

PREVENTION AND HIV CARE

PREVENTION IS CARE
Screen for risky behavior.
Prescribe healthy behavior.



ACT
against
AIDS

Learning Objectives

- Describe the preventive measures that should be incorporated into the clinical care of patients with HIV infection
- Discuss the role of ART in reducing the risk of HIV transmission
- Identify high-risk behaviors associated with HIV transmission and discuss approaches to address these behaviors
- Review the role that Partner Services plays in reducing HIV transmission and how to maximize the use of Partner Services
- Discuss the importance of retention in care in the overall HIV prevention strategy
- Assess the benefits of incorporating HIV prevention measures into the clinical care of persons with HIV infection

ART, antiretroviral therapy; HIV, human immunodeficiency virus.



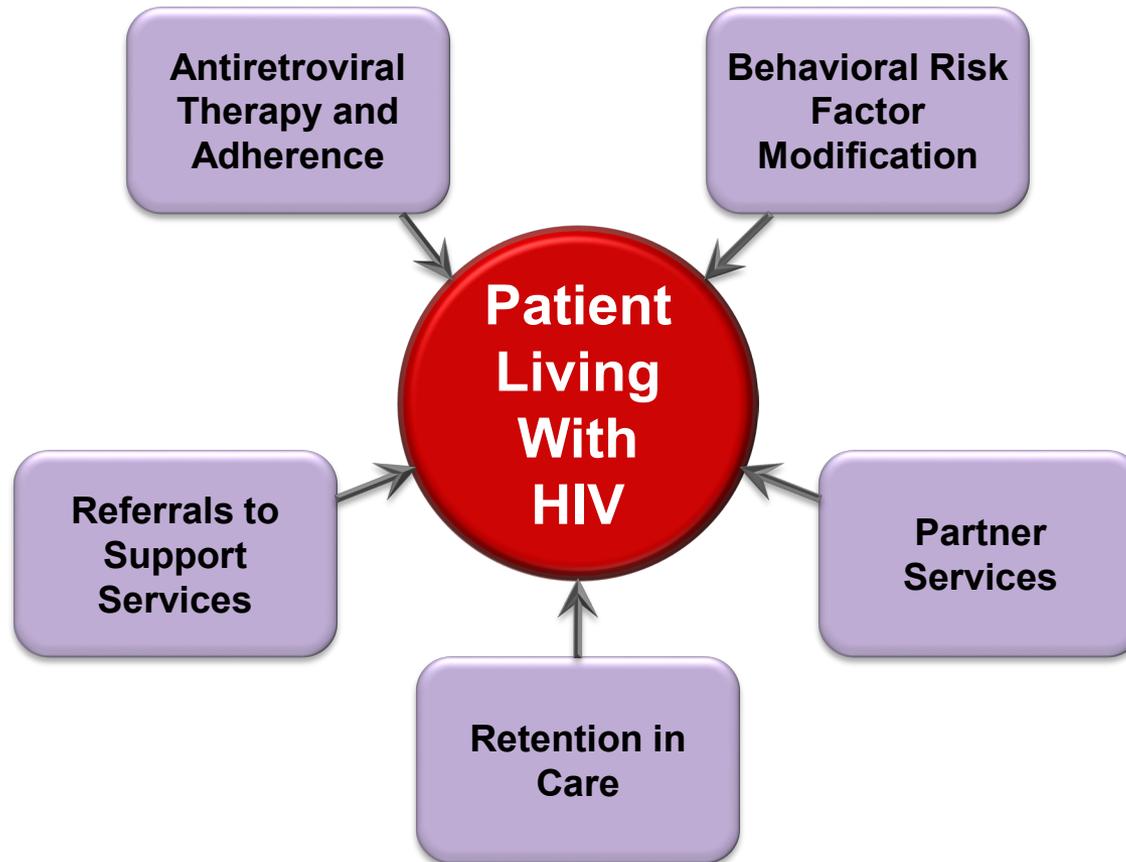
Incorporating Prevention Into the Medical Care of Persons Living With HIV

- HIV transmission is a low-probability but high-consequence event
- Before 2003, HIV prevention programs were directed primarily at persons who were HIV-negative
- In 2003, a new initiative to prevent HIV transmission was developed, focusing mainly on HIV-infected persons and their partners
- These recommendations are currently being revised and will include contributions from AAHIVM and HIVMA

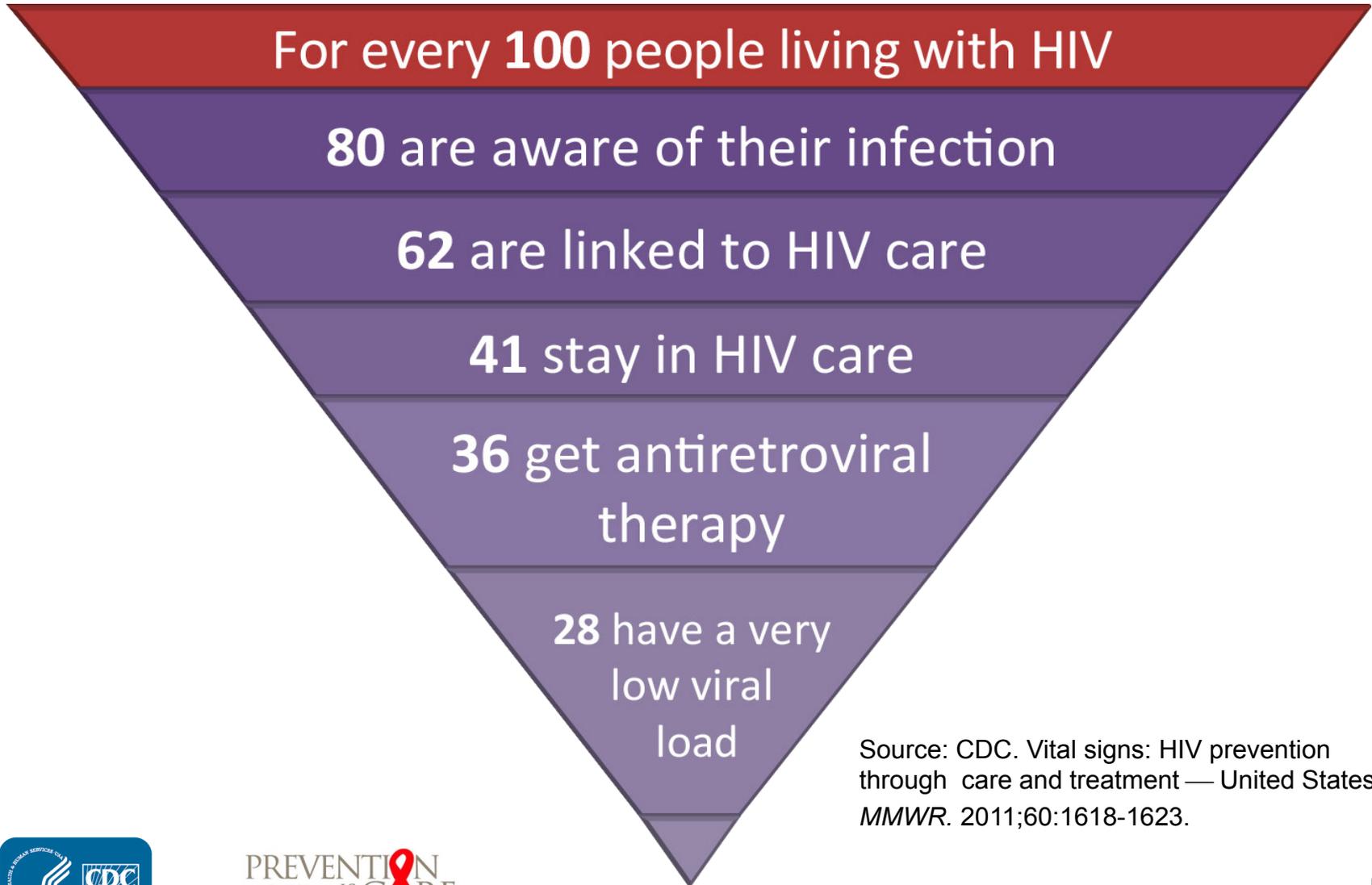
AAHIVM, American Academy of HIV Medicine; HIVMA, HIV Medicine Association; HRSA, Health Resources and Services Administration; *MMWR*, Morbidity and Mortality Weekly Report; NIH, National Institutes of Health.



Prevention and HIV Care



HIV Care in the United States

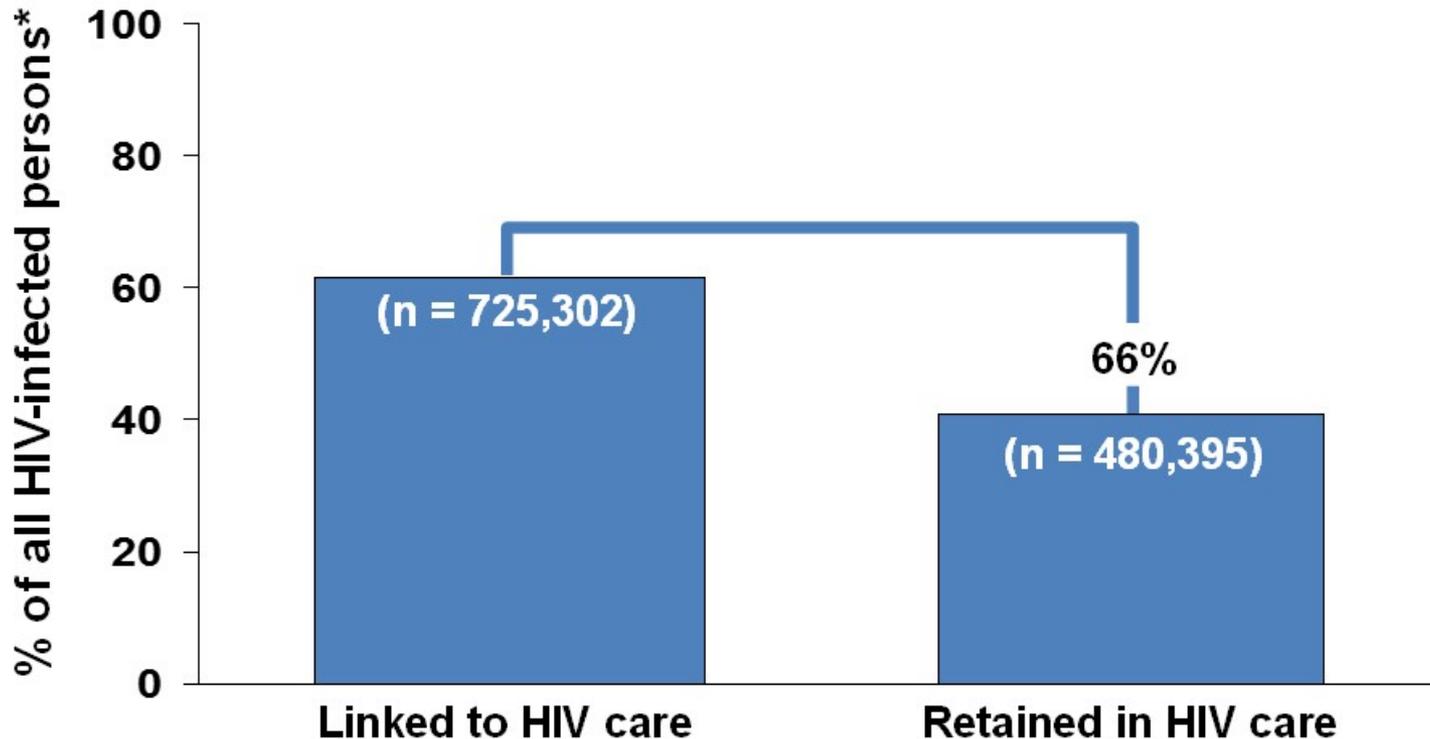


Source: CDC. Vital signs: HIV prevention through care and treatment — United States. *MMWR*. 2011;60:1618-1623.



66% of HIV-Infected Persons in the U.S. Linked to Care Are Retained in Care

Number and Percentage of HIV-Infected Persons Linked to Care Who Are Retained in Care



*N = 1,178,350 persons 13 years old or older at the end of 2008

Source: CDC. Vital signs: HIV prevention through care and treatment — United States. *MMWR*. 2011;60:1618-1623.



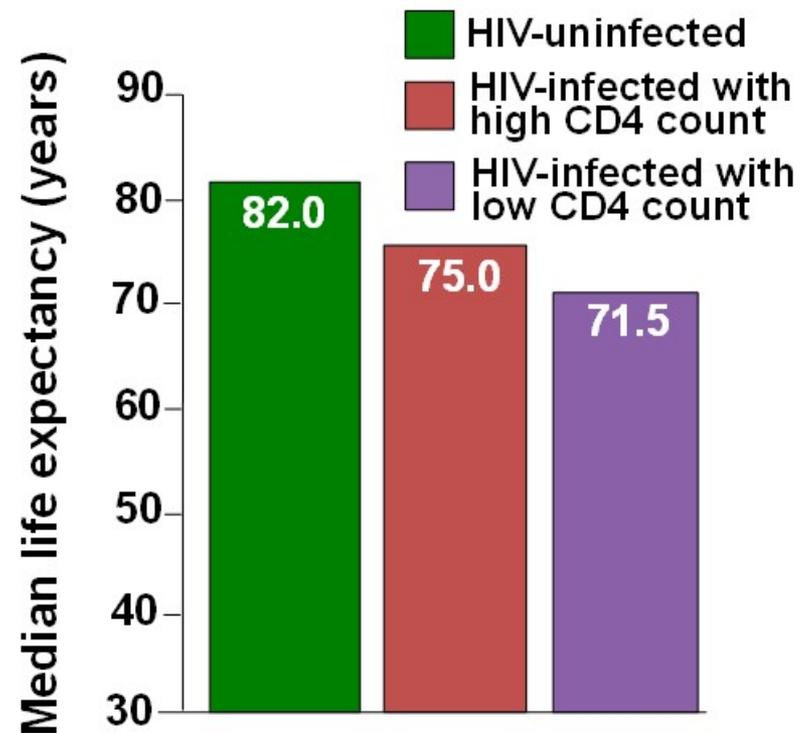
Higher CD4 Count at Time of Diagnosis Predicts Greater Life Expectancy

- A computer simulation model of HIV infection was used to estimate life expectancy of a hypothetical 30-year-old MSM who became HIV infected in 2010
- The key variable was rate of diagnosis, defined by the CD4 cell count at the time of diagnosis
- The greatest risk of excess mortality was delayed diagnosis, represented in this model by a low CD4 count

MSM = men who have sex with men.

Source: Nagakawa F, et al. *AIDS*. 2012;26:335-343

Predicted Life Expectancy According to Median Baseline CD4 Count at Time of Diagnosis



Antiretroviral Therapy

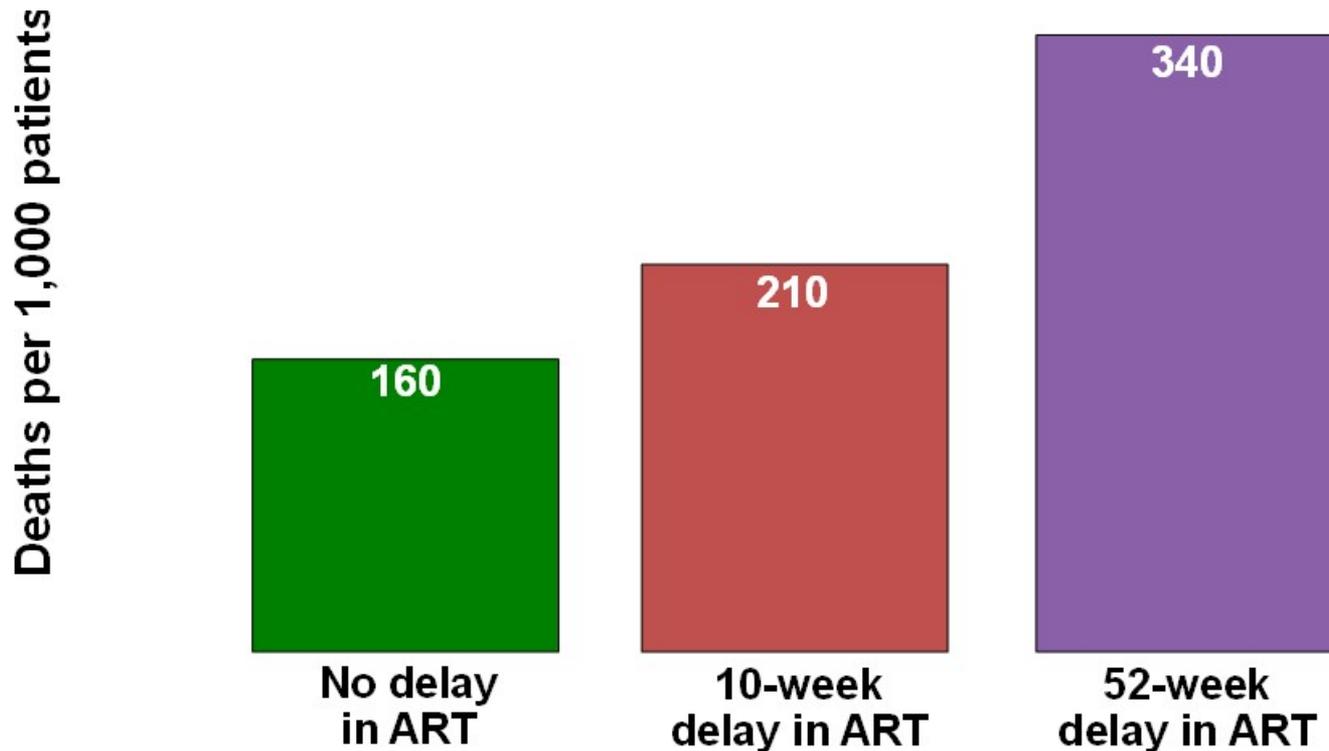
Case History

- JH is a 32-year-old woman with HIV infection diagnosed 2 years ago
- Her most recent lab tests show a CD4 count of 526 cells/mm³ and an HIV RNA of 46,200 copies/mL
- She has a history of injection drug use (now on chronic methadone) and chronic HCV infection, but no other active medical issues
- For the past 3 months, she has had a new boyfriend who is HIV-negative
- She and her boyfriend do not use condoms
- She states she will try to use condoms regularly, but she cannot promise this will happen
- She does not use any other form of birth control
- At this time she has a very stable social situation and is working part-time
- She is interested and willing to take antiretroviral medications if you recommend them



Mortality by Delay in ART

Increased Mortality With CD4 Count <150 cells/mm³ With Delay in ART



Source: Hoffmann CJ, et al. *J Acquir Immune Defic Syndr*. 2013;63:105-111.



May 2014 DHHS ART Guidelines: When to Initiate Therapy in Treatment-Naïve Patients

**ART is recommended for all HIV-infected individuals.
The strength of this recommendation varies on the basis
of pre-treatment CD4 cell count.**

CD4 Cell Count	Recommendation for ART
<350 cells/mm ³	AII: strongly recommended based on data from randomized controlled trials
350-500 cells/mm ³	All: strongly recommended based on data from well-designed nonrandomized trials or observational cohort studies with long-term clinical outcomes
>500 cells/mm ³	BIII: moderately recommended based on expert opinion

Note:* Effective ART also has been shown to prevent transmission of HIV from an infected individual to a sexual partner; therefore, ART should be offered to patients who are at risk of transmitting HIV to sexual partners (the strength of this recommendation varies according to mode of sexual transmission: **AI for heterosexual transmission and **AIII** for male-to-male and other modes of sexual transmission).

Source: AIDS info. Guidelines for the Use of Antiretroviral Agents in HIV-1-Infected Adults and Adolescents. May 2014. Available at: <http://aidsinfo.nih.gov/contentfiles/lvguidelines/adultandadolescentgl.pdf>



ART, Serodiscordant Couples, and HIV Transmission: Study Design

HPTN Study 052

1,763 serodiscordant couples (97% heterosexual) with CD4 count between 350-550 cells/mm³

Randomization

Group 1: HIV-infected partner immediately began ART (886 couples)

Group 2: HIV-infected partner began ART when CD4 count fell below 250 cells/mm³ or developed AIDS-related illness (877 couples)

Both groups received HIV-related care that included:

- Counseling on safer sex practices and free condoms
- Treatment for sexually transmitted infections
- Regular HIV testing and frequent evaluation
- Treatment for any complications related to HIV infection

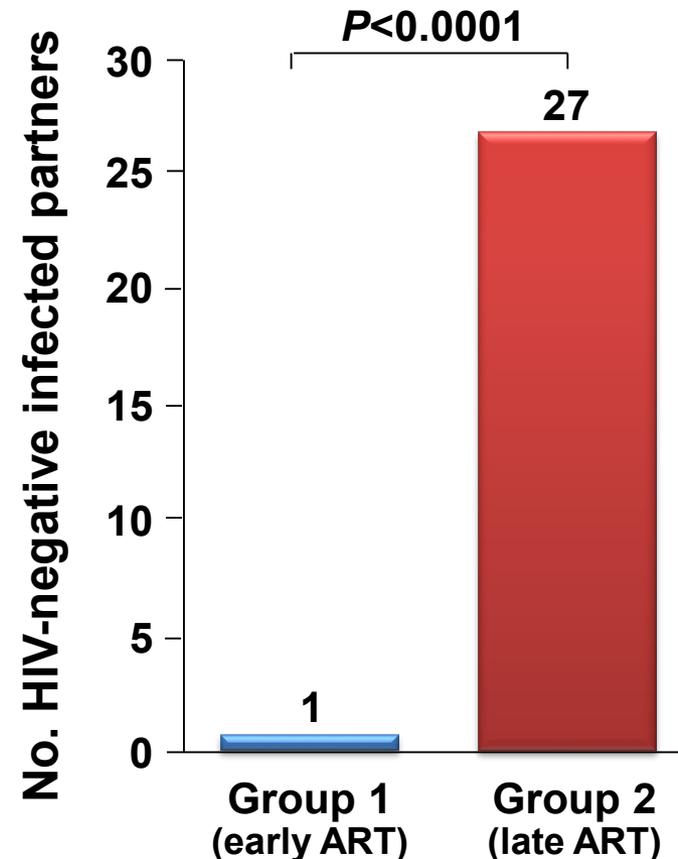
Source: Cohen MS, et al. *N Engl J Med.* 2011;365:493-505



ART, Serodiscordant Couples, and HIV Transmission: Study Results

- ART initiation substantially protected HIV-negative sexual partners from acquiring HIV infection
 - **Group 1:** Early treatment group—only 1 partner infected, with a 96% reduction in risk of HIV infection
 - **Group 2:** Late treatment group—27 partners infected by the HIV-infected participant
- The difference was highly statistically significant ($P<0.0001$)

• Effect of Early vs. Late Initiation of ART on HIV Transmission



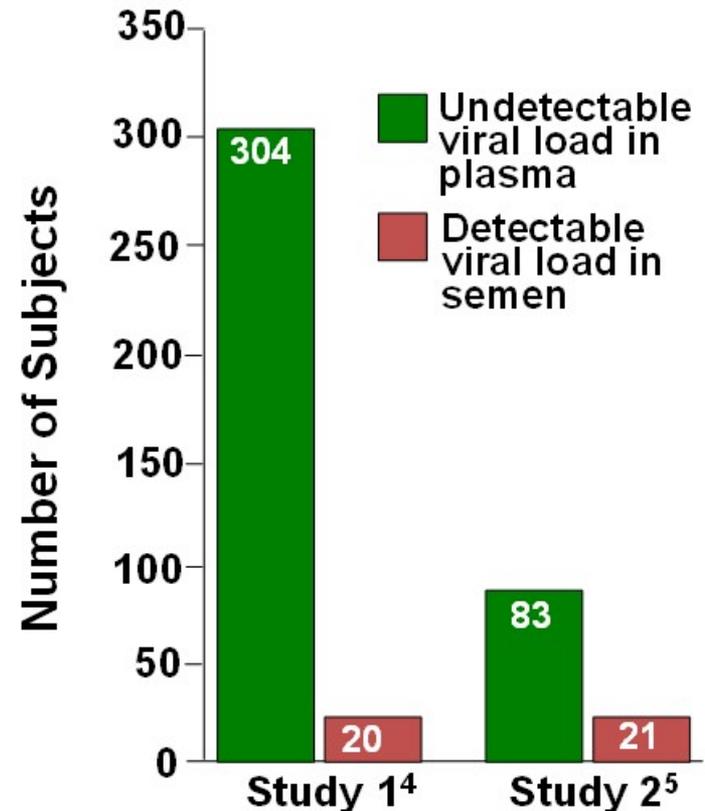
Source: Cohen MS, et al. *N Engl J Med.* 2011;365:493-505.



Undetectable Viral Load Does Not Guarantee Against Transmitting HIV

- ART lowers the viral load in genital fluids, but HIV can sometimes be present in genital fluids even when it is undetectable in the blood¹⁻³
- Two studies measured HIV-1 viral load in semen of HIV-infected men with undetectable virus in plasma^{4,5}
 - **Study 1:** 20/304 men (6.6%) had detectable viral load in semen⁴
 - **Study 2:** 21/83 men (25.3%) had detectable viral load in semen⁵
- The authors concluded that seminal fluid HIV titers pose a potential transmission risk in sexually active men with undetectable viral load in blood^{4,5}

Discordant Blood/Semen Results in Men With Undetectable Plasma Viral Load



Sources: 1. Vernazzi PL, et al. *AIDS*. 2000;14:117-121. 2. Zhang H, et al. *N Engl J Med*. 1998;339:1803-1809. 3. Barroso PF, et al. *JAIDS*. 2003;32:435-440. 4. Lambert-Niclot S, et al. *AIDS*. 2012;26:971-975. 5. Politch JA, et al. *AIDS*. 2012;26:1535-1543.



Preventing Transmission of HIV

ART reduces but does not eliminate the risk of sexual HIV transmission

Risk Reduced

- Lower plasma RNA associated with decreased HIV in genital secretions¹⁻⁴
- Plasma HIV viral load directly related to risk of sexual HIV transmission^{5,6}
- Observational studies and clinical trials show significantly lower rates of HIV transmission in serodiscordant heterosexual couples after viral suppression on ART²

But Risk Not Eliminated

- HIV present in genital secretions of persons with controlled plasma HIV RNA²⁻⁴
- Belief in efficacy of ART may lead to greater risky behavior^{7,8}
- Sexually transmitted infections and genital irritation can increase risk of HIV transmission^{9,10}
- Potential for transmission of resistant virus¹¹

Sources: 1. Quinn TC, et al. *N Engl J Med*. 2000;342:921-929; 2. Chakraborty H, et al. *AIDS*. 2001;15:621-627; 3. Stürmer M, et al. *Antivir Ther*. 2008;13:729-732; 4. van Sighem A, et al. *J Acquir Immune Defic Syndr*. 2008;48:104-108; 5. Kalichman SC, et al. *Sex Transm Dis*. 2008;35:55-60; 6. Crepaz N, et al. *JAMA*. 2004;292:224-236; 7. Rottingham JA, et al. *Sex Transm Dis*. 2001;28:579-597; 8. Kovacs A, et al. *Lancet*. 2001;358:1593-1601; 9. Rotchford K, et al. *Sex Transm Dis*. 2000;27:243-248; 10. Bangsberg DR, et al. *J Acquir Immune Defic Syndr*. 2002;31(Suppl 3):S107-S111; 11. Baeten JM, et al. *Sci Trans Med*. 2011;3:77ra29.



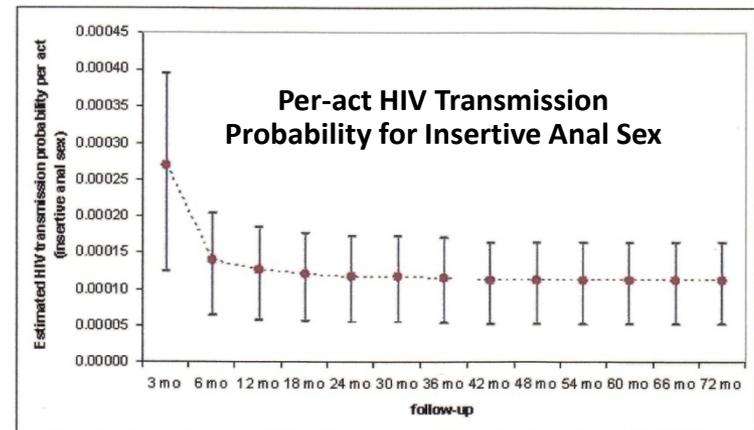
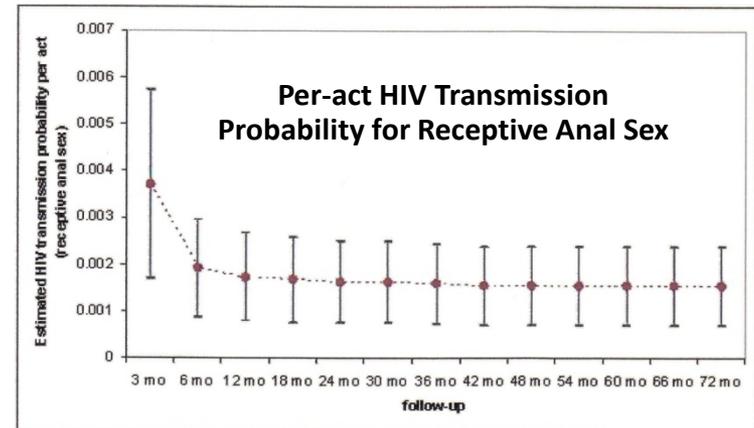
HIV Transmission May Not Be Zero With ART

Data from British Columbia reported at CROI 2011 on 1,095 HIV-infected MSM patients who received ART between 1/1/2000 and 2/28/2009¹

- ART is widely but not universally available^{1,2}
- Adherence is not perfect but is >75%^{1,2}
- Modeling found that the per-act HIV transmission probability was²
 - Highest during the first 3 to 6 months of ART
 - Very low (but not zero) from 12 to 72 months of ART
- ART coupled with other interventions might reduce HIV/AIDS among MSM

MSM, men who have sex with men.

Sources: 1. Lima V, et al. 18th CROI, Feb 27-Mar 2, 2011; Boston, Mass. Abstract 486; 2. Vasarhelyi K, et al. 18th CROI, Feb 27-Mar 2, 2011; Boston, Mass. Poster 1026.

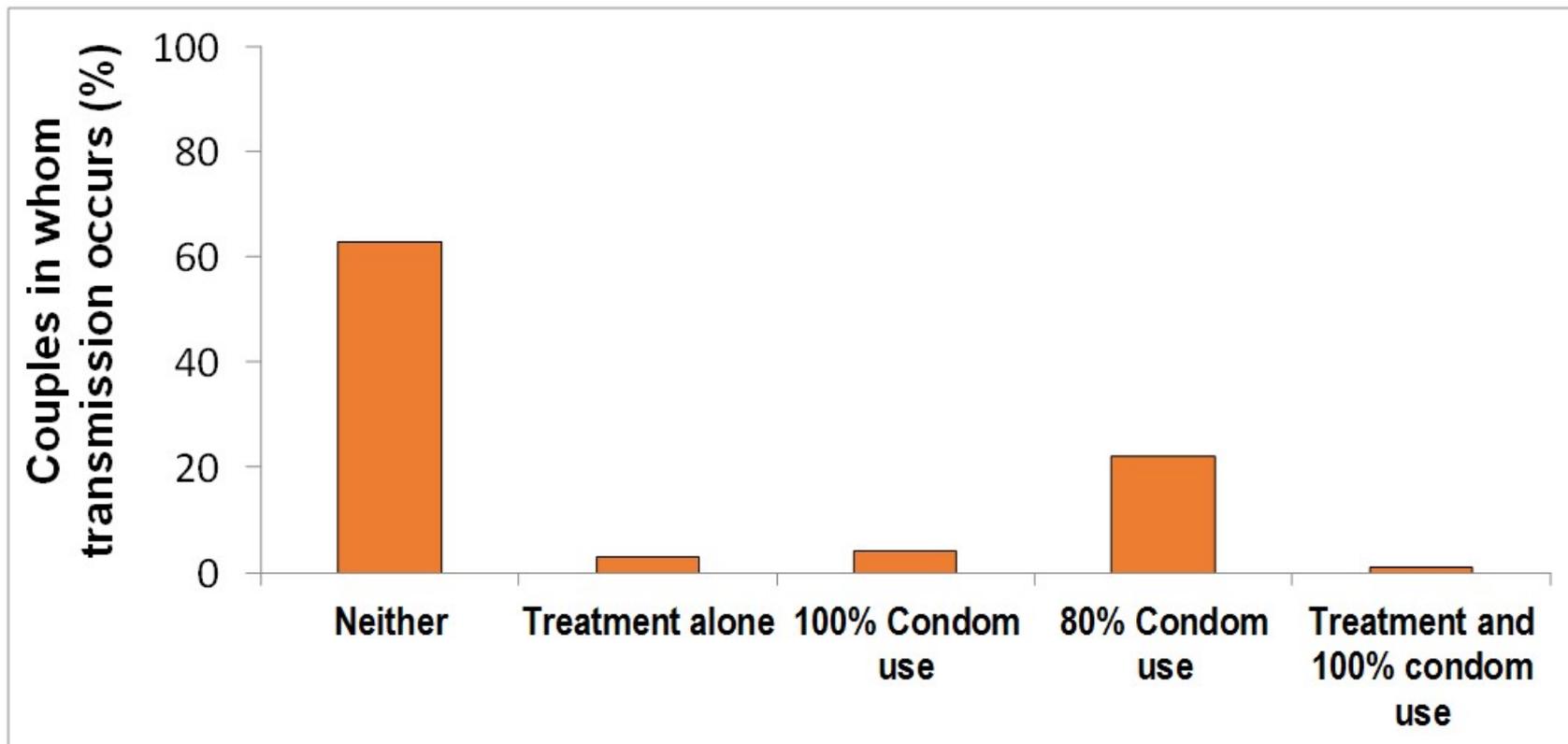


Reproduced from: Lima V, et al. 18th CROI, Feb 27-Mar 2, 2011; Boston, Mass. Abstract 486.



Impact of ART and Condoms on Risk of Sexual Transmission of HIV

Estimated HIV Transmission Risk From >100 Sex Acts in Serodiscordant Male Couples



Source: Adapted from Garnett GP, et al. *Lancet*. 2008;372:270-271.



Variables That Affect Adherence to ART

- Individual/cognitive factors¹⁻³
 - Patient not ready
 - Lack of organization in daily routine
 - Fear of HIV-infected status disclosure
 - Lack of social support
 - Too busy and forgetting
 - Homelessness
 - Not seeing the need for medications
 - Not understanding treatment benefits
 - Doubt about treatment effectiveness
 - Afraid of treatment
 - Medication side effects
 - Needing a treatment break
 - Tired of taking medication
- Clinical Issues⁴
 - Treatment competence
 - Regimen characteristics
- Comorbid Conditions⁴⁻⁷
 - HCV or HBV co-infection
 - Substance/alcohol abuse and psychological symptoms
- Environmental Issues²
 - Distance to clinic
 - Lack of insurance

Sources: 1. Macdonnell KE, et al. *AIDS Patient Care STDS*. 2011;25:47-52; 2. Wakibi SN, et al. *AIDS Res Ther*. 2011;8:43; 3. Milloy MJ, et al. *AIDS Patient Care STDS*. 2012;26:60-67; 4. Atkinson MJ, et al. *AIDS Patient Care STDS*. 2009;23:903-914; 5. Parsons JT, et al. *Health Psychol*. 2008;27:628-637; 6. Sandelowski M, et al. *AIDS Care*. 2009;21:953-966; 7. Reback CJ, et al. *AIDS Care*. 2003;15:775-785.



Improving Adherence to ART

- Establish trusting relationship with patient
- Establish readiness to start ART
- Identify potential barriers to adherence before starting ART
- Provide resources for the patient
- Involve the patient in decision making, including antiretroviral regimen selection
- Discuss patient's concerns about ART
- Adapt schedule to patient's lifestyle
- Refer patient to needed resources
- Prepare for, evaluate, and manage side effects and discuss adherence at each visit
- Assess and simplify ART regimen if possible

Source: DHHS Adult and Adolescent HIV Treatment Guidelines, 2009.



How Often Do You Ask Your Patients About Their Medication Adherence?

1. When their viral load test shows virologic breakthrough
2. Whenever they ask me a question about it
3. When they tell me that they have not been taking their medications
4. Whenever I can remember to do so
5. At every visit



Assessing Adherence Readiness

- Defer ART until patients are assessed for anxiety and depression
- Consider “practice run” with vitamins or placebo
- Initiate ART only when confident the patient is committed
- Assess adherence at every visit by asking open-ended questions such as:
 - "How many times did you miss your meds last week?"
 - "Which doses are the most difficult for you to remember to take?"

Source: Hardy WD. The art of ART adherence. *HIV Specialist*. October 24, 2012; Vol 4, No.4:30-32.
Available at: www.aahivm.org.



Discussion Question

All of the following are true of Study HPTN 052 except

- A. The vast majority of serodiscordant couples enrolled in the study were heterosexual
- B. HIV-infected subjects in Group 1 began ART immediately after enrollment while those in Group 2 began ART only when the CD4 count fell below 250 cells/mm³
- C. Only subjects in Group 2 received ancillary HIV-related care such as counseling on safer sex practices
- D. Entry criteria required a CD4 count between 350 and 550 cells/mm³



Modifying Behavioral Risk Factors

Case History

- GR is a 26-year-old man with HIV infection diagnosed 6 months ago
- He has a CD4 count of 672 cells/mm³ and an HIV RNA of 86,200 copies/mL
- He uses crystal methamphetamine episodically and has had a history of depression since age 19
- He is on no medication
- He presents with a purulent urethral discharge for 2 days
- He has had 3 male sexual contacts in past 4–6 weeks
- He states that he discloses his HIV-infected status and uses condoms most of the time
- Gram stain of his urethral discharge shows Gram-negative intracellular diplococci
- Diagnosis of gonorrhea is confirmed by urine NAAT

NAAT, nucleic acid amplification testing.



Why HIV-Infected Patients Engage in Unsafe Sexual Behavior

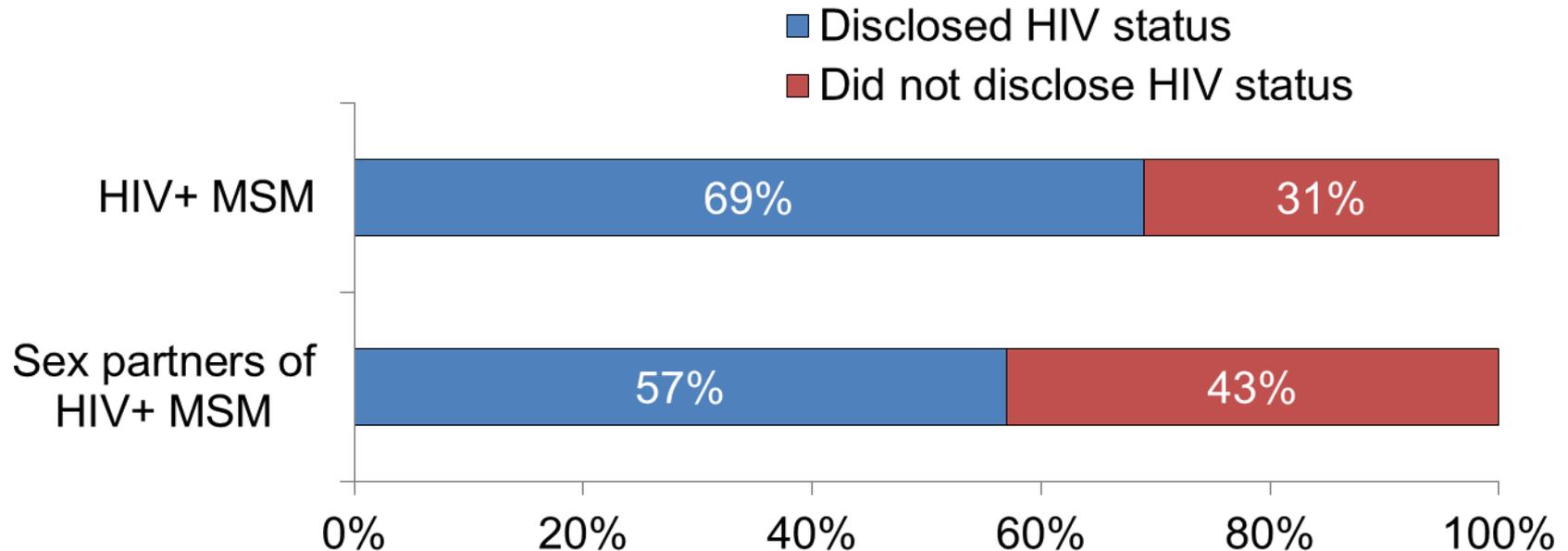
- One in 3 HIV-infected persons continues to engage in unsafe sexual behavior¹
- Some HIV-infected persons continue to participate in unsafe behaviors even when they know about transmission risks¹
- Reasons for unsafe sexual behavior include^{1,2}
 - Lack of critical information or motivation
 - Inadequate skills needed to practice safer sex behaviors
 - Alcohol, drug use, or mental health issues
 - Uncertainty about specific behavior prevention
 - Uncertainty about factors that may affect risk of transmission with different sexual partners

Sources: 1. Fisher JD, et al. *J Acquir Immune Defic Syndr.* 2010;55(Suppl 2):S106-S115; 2. Rose CD, et al. *J Acquir Immune Defic Syndr.* 2010;55:572-581.



Serodisclosure by MSM in New York City

In a study of 205 HIV-infected men and 123 uninfected men who reported recent unprotected anal intercourse, about 69% disclosed their HIV status to their last sex partner, while about 57% of partners disclosed their HIV status



Source: Tieu HV, et al. *Sex Transm Dis*. 2011;38:548-554.



HIV Prevention Counseling in Medical Care

- 45% of HIV-infected persons in medical care received prevention counseling in the preceding year¹
- Prevention counseling topics can include²
 - How to talk with partners about sex
 - How to negotiate safer sexual relationships
 - How to disclose HIV-positive status to partners
 - How to prevent HIV transmission to partners or unborn children
 - How to deal with the stigma of HIV infection
 - Condom negotiation
 - How to practice safer sexual behavior and safer injection drug use

Source: 1. Centers for Disease Control and Prevention. *MMWR*. December 2, 2011. 60(47):1618-1623; 2. Rose CD, et al. *J Acquir Immune Defic Syndr*. 2010;55:572-581.



Provider-Patient Relationship Is Key to Reducing HIV Transmission by HIV-Infected Patients

- Professional relationships offer an opportunity to integrate prevention into care, but HIV-infected patients rarely initiate prevention discussions nor do health care providers^{1,2}
- Health care providers caring for HIV-infected patients often miss opportunities to deliver routine HIV prevention messages^{1,3-6}
- Health care providers may be less likely to discuss prevention during ongoing care than during initial visits⁴
- Prevention messages are pertinent at all stages of HIV infection and should be given at every visit²
- It should be considered a missed opportunity if prevention is not discussed²

Sources: 1. Drainoni ML, et al. *AIDS Patient Care STDS*. 2009;23:347-356; 2. Rose CD, et al. *J Acquir Immune Defic Syndr*. 2010;55:572-581; 3. Duffus WA, et al. *Curr Infect Dis Rep*. 2009;11:319-326; 4. Myers JJ, et al. *AIDS Behav*. 2007;11:S30-S38; 5. Duffus WA, et al. *Clin Infect Dis*. 2003;36:1577-1584; 6. Fox J, et al. *HIV Med*. 2009;10:432-438.



Brief Behavioral Interventions Can Reduce High-Risk Behaviors in HIV-Infected Patients

- A total of 767 HIV-infected patients received provider-delivered targeted counseling and prevention messages at all routine quarterly visits over 12 months
 - Study conducted at 7 US HIV clinics
 - Patients were 58% black, 42% self-identified MSM, and 32% women
- There was a significant decline ($P<0.001$) in UAVI from 42% at baseline to 26% at 6 months and 23% at 12 months between HIV-negative and HIV-infected partners
- The reduction in UAVI was more pronounced in patients who received prevention counseling at all clinic visits

UAVI, unprotected anal or vaginal intercourse.

Source: Gardner LI, et al. *AIDS Pat Care STDS*. 2008;22:627-635.

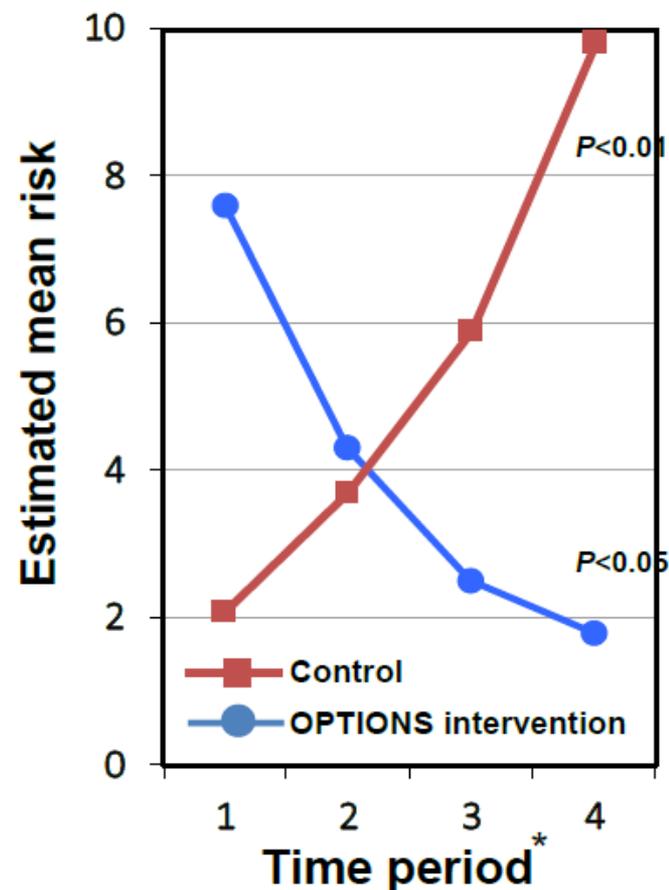


OPTIONS: Provider-Delivered “Behavioral Prescription” Reduces Unprotected Sex

- Health care providers conducted brief client-centered interventions at each HIV-infected patient visit to help reduce unprotected sexual behavior
- The provider-delivered intervention significantly reduced unprotected insertive and receptive vaginal and anal intercourse, anal intercourse, and insertive oral sex over a follow-up period of 18 months ($P<0.05$)
- In contrast, these behaviors increased significantly across the study interval for patients in the control group, who received standard-of-care only ($P<0.01$)

Source: Fisher JD, et al. *J Acquir Immune Defic Syndr*. 2006;41:44-52.

Change in Mean Risk for Unprotected Sex Events With and Without OPTIONS



*Average time period, 7.9 months



Teachable Moments Are Quite Common

- Teachable moments can be defined as situations with the potential to motivate positive change in unhealthy behavior
- Teachable moments share three features
 1. Presence of a concern that is salient to the patient that is either obviously relevant to an unhealthy behavior, or through conversation comes to be seen as relevant
 2. Link that is made between the patient's salient concern and a health behavior, which attempts to motivate the patient toward change
 3. Patient response indicating a willingness to discuss and commit to behavior change

Source: Cohen DJ, et al. *Patient Educ Couns*. 2011;5:e8-e15.



Using Teachable Moments for HIV Prevention

- The absence of adequate and regular counseling during routine clinical encounters translates into missed opportunities for HIV prevention
- Contacts should be translated into opportunities to provide HIV prevention messages to HIV-infected patients
- Prevention messages that effectively reduce risky behaviors among HIV-infected patients should be
 - Brief
 - Recurrent
 - Targeted
 - Positive

Source: Duffus WA, et al. *Curr Infect Dis Rep.* 2009;11:319-326.



Effective Prevention Messages for HIV-Infected Patients in Care

- Prevention counseling should focus on positive reinforcement, risk reduction, education, and support
- Messages should be open-ended, confidential, and delivered with a nonjudgmental attitude
- Active patient participation should be encouraged to facilitate risk reduction
 - Setting goals
 - Choosing techniques
- Information should be limited to essential facts to reduce possible miscommunication

Source: Duffus WA, et al. *Curr Infect Dis Rep.* 2009;11:319-326.



How Often Will You Ask Your Patients About Their Sex Lives in the Future?

1. Never, it's none of my business!
2. Only if they bring it up
3. Only when they present with a sexually transmitted infection or disease
4. Occasionally, if I have extra time at the end of their clinical visit
5. At every visit



Rates of STDs Indicate Ongoing Risk for HIV Transmission

- Patients who believe that undetectable viral loads prevent HIV transmission are at the greatest risk of contracting STDs
- Selecting same HIV status sexual partners for unprotected sex (“serosorting”) does not protect an HIV patient against, and may even increase, STD risk
- In a survey of 490 HIV-infected persons, 14% were diagnosed with a new STD during a 6-month period
- Prevention messages including condom use should be reinforced when new STDs are diagnosed

Source: Kalichman SC, et al. *HIV Med.* 2010;11:502-509.

Multivariate Logistic Regression Predicting a New STD Diagnosis Among HIV-Infected Persons

Variable	Adjusted OR	95% CI
Age	0.97	0.93–1.00
Education	0.85*	0.73–0.98
HIV symptoms	1.17**	1.07–1.29
CD4 cell count	1.0	0.99–1.00
Viral load	1.22	0.83–1.81
Alcohol problems	1.02	0.97–1.08
Cannabis use	3.57*	1.21–10.55
Infectiousness beliefs	1.32**	1.05–1.66

* $P < 0.05$, ** $P < 0.01$

Adapted from: Kalichman SC, et al. *HIV Med.* 2010;11:502-509.



CDC STD Treatment and Prevention Guidelines for HIV-Infected Patients

- STDs can facilitate HIV acquisition by partners
- Many STDs are asymptomatic
- Routine screening for STDs—particularly syphilis, gonorrhea, and chlamydia—should be performed at least annually for all sexually active HIV-infected persons
- Diagnosis of an STD in an HIV-infected person indicates ongoing or recurrent high-risk behavior and should prompt referral for counseling and Partner Services

Source: CDC. Sexually Transmitted Diseases Treatment Guidelines, 2010.



STDs Are Associated With Increased HIV Acquisition and Transmission

- STDs can produce mucosal breaks/genital ulcers or inflammation that attract immune cells (HIV target cells)
 - Mucosal breaks/genital ulcers: herpes simplex, syphilis
 - Inflammation: gonorrhea, non-gonococcal urethritis
- STDs associated with significant increases in leukocyte concentrations in the genital tract can increase the quantity of HIV shed by the mucosa of the cervix, urethra, and rectum
- Some STDs also increase plasma viral load for patients not on ART

Sources: Paz-Bailey G, et al. *JID*. 2009;200:1039-1049; Paz-Bailey G, et al. *CID*. 2010;50:1060-1067; Dunne EF, et al. *JAIDS*. 2008;49:77-83; Johnson LF, et al. *STD*. 2008;35:946-959; Mayer KH, et al. *Am J Reprod Immunol*. 2011;65:308-316.



STDs Are Commonly Diagnosed Among HIV-Infected Patients Receiving Routine Care

- Data from 557 adults in a prospective cohort of HIV-infected adults attending HIV clinics in 4 cities
- Screened for gonorrhea, chlamydia, and trichomoniasis at enrollment and at 6 months, and treated if infected
- 20% of MSM were diagnosed with an STD by 6 months, and most were asymptomatic
- 13% of all participants had an STD at enrollment and 7% acquired an STD 6 months later
 - Other than trichomoniasis, 94% of new STDs were in MSM
 - The most commonly diagnosed infections were rectal chlamydia, oropharyngeal gonorrhea, and chlamydial urethritis
- Risks for STDs were polysubstance use and >4 partners within 6 months

MSM = men who have sex with men.

Source: Mayer KH, et al. *Sex Transm Dis*. 2012;39:1-7

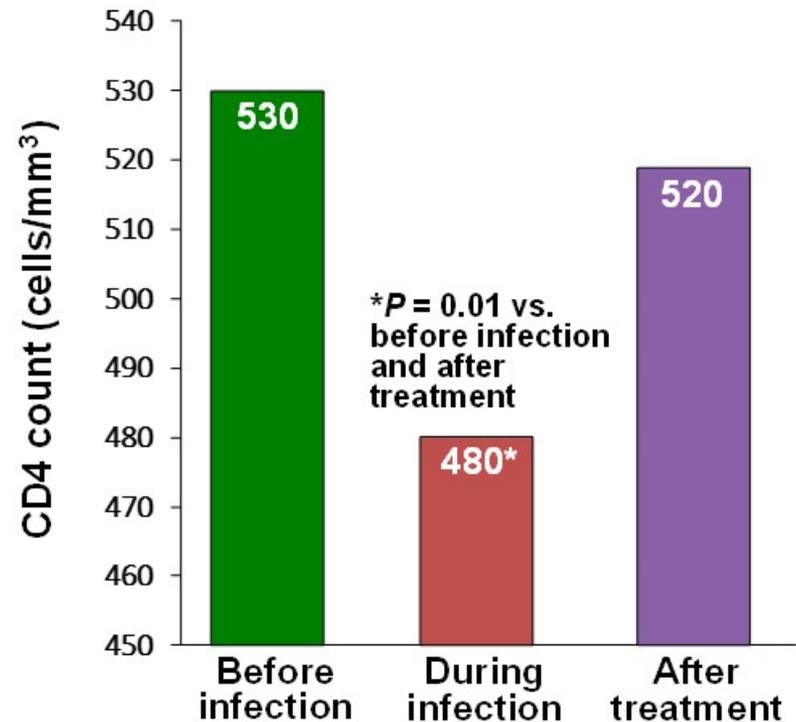


STDs in HIV-Infected Persons Increase Viral Load and Decrease CD4 Count

- Increased viral load increases the risk of HIV transmission and the risk of progression to AIDS
- In a study of women with untreated HIV, those with STDs had a median viral load appreciably higher than those without STDs¹
- Primary and secondary syphilis are associated with decreased CD4 counts and increased viral loads in HIV-infected persons, which can negatively impact overall health and increase the risk of progression to AIDS²⁻⁴

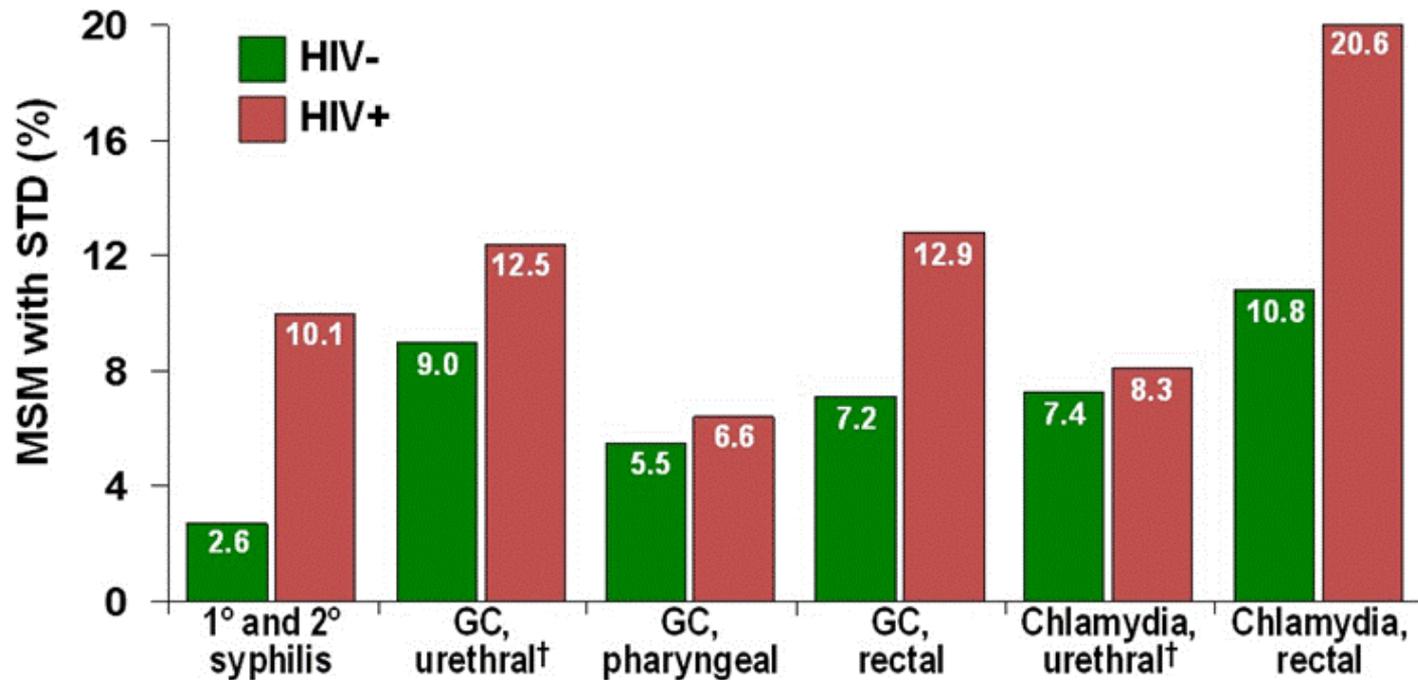
Source: 1. Nkengasong JN, et al. *JID*. 2001;183:1405-1408. 2. Kofoed K, et al. *Sex Trans Dis*. 2006;33:143-148. 3. Jarzebowski W, et al. *Arch Intern Med*. 2012;172:1237-1243. 4. Palacios R, et al. *J Acquir Immune Defic Syndr*. 2007;44:356-359.

Median CD4 Count in HIV-Infected Patients With Syphilis Coinfection for <1 Year²



STDs Are More Common in HIV-Infected MSM Than in HIV-Uninfected MSM

Proportion of MSM Attending STD Clinics With Syphilis, Gonorrhea, or Chlamydia, by HIV Status*



MSM = men who have sex with men. GC = gonorrhea.

*2011 data; excludes all persons for whom there was no laboratory documentation or self-report of HIV status.

†Includes results from both urethral and urine specimens.

Source: STD Surveillance Network (SSuN), 2011. Available at: <http://www.cdc.gov/std/stats11/msm.htm>



Antibiotic Resistance to Gonorrhea Is Increasing

- Reports show increasing gonococcal resistance to fluoroquinolones and cefixime, the last oral agents for treatment of gonorrhea
- The only reliably effective drug has been ceftriaxone, which must be given IM, but resistance to ceftriaxone also has been reported

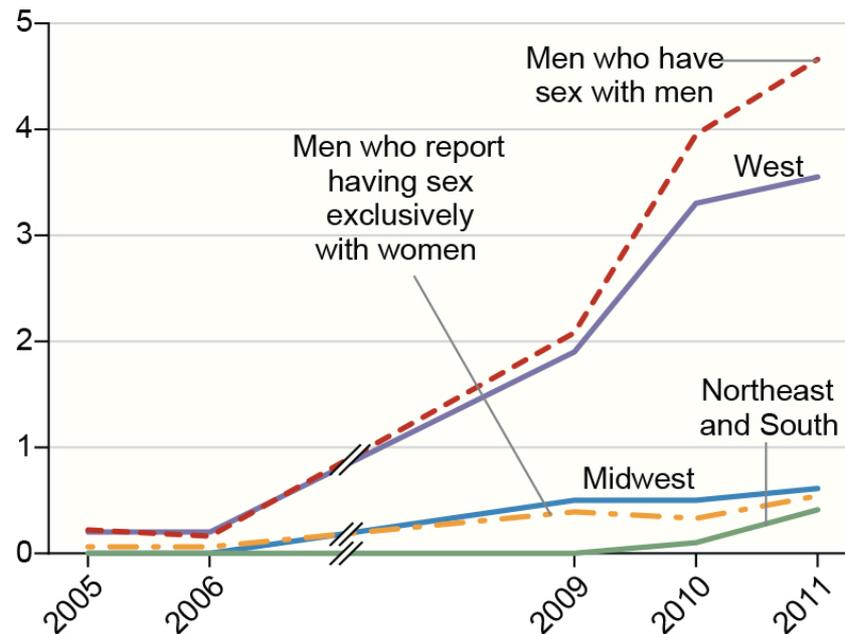
MICs = minimal inhibitory concentrations
MSM = men who have sex with men

From The New England Journal of Medicine, Bolan GA, et al. The Emerging Threat of Untreatable Gonococcal Infection, 366:485-487. Copyright © (2012) Massachusetts Medical Society. Reprinted with permission from Massachusetts Medical Society.

N gonorrhoeae Isolates With Elevated MICs* of Cefixime Among MSM

Percentage of Isolates with Elevated MICs of Cefixime

*MIC ≥ 0.25 $\mu\text{g/mL}$

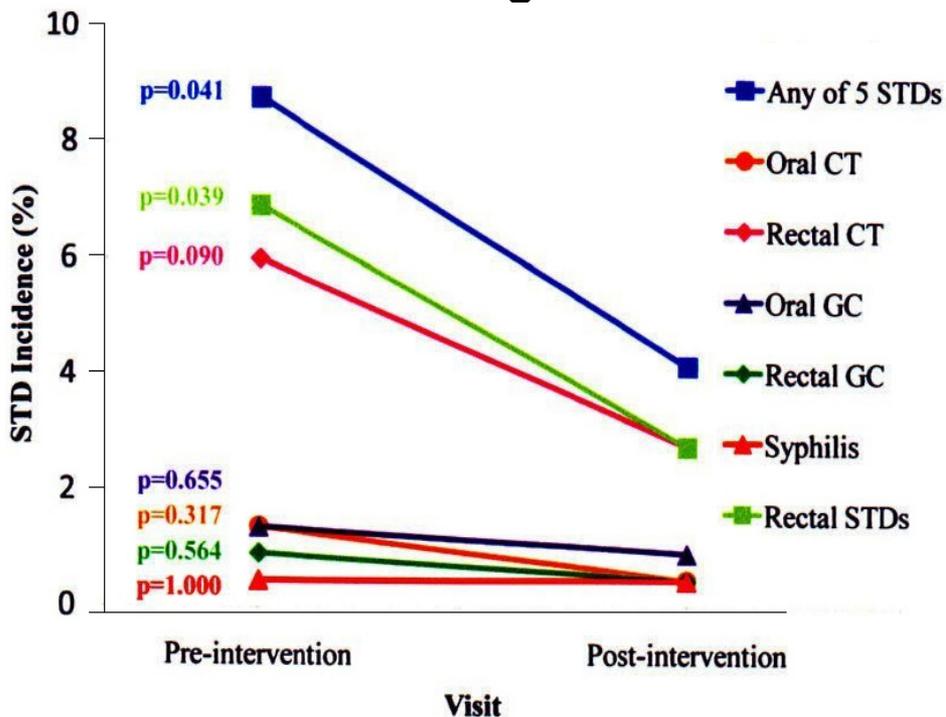


Susceptibility to cefixime was not tested in 2007 or 2008. From the Gonococcal Isolate Surveillance Project.

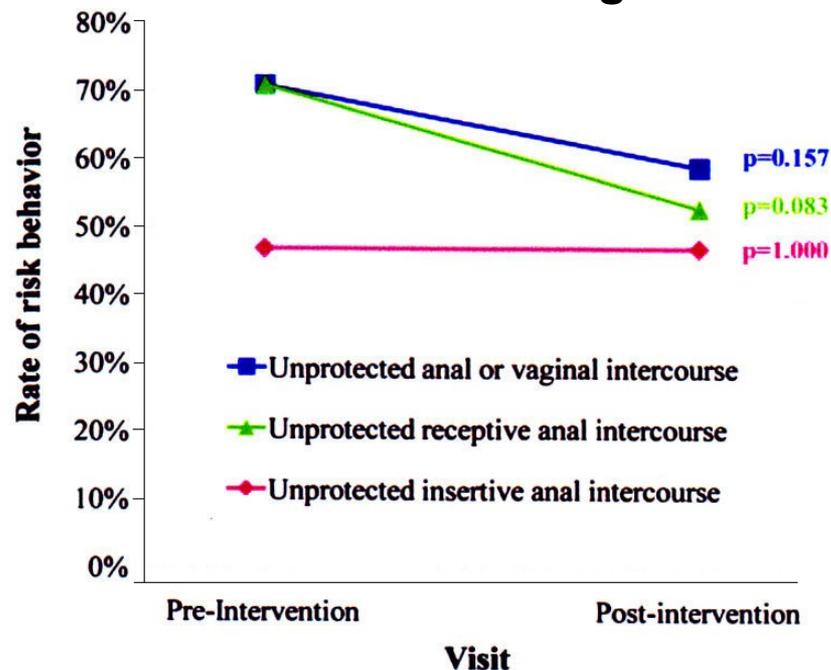


Routine STD Testing and Brief Prevention Messages Reduce STDs in HIV-Infected MSM

Change in STD Incidence Among MSM After Brief Prevention Messages



Change in Rates of Risky Sexual Behaviors Among MSM Who Had an STD Before but not After Brief Prevention Messages



CT = chlamydia. GC = gonorrhea. MSM = men who have sex with men.

Source: Patel P, et al. *Sex Trans Dis.* 2012;39:470-474.



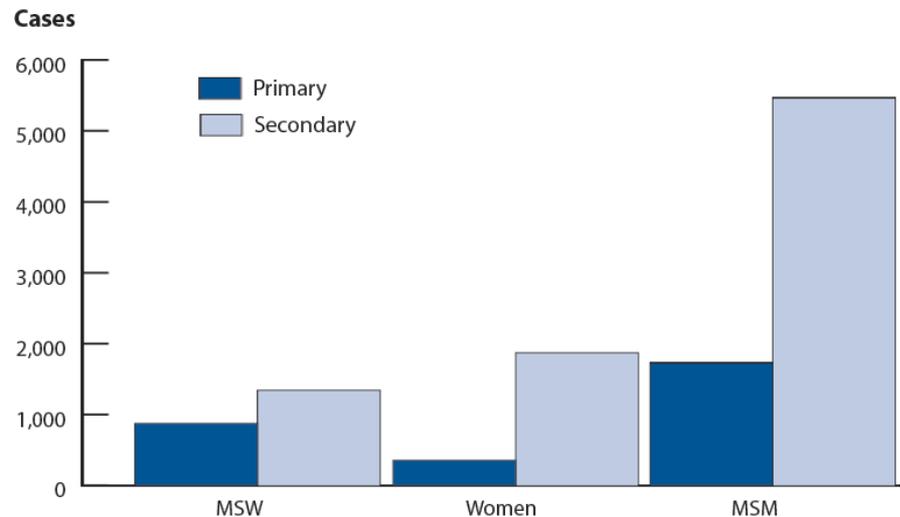
Syphilis in MSM

- In 2009, the proportion of HIV-infected MSM presenting with primary and secondary syphilis ranged from 30% in Birmingham to 74% in Baltimore
- Although all health problems caused by syphilis in adults are serious, chancres facilitate sexual transmission and acquisition of HIV
- Syphilis can indicate high-risk behavior and should prompt a risk assessment and referral for counseling and Partner Services

MSW, men who have sex with women; P&S, primary and secondary.

Source: CDC. Sexually Transmitted Diseases Surveillance Report, 2009.

Primary and Secondary Syphilis by Stage, Gender, and Sexual Behavior, United States, 2009



In 2009, MSM accounted for 62% of all P&S syphilis cases in the United States, more cases than heterosexual men or women in all racial and ethnic groups.

Reproduced from: CDC. Sexually Transmitted Diseases Surveillance Report, 2009.

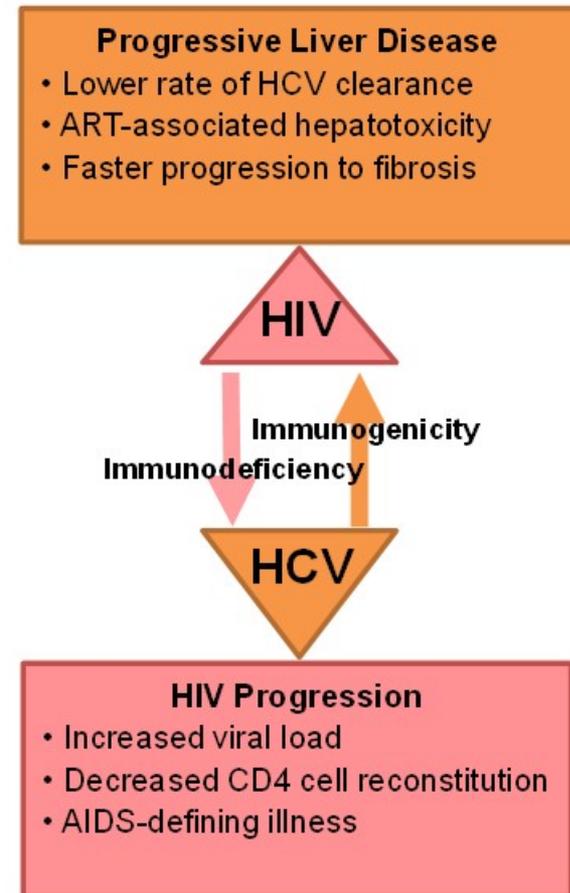


HIV/HCV Co-infection

- Higher rate of progressive liver disease than HCV alone^{1,2}
- Significantly lower rate of spontaneous HCV clearance than HCV alone¹⁻³
- High rate of ART-associated hepatotoxicity¹⁻³
- HIV-infected men more likely to shed HCV RNA in semen than HIV-negative counterparts²

Sources: 1. van de Laar TJ, et al. *AIDS*. 2010;24:1799-1812; 2. Danta M. *PRN Notebook*. 2007;11:1-8; 3. Operskalski EA, et al. *Curr HIV/AIDS Rep*. 2011;8:12-22; 4. Potter M, et al. *AIDS*. 2010;24:1857-1865.

Clinical Consequences of HIV/HCV Co-infection



Common Patient Misconceptions About HIV

“My only sexual activity is oral sex; I don’t need to use condoms.”

“I only have sex with other HIV+ guys, so we can have unprotected sex.”

“I don’t need to begin taking medication for HIV until I feel sick.”

“Starting HIV medications means that I must take a lot of pills with many side effects; I’m not ready for that.”

“Because I’m HIV+, I need to be careful about everyday activities, such as being in crowds and shaking people’s hands.”

“I’m undetectable, so I can’t spread HIV to others.”

Source: CDC: *Separating Fact from Fiction*, Prevention IS Care Resource Kit #2, 2010.



Preventing Sexual and Blood-Borne Transmission of HIV

- Ask, screen, and intervene by talking with patients about HIV risk reduction
- Discuss the risky behaviors associated with transmission of HIV
- Share the facts with patients so they can make informed decisions about sexual and drug use behaviors including
 - Adherence to ART to maintain undetectable HIV RNA
 - Universal use of condoms for anal, oral, and vaginal sex
 - Safer sexual and drug-use practices
 - Rapid diagnosis and treatment of STDs

Source: CDC. Risk Reduction Strategies for Health Care Providers.



Discussion Question

The study by Kalichman et al showed which of the following to be associated with the highest probability of a new STD diagnosis in HIV-infected patients:

- Younger age
- Cannabis use
- Less education
- Higher viral load



Partner Services

Case History

- SR is a 29-year-old woman newly diagnosed with HIV infection
- She had a negative HIV test 3 years ago
- She is asymptomatic and does not recall any illness that could be consistent with acute (primary) HIV infection
- In the past 3 years, she reports 4 male sexual partners
- She has no previous history of STDs
- She is afraid of contacting her sexual partners
- You discuss Partner Services with her



What Is Partner Services?

- FREE, confidential partner notification to persons with HIV or other STDs and their sex and drug-using partners
- Maximizes the connection between medical, preventive, and other public health services for patients and their sex and drug-using partners
- A function of local and state health departments
 - Identifies and locates sex or drug-using partners to inform them of their potential risk and advises HIV and STD screening for exposed partners
 - Provides testing, counseling, and linkage to care for infected persons as well as referral to other services

Source: CDC. Recommendations for Partner Services Programs for HIV Infection, Syphilis, Gonorrhea, and Chlamydia Infection, 2008.



Importance of Partner Services

- Ensures that sex or drug-injection partners are confidentially informed and know of their exposure
- Helps exposed partners gain early access to testing for HIV and other STDs, counseling, medical care, and treatment
- Helps provide free services to those who just found out about being HIV infected, links them to medical care and treatment, and offers counseling to avoid infecting others
- Studies show that about 20% of identified partners who previously tested negative for HIV will test positive after exposure

Source: CDC. Recommendations for Partner Services Programs for HIV Infection, Syphilis, Gonorrhea, and Chlamydial Infection, 2008.



Which Patients Are Candidates for Partner Services?

- Newly diagnosed HIV-infected patients
- HIV-infected patients who indicate ongoing risky behavior
- Patients diagnosed with syphilis, gonorrhea, or chlamydia
- New patients referred to your practice with an STD
- New patients referred to your practice living with HIV

Source: CDC. Recommendations for Partner Services Programs for HIV Infection, Syphilis, Gonorrhea, and Chlamydial Infection, 2008.



The Provider's Role—Talk About It

- Talk with your patients about Partner Services and its benefits
- Inform patients that they may be contacted by a representative from the local health department, but that all services are confidential including contacting partners
- Emphasize the importance of participating in the Partner Services process as a way to help stop the spread of HIV/STDs
- Discuss strategies to reduce future risky behaviors
- Make a direct referral to the Partner Services program
- Consider making a referral to a community-based organization or other agency offering Comprehensive Risk Counseling and Services (CRCS)

CRCS, Comprehensive Risk Counseling Services.

Source: CDC. Recommendations for Partner Services Programs for HIV Infection, Syphilis, Gonorrhea, and Chlamydial Infection, 2008.



Discussion Question

The primary role of Partner Services is to

- Provide confidential partner notification to persons with HIV or other STDs and their sex and drug-using partners
- Identify patients diagnosed with STDs such as syphilis, gonorrhea, or chlamydia
- Provide local and state health departments with surveillance information to track down persons spreading STDs
- Teach high-risk HIV-infected patients how to practice safer sex



Retention In Care

Case History

- TL is a 20-year-old man diagnosed with HIV infection at age 18
- His most recent laboratory tests were performed 1 year ago and showed a CD4 count of 245 cells/mm³ and an HIV RNA level of 156,000 copies/mL
- He has missed his last two scheduled appointments



Factors Associated With Retention in Care

- Retention in care is essential to providing all HIV-infected persons with ongoing treatment, including those not yet on ART
- A HRSA-sponsored demonstration project identified factors relating to retention in care among young MSM of color
 - >98% had sex with a man before the HIV diagnosis
 - Characteristics associated with improved retention in care included younger age (<21 years), feeling respected at the clinic, and receipt of program services (eg, transportation, appointment reminders)
 - Characteristics associated with poorer retention in care included having a CD4 count <200 cells/mm³ at baseline and Latino ethnicity
- Innovative programs that address the needs of young MSM of color may result in improved retention

HRSA = Health Resources and Services Administration

Source: Magnus M, et al. *J Acquir Immune Defic Syndr.* 2010;53:529-536



Outcomes of Poor Retention in Care

- Decreased likelihood of receiving ART
- High rates of ART failure
- Increased risky behavior promoting HIV transmission
- Increased rates of hospitalization
- Decreased survival

Source: Giordano TP. *Top Antivir Med.* 2011;19:12-16.



Discussion Question

All of the following are associated with poor retention in care except

- Decreased likelihood of receiving ART
- No change in rates of ART failure
- Increased risky behavior promoting HIV transmission
- Increased rates of hospitalization and decreased survival



Referral to Needed Services

Referrals are necessary for a number of reasons

- Patients living with HIV may face numerous psychosocial as well as medical challenges
- Evidence increasingly shows the importance of incorporating referrals to support services into the care of patients living with HIV, in addition to HIV medical care^{1,2}
- HIV-infected patients who use alcohol or drugs should be offered referral to substance abuse services³⁻⁵
- Support services can help ensure optimal HIV treatment outcomes and reduce the risk of transmission^{1,2}

Sources: 1. Perkins DO, et al. *Psychiatry*. 1993;150:309-315; 2. Leaver CA, et al. *AIDS Behav*. 2007;11:S85-S100; 3. Bing EG, et al. *Arch Gen Psych*. 2001;58:721-728; 4. Hahn JA, et al. *Curr HIV/AIDS Rep*. 2010;7:226-233; 5. CDC. Counseling, Testing, Referral Recommendations, 2001.



Referrals May Increase the Likelihood of Adherence and Retention

- HIV-infected persons can live with depression, mental illness, developmental disability, sexual addiction, and compulsivity
- HIV-infected patients may benefit from referrals to psychosocial and other support services for counseling and housing assistance to^{1,2}
 - Help them cope with their HIV infection and related conditions
 - Assist in establishing stable living environments
- Referral to support services such as mental health and substance abuse treatment can improve adherence and retention in care

Sources: 1. CDC. Counseling, Testing, Referral Recommendations, 2001; Incorporating HIV Prevention into Care of PLWH, 2003; 2. Matovu F, et al. 18th CROI, Feb. 27-Mar 2, 2011; Boston, Mass. Poster 1016.



Examples of Support Services

- Psychosocial support (eg, support groups, counseling)
- Mental health services
- Substance use treatment
- Housing/housing assistance
- Transportation
- Case management
- Nutritional counseling
- Food bank/home-delivered meals
- Oral health



Examples of Resources for Support Services Referrals

- Substance Abuse and Mental Health Services Administration (SAMHSA)
- Housing Opportunities for Persons with AIDS (HOPWA)
- Health Resources and Services Administration (HRSA)
- State and local health departments
- <http://www.aids.gov/>
- <http://www.cdc.gov/hiv/>



Prevention IS Care Resource Kit #2

Newest resource from CDC released October 2011 includes

- HIV provider materials
- Patient education brochures
- Patient counseling tools

To order or download via the website

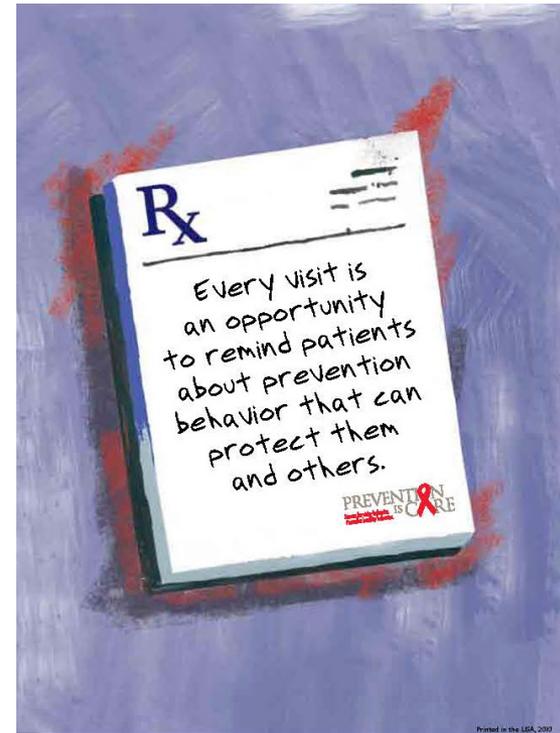
- visit www.cdc.gov/PreventionISCare

To order by telephone

- call 1-800-CDC-INFO (232-4636)

For more information on the *Prevention IS Care* campaign, please contact

PIC@CDC.gov



Summary and Conclusions

- Prevention services for people living with HIV are critical to reducing new infections
- Prevention and care go hand-in-hand
- The provider-patient relationship can be key to reducing HIV transmission
- Prevention of transmission is pertinent at all stages of HIV infection
- **HIV care providers are critical partners in HIV prevention**



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