3.1 episodes of heterosexual anal intercourse
- The value of 1 per 1000 was estimated among stable couples with low prevalence of high-risk cofactors and represents a lower bound
- Cofactor effects are important to include in epidemic models, policy considerations, and prevention messages
- Examples of infectivity differences per 1000 contacts:
  - 8.1 (95 % CI 0·4–15·8) more for uncircumcised versus circumcised men
  - 6.0 (3.3–8.8) more for individuals with genital ulcer disease
  - 1.9 (0.9–2.8) comparing late-stage to mid-stage index cases
  - 2.5 (0.2–4.9) comparing early-stage to mid-stage index cases

Source: KA Powers et al. Lancet Inf Dis 2008

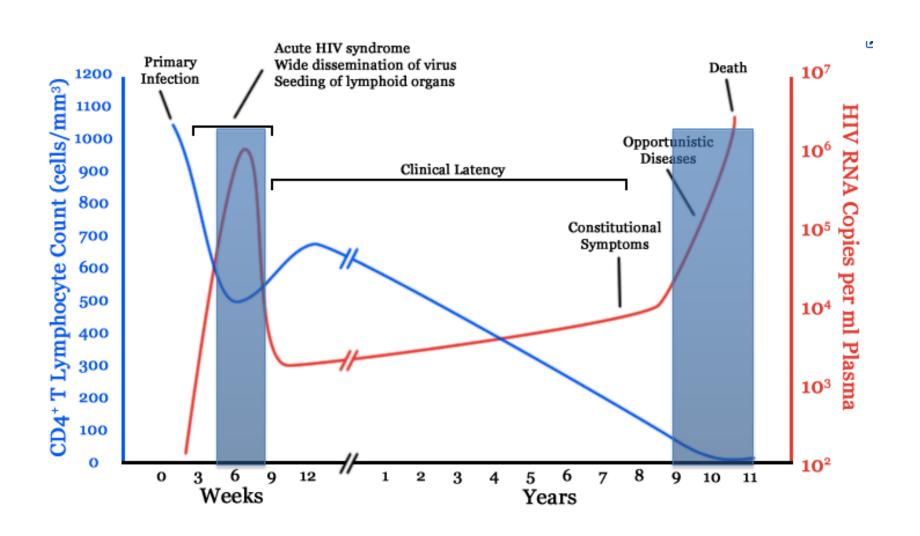
### Risk of HIV transmission per act

(in the absence of antiretroviral drugs)

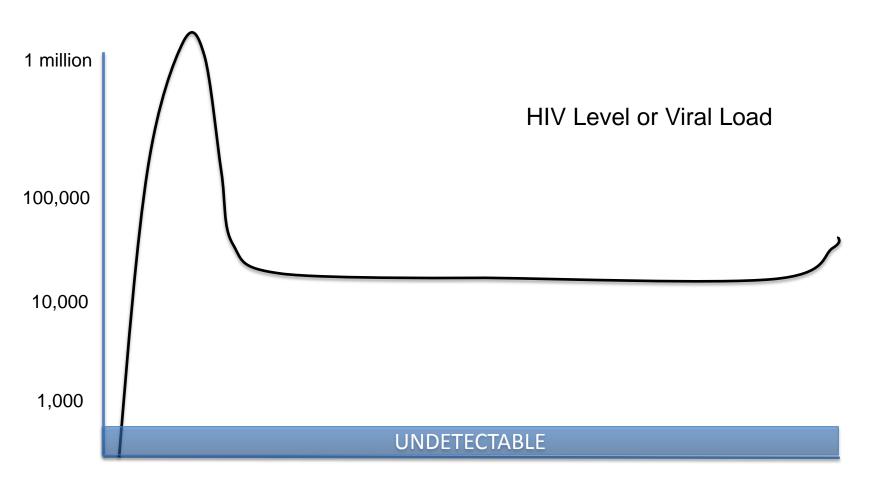
- Receptive anal sex: 1.7% [95% CI 0.3-8.9] 1 in 70
- Early HIV infection: 9.2 times [4.5-18.8] asymptomatic phase
- Late HIV infection: 7.3 times [4.5-11.9] asymptomatic phase
- Presence or history of genital ulcers in either person increases per-act risk 5.3 times [1.4-19.5]
- Estimates for acquisition among non-circumcised men at least double circumcised

Source: Boily et al. Lancet Infect Dis 9: 118-29 2009

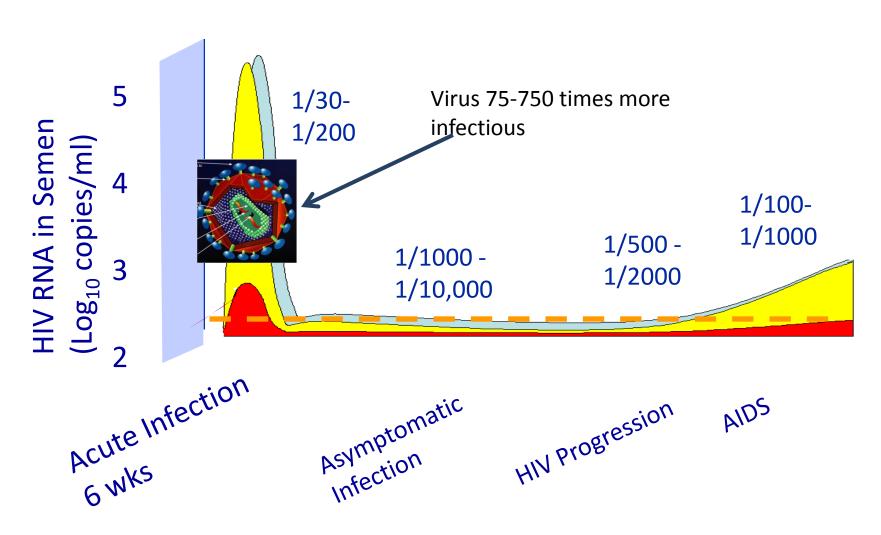
## **Timing Matters**



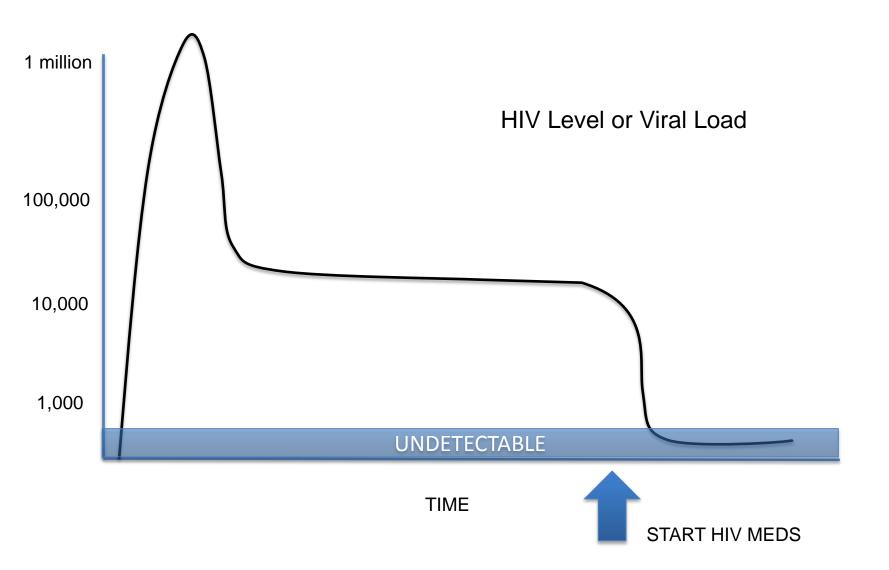
### **Viral Load Matters**



### **Increased Risk of Sexual Transmission of HIV**

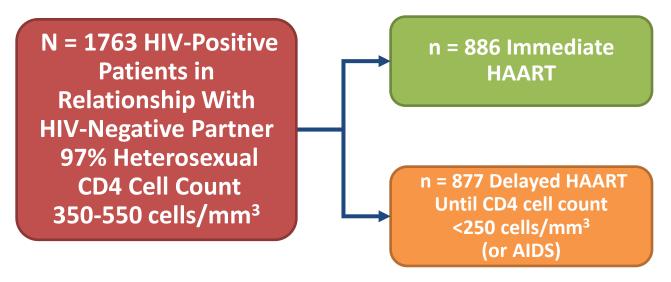


### **Viral Load Matters**



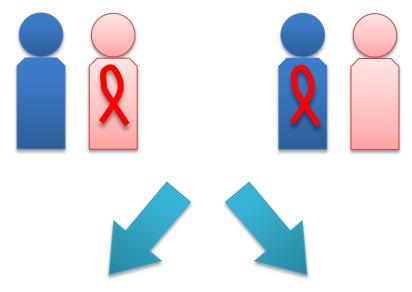
## US Federally Sponsored study - HPTN 052: HIV Treatment is HIV Prevention

Randomized, placebo-controlled efficacy and safety study
13 sites in Africa, Asia, and the Americas



- All patients received ongoing safer-sex education/condoms
- Study stopped 4 years early by DSMB (May 2011)

# HPTN 052 asked, how well do ARVs prevent transmission, if at all?

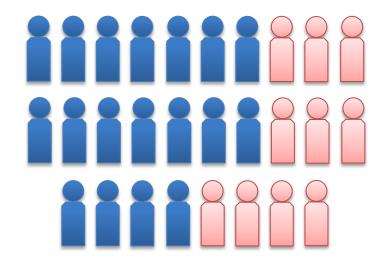


886

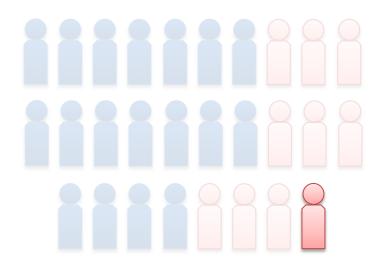
immediate start (350-500)

877

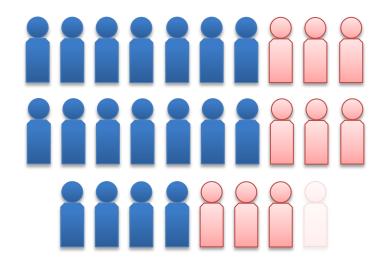
delayed start (≤ 250)



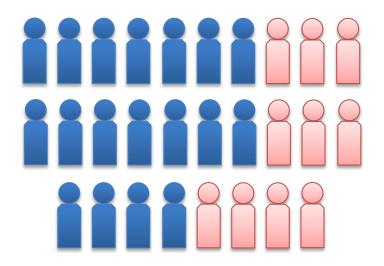
28 linked transmissions



1 from immediate group



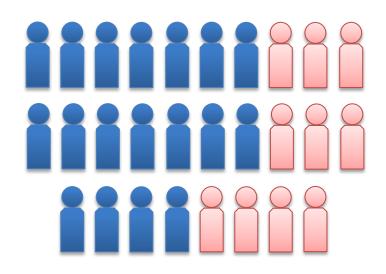
27 from the delayed group



96%

reduced risk of transmission if you treat the HIV+ partner

# HPTN 052 proved that treatment has a clear public health benefit

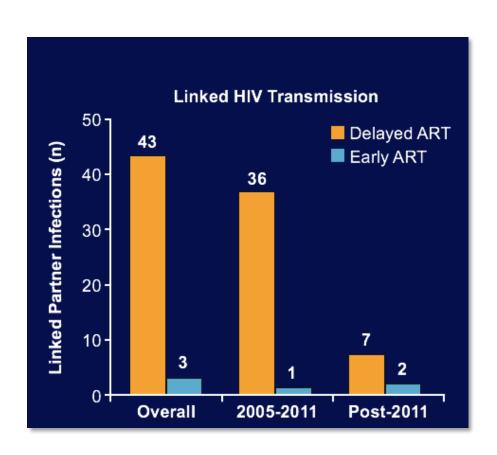


96%

reduced risk of transmission if you treat the HIV+ partner

### **HPTN 052: Follow-Up Key Results**

- N = 46 linked HIV transmissions to HIV-negative partner observed
  - Overall 93% reduction in risk of transmission with early therapy
- N = 8 linked partner infections diagnosed after index partner started ART
  - Recently initiated ART (n = 4)
  - Virologic failure (n = 4)
- No linked HIV transmissions where index partner suppressed on ART
- Rate of unlinked infections similar between arms

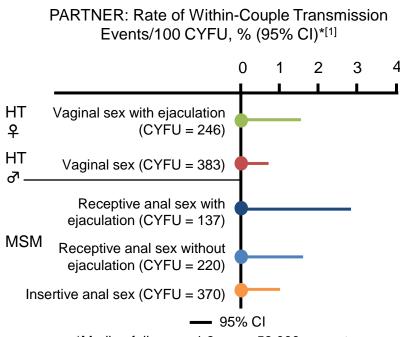


### **PARTNER Study: Risk of HIV Transmission With Condomless Sex on Suppressive ART**



- Observational study in heterosexual and MSM serodiscordant couples  $(N = 888 \text{ couples})^{[1]}$
- No linked transmissions
- Similar results in Opposites Attract study of ~ 6000 acts of condomless anal intercourse<sup>[2]</sup>





\*Median follow-up: 1.3 yrs; ~ 58,000 sex acts

# **Opposites Attract: PrEP in Serodiscordant MSM Couples**

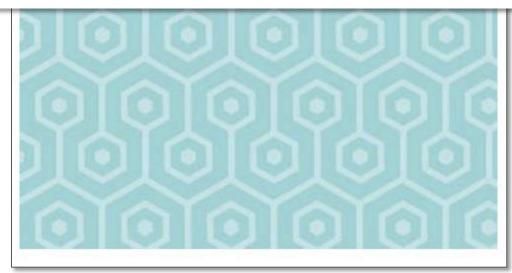
- International, prospective cohort study assessing the incidence of linked HIV transmission in serodiscordant MSM couples when HIV-infected partner on ART and virologically suppressed
  - N = 343 couples; 591 CYFU; 16,889 acts of CLAI
- For HIV-infected partner, HIV-1 RNA undetectable for 95% of CYFU; for uninfected partner, PrEP use for 19% of CYFU
- No linked infections; 3 infections occurring during study contracted from outside partners



# Public health and HIV viral load suppression

#### Key Message:

There is growing scientific consensus that people living with HIV who are taking effective antiretroviral therapy and whose virus is suppressed to undetectable levels will not transmit HIV sexually.



prevention ABOUT

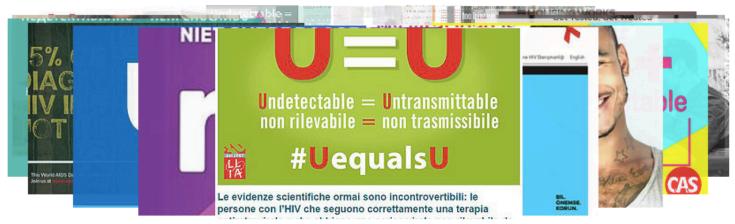
access campaign







### Undetectable = Untransmittable



Click on the photos to scroll through examples of Community Partner U=U campaigns. For an extensive list of U=U messaging from around the world see our <u>U=U Message Guide</u>.

### **#UequalsU**

The U.S. Centers for Disease Control and Prevention (CDC) <u>"Dear Colleague" letter</u> confirms that "people who take ART daily as prescribed and achieve and maintain an undetectable viral load have effectively no risk of sexually transmitting the virus to an HIV-negative partner." (September, 2017)

## CDC on board with U=U?



"[P]eople who take ART daily... and maintain an undetectable viral load have effectively no risk of sexually transmitting the virus to an HIV-negative partner."

Dear Colleague,

Today is National Gay Men's HIV/AIDS Awareness Day. On this day, we join together in tal....

among gay and bisexual men and ensure that all gay and bisexual men living with HIV get the care they need to stay healthy. Gay and bisexual men are severely affected by HIV. More than 26,000 gay and bisexual men received an HIV diagnosis in 2015, representing two-thirds of all new diagnoses in the United States, and diagnoses increased among Hispanic/Latino gay and bisexual men from 2010 to 2014.

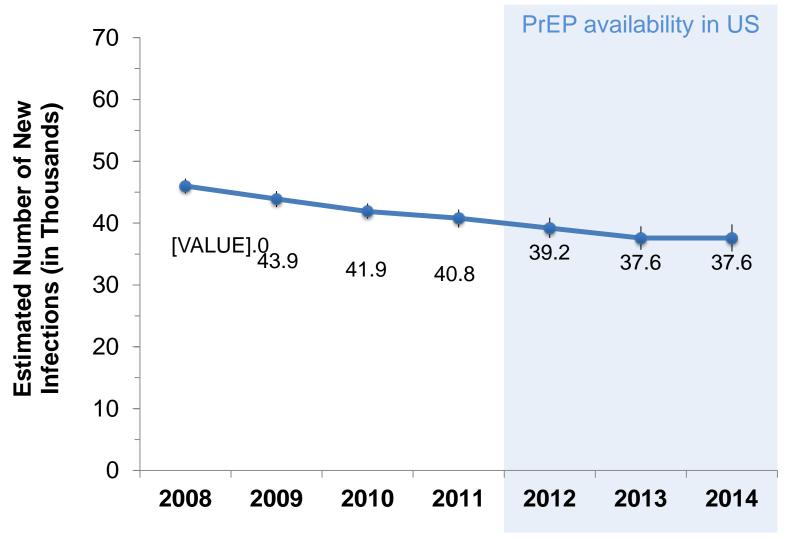
However, recent trends suggest that prevention efforts are slowing the spread of HIV among some gay and bisexual men. From 2010 to 2014, HIV diagnoses fell among white gay and bisexual men and remained stable among African American gay and bisexual men after years of increases.

Scientific advances have shown that antiretroviral therapy (ART) preserves the health of people living with HIV. We also

https://www.cdc.gov/hiv/ library/dcl/ dcl/092717.html

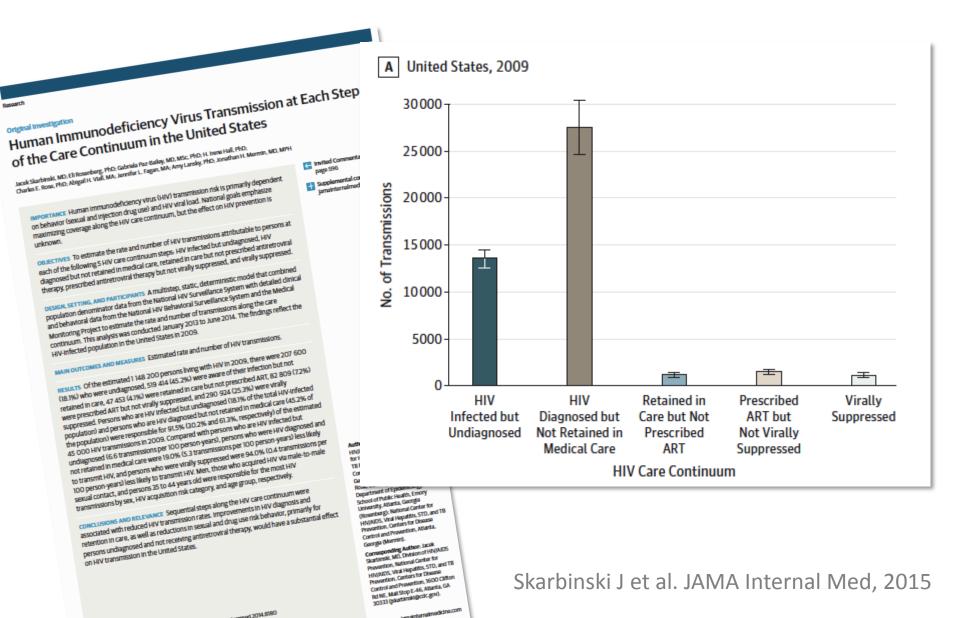
### HIV incidence in United States, 2008-2014

By CD4 model (2017)



Hall HI et al. JMIR Public Health Surveill 2017 Feb 3;3(1):e8. Satcher Johnson A et al. JAIDS 2017 Oct 1;76(2):116-22

## Its not just about HIV medication



## Other exposures: Healthcare Worker Post-Exposure Prophylaxis

### **DEFINITION OF EXPOSURE**

- Percutaneous exposure to contaminated body fluid
- Mucous membrane exposure to contaminated body fluid
- Non-intact skin expose to contaminated body fluid
- Infectious fluids: blood, CSF, vaginal secretions, semen, synovial, pleural, peritoneal, pericardial, amniotic
- Feces, nasal secretions, saliva, sputum, sweat, tears, urine, and vomitus are not considered potentially infectious unless they are visibly bloody.

### **RULES OF HIV for LAWYERS – Part 1**

- ALL TRANSMISSION OF HIV REQUIRES AN INFECTED SOURCE AND A SUSCEPTIBLE HOST
- MOST SEXUAL ENCOUNTERS ARE CONCORDANT NEGATIVE
- EFFICIENCY OF TRANSMISSION IS GREATLY AFFECTED BY INSTANTANEOUS COFACTORS THAT DETERMINE THE INFECTIOUSNESS OF THE INDEX CASE AND THE SUSCEPTIBILTY OF THE NEGATIVE PARTNER AT ONE (SPECIAL) MOMENT IN TIME
- MOST SEXUAL TRANSMISSION OF HIV OCURS IN NEWLY FORMED RELATIONSHIPS, ESPECIALLY WHEN THE HIV POSITIVE PARTNER IS NEWLY INFECTED (~4.9 MONTHS OF MAXIMAL CONTAGION RISK)
- "LONG-TERM" (>3 MONTHS) RELATIONSHIPS WITH AN HIV POSITIVE PERSON CAN RESULT IN AN HIV TRANSMISSION EVENT, BUT GENERALLY WITH LESS EFFICIENCY THAN OBSERVED THAN WHEN THE INFECTED PARTNER IS AT THE EARLY OR LATER STAGES OF HIV DISEASE
- LATEX CONDOMS REDUCE HIV TRANSMISSION SIGNIFICANTLY

### **RULES OF HIV FOR LAWYERS – Part 2**

HIV THERAPY REDUCES INFECTIOUSNESS
 GREATLY IF THE MEDICATION IS TAKEN AND
 THE VIRAL LOAD IS SUPPRESSED IN THE
 SHARED FLUID

### HIV CRIMINALIZATION

An Overview of Current Laws, Science and Implications for Practice

Stephen R. Scarborough, P.C. Criminal Defense Attorney 100 Peachtree Street NW, Suite 2095 Atlanta, Georgia 30303 404.825.2275 http://scarboroughfirm.com

### Stephen Scarborough

#### **OVERVIEW**

- Introduction to HIV Criminalization
  - Scope and features of HIV criminal laws
  - What's wrong with HIV criminal laws?
  - PJP Guiding Principles and Consensus Statement
- Practice Questions and Issues
  - Questions for a Client in an HIV-Related Criminal Case
  - Annotated List of Motions and Issues in an HIV-Related Criminal Case
- Ethical Considerations in HIV Criminal Case Representation
- What Can Criminal Defense Attorneys Do?

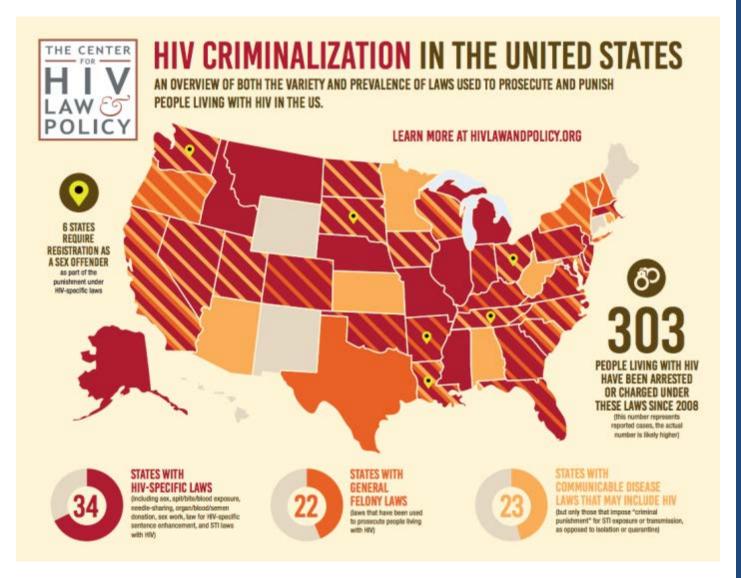
## SCOPE AND FEATURES OF HIV CRIMINAL LAWS

HIV criminalization is the prosecution and imprisonment of people living with HIV for things that are perfectly legal or only minor crimes for people who have not tested positive.

## SCOPE AND FEATURES OF HIV CRIMINAL LAWS

- 34 states and two U.S. territories have HIV-specific criminal laws, including sentence enhancements for sex workers or for underlying sex crimes.
- Two types of behavior that are primarily targeted:
  - Sexual contact without prior disclosure of HIV+ status (may include vaginal, anal or oral sex but is often defined to include activities posing no or low risk of HIV transmission)
  - Spitting, biting, or other modes of exposure to bodily fluids (often specific to law enforcement or corrections officers)
- PLHIV also prosecuted under general criminal laws (e.g., reckless endangerment or attempted homicide)

The Center for HIV Law and Policy, HIV Criminalization in the United States: A Sourcebook on State and Federal HIV Criminal Law and Practice (2017), <a href="http://www.hivlawandpolicy.org/sourcebook">http://www.hivlawandpolicy.org/sourcebook</a>



### SNAPSHOT OF HIV CRIMINAL LAWS

HIV criminal laws are present across the United States.

### **ELEMENTS OF HIV CRIMINAL LAWS**

#### What gets you in trouble?

- Tested HIV-positive
- Had any kind of contact viewed as "sex"
- Scuffle with law enforcement + HIV status
- Being a sex worker while living with HIV
- HIV+ survivor of sexual assault

#### What doesn't help?

- Verbal consent
- In most states: Lack of intent to harm/transmit, or level of risk. Use of condoms, sticking to oral sex, low viral load, engaging in near-zero risk conduct usually not relevant

The Center for HIV Law and Policy, HIV Criminalization in the United States: A Sourcebook on State and Federal HIV Criminal Law and Practice (2017), <a href="http://www.hivlawandpolicy.org/sourcebook">http://www.hivlawandpolicy.org/sourcebook</a>

## WHAT ARE PRIMARY PROBLEMS WITH CRIMINAL HIV LAWS AND PROSECUTIONS?

- No mens rea requirement: unlike other crimes against the person, prosecutor does not have to prove intent to harm/intent to transmit
- Revolve around perception that having HIV is physically and socially life-ending
- Treatment as prevention is important-but this is less legally relevant than the significant reduction in risk of suffering and premature death thanks to ART
  - HIV's low per-act transmission risk has been known for years
     Courts have said that even very small risk is "significant" when the risked outcome is death; lowering risk has reduced, not ended, charges
  - Those most vulnerable to prosecution less likely to have treatment access

Consensus Statement on HIV "Treatment as Prevention" in Criminal Law Reform, July 2017, http://www.hivlawandpolicy.org/resources/consensus-statement-hiv-treatment-as-prevention-criminal-law-reform

### WHAT'S WRONG WITH HIV CRIMINAL LAWS?

#### The disconnect between HIV criminalization and science:

CDC's Estimated Per-Act Probability of acquiring HIV, by type of exposure (2015)

- Insertive vaginal sex (4 per 10,000 exposures)
- Receptive vaginal sex (8 per 10,000 exposures)
- Insertive anal sex (11 per 10,000 exposures)
- Receptive anal sex (138 per 10,000 exposures)
- Insertive oral sex (Low)
- Receptive oral sex (Low)

<u>Spitting cannot transmit HIV; biting poses near-zero risk. Sex</u> <u>while virally undetectable on effective therapy poses effectively</u> <u>zero risk.</u>

Estimated Per-Act Probability of Acquiring HIV from an Infected Source, by Exposure Act, CDC, https://www.cdc.gov/hiv/risk/estimates/riskbehaviors.html

CDC, "Dear Colleague," September 27, 2017 at: https://www.cdc.gov/hiv/library/dcl/dcl/092717.html

### WHAT'S WRONG WITH HIV CRIMINAL LAWS?

HIV criminal laws are based on the idea that HIV is a highly transmissible, "deadly weapon," and that an HIV diagnosis is equivalent to a death sentence

- The reality is that HIV is not an easy disease to transmit.
- HIV is a manageable, chronic condition, not a death sentence
- With today's treatment, a person diagnosed in their 20s can expect to enjoy a near-normal lifespan

See generally Hasina Samji, et al., Closing the Gap: Increases in Life Expectancy Among Treated Individuals in the United States and Canada, 8 PLoS One 1 (2013), available at <a href="http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0081355">http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0081355</a>.

### WHAT'S WRONG WITH HIV CRIMINAL LAWS?

### Contrary to the claims of some supporters, HIV criminal laws do not promote public health.

- No evidence that these laws or prosecutions deter risky behaviors or actually promote disclosure
- No evidence that laws have reduced rate of new HIV diagnoses
- Disincentive to learn HIV status
- Alienates patients from health care providers
- Sends one-sided message regarding prevention responsibility
- Disproportionately impacts marginalized populations, including people of color, LGBTQ communities, sex workers, and undocumented immigrants.
- Promotes stigma, which pushes people to the margins and weakens effective response to HIV

## POSITIVE JUSTICE PROJECT GUIDING PRINCIPLES FOR REFORM

### PositiveJusticeProject

- a. No disease-specific criminal law or sentence enhancement;
- b. Must prove specific intent to harm + conduct likely to do intended harm;
- c. Steps to reduce risk = no intent to harm;
- d. No airborne/casually transmitted diseases;
- e. Proportionate penalty, no sex offender status;
- f. No felony laws for transmitting/exposing another to disease; and
- g. No new or increased penalties for others.

### DEFENDING CRIMINAL CASES THAT INVOLVE HIV

### First Principles

- Challenging outdated, inaccurate information re: HIV with current science on the routes and risks of HIV transmission, treatment efficacy, and life expectancy
- Tackling HIV Sensationalism and Stigma
- The Criminal Statute in your State?
- From the Science to . . . the Science: Experts Are Critically Important

### QUESTIONS FOR A CLIENT IN AN HIV-RELATED CRIMINAL CASE

- Parties to the Alleged Incident
  - Who is the complaining witness (CW)?
- Factual Basis for the Charge

Beginning of Investigation or Criminal Case

Client's History and Circumstances

# LEGAL ISSUES IN AN HIV-RELATED CRIMINAL CASE

Privacy of client's health information

Defenses to Nondisclosure of Status

Use of Medical Evidence

Appellate and Postconviction Litigation

### MOTIONS TO FILE IN AN HIV-RELATED CRIMINAL CASE

Suppress health-related information

Constitutional challenges

Evidentiary Matters and Motions in Limine

Sentencing issues

### ETHICAL CONSIDERATIONS IN HIV CRIMINAL CASE REPRESENTATION

- Issues related to disclosure of health records
- Dealing with client's family
  - How to manage the information stream with client's family?
- In court representation
  - How much can be discussed on the record in light of health privacy issues?
  - Should attorneys waive reading of the charges in light of the privacy issues?

### ETHICAL CONSIDERATIONS: CONFIDENTIALITY

Persistent stigma toward persons in risk groups, and myths about infectiousness, prejudice clients inside and outside of court

ABA Model Rule of Professional Conduct 1.6, Confidentiality of Information

- "A lawyer shall not reveal information relating to the representation unless the client gives informed consent, the disclosure is impliedly authorized in order to carry out the representation or [enumerated exceptions apply]."
- Duty exists to safeguard confidential information and to limit breadth and effect of disclosures when they happen or are necessary. Commentary to Rule 1.6, Note 18: "Factors to be considered in determining the reasonableness of the lawyer's efforts [to protect confidences] include, but are not limited to, the sensitivity of the information, the likelihood of disclosure if additional safeguards are not employed, the cost of employing additional safeguards, the difficulty of implementing the safeguards, and the extent to which the safeguards adversely affect the lawyer's ability to represent clients[]."

In court, before the media, and even among clients' family and supporters, do not assume that client has disclosed

# ETHICAL CONSIDERATIONS: CONFIDENTIALITY

Consider current knowledge about HIV transmission methods and risks, efficacy of treatments, and manageable nature of HIV disease when considering exceptions to general rule of confidentiality.

 Permissive disclosures "to prevent reasonably certain death or substantial bodily harm" or to prevent future crime, RULE 1.6(B)(1), (2), are unlikely to apply.

Criminal defendants suffer in particular because

- Usually impossible to argue that HIV status isn't relevant to alleged offense
- Public nature of criminal charges means status is disclosed when client charged, often before counsel even enters the case
- Media treatment of case can be irresponsible, even hysterical;
   "predator" storylines bring mouse clicks

### ETHICAL CONSIDERATIONS: CONFIDENTIALITY

While a single disclosure can mushroom, counsel should guard against further breaches of confidentiality

- Alert prosecutors, court officials, and state health agencies to disclosure limits in state public health statutes -- and insist on compliance
  - Request hearings in chambers beginning at first appearance: arraignment, status conferences, pretrial release, to extent possible under state law
  - Demonstrate compelling need for privacy protections in face of open courtroom policies and public trial requirements; standards are tough, see Presley v. Georgia, 130 S. Ct. 721, 724 (2010), but may persuade court at least as to nonjury matters.
- Move in limine to bar or limit testimony about matters not strictly relevant to proceedings, such as details of treatment

## WHAT CAN CRIMINAL DEFENSE ATTORNEYS DO?

- Counsel people living with HIV with legal questions, drafting amicus curiae briefs, or providing actual legal representation;
- Advise CHLP staff on local practice and procedures, particularly in the attorney's area of expertise;
- Serve as a point of contact for a case CHLP is monitoring and documenting;
- Review draft modernization legislation, CHLP publications, and other documents;
- Endorse PJP Consensus Statement & post on website; and
- Join the HIV Legal Collaborative (HLC). To learn more go to http://www.hivlawandpolicy.org/initiatives/hiv-legalcollaborative.