

# Syphilis Co-Infection in HIV Population Newly Diagnosed by Rapid Testing



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## Abstract

**BACKGROUND:** Cook County ranked 2<sup>nd</sup> in US syphilis cases in 2009. Men who have sex with men (MSM) have increased syphilis rates and highest numbers of new HIV infections. Same-day rapid HIV testing promotes immediate linkage to care. The impact of syphilis screening concurrent with rapid HIV testing is unclear.

**OBJECTIVE:** Assess for syphilis co-infection in patients newly diagnosed HIV by rapid test and examine linkage to care.

**METHODS:** Sexually Transmitted Infections (STI) walk-in clinic offered fingerstick rapid HIV testing January 2008-September 2010; RPR confirmed by TPPA with new cases verified. Preliminary reactive HIV rapid test results had confirmatory Western Blot, with results given at initial HIV clinic appointment. Descriptive analysis was performed using SAS.

**RESULTS:** 12,676 had rapid HIV testing; 123 (0.97%) confirmed HIV+. 85% HIV population was male; ages ranged 15-59 (median 28); 47% of population disclosed MSM as HIV risk; 33% of MSM were ≤25 years of age. New syphilis co-infection diagnosed in 19 (15%) patients confirmed HIV+. Cases were African American (67%), Hispanic (22%) and Caucasian (11%). Median age was 26; all 19 were males; 15 (79%) were MSM, associated with increased risk for syphilis compared to heterosexuals (OR=4.2026; CI=1.4786 - 11.9445; p<0.0026). Median CD4 count was 275; CD4 count, viral load did not have significant syphilis association. 17/19 (89%) received syphilis treatment; 2 lost to follow up. The proportion of new HIV+ patients entering care increased from 77% by end of 1<sup>st</sup> year to 95% by 3<sup>rd</sup> year.

**CONCLUSIONS:** MSM HIV+ have quadruple risk of Syphilis co-infection compared to heterosexual males. 95% cases were ≤40 years of age. Linkage to care improved over study duration.

**IMPLICATIONS FOR PROGRAMS, POLICY, AND RESEARCH:** Linkage to care provides treatment that reduces risk of transmission of HIV, syphilis and lost to follow-up.

## Background

- Cook County ranked 2<sup>nd</sup> in US for early syphilis cases in 2009
- MSM have increased syphilis rates and highest numbers of new HIV infections
- Same-day rapid HIV testing promotes immediate linkage to care
- The impact of syphilis screening concurrent with rapid HIV testing is unclear

## Objectives

- To assess patients with newly diagnosed HIV infection by rapid test for syphilis co-infection
- Describe patient demographics
- Examine HIV and Syphilis linkage to care

## Methods

- Sexually Transmitted Infections (STI) walk-in clinic offered fingerstick rapid HIV testing with same visit results January 2008-September 2010
- Patients who received preliminary reactive HIV test results had blood collected for confirmatory Western blot, RPR, and baseline CD4 and VL; an out-pt HIV clinic appointment scheduled ≤ 14 days
- Reactive RPR confirmed by TPPA and new syphilis cases verified
- Patients received RPR and western blot results at initial HIV clinic appointment
- Descriptive analysis was performed using SAS

## Results

- 12,676 rapid HIV tested; 123 (0.97%) newly diagnosed confirmed HIV+

Table 1. Patient Characteristics

	HIV population	HIV Syphilis Co-infection Population
Numbers	N=123	N=19
Age range, years (median)	15-58 (28)	20-56 (26)
MSM as risk factor, n(%)	MSM=58(47)	MSM=15(79)
CD4, cells/μL, range (median)	5-1397 (276)	34-977 (254)
Viral Load, copies/ml, range (median)	75-500000 (17816)	803-216421 (37396)

Figure 1. Gender Demographic of HIV+ Population (N= 123)

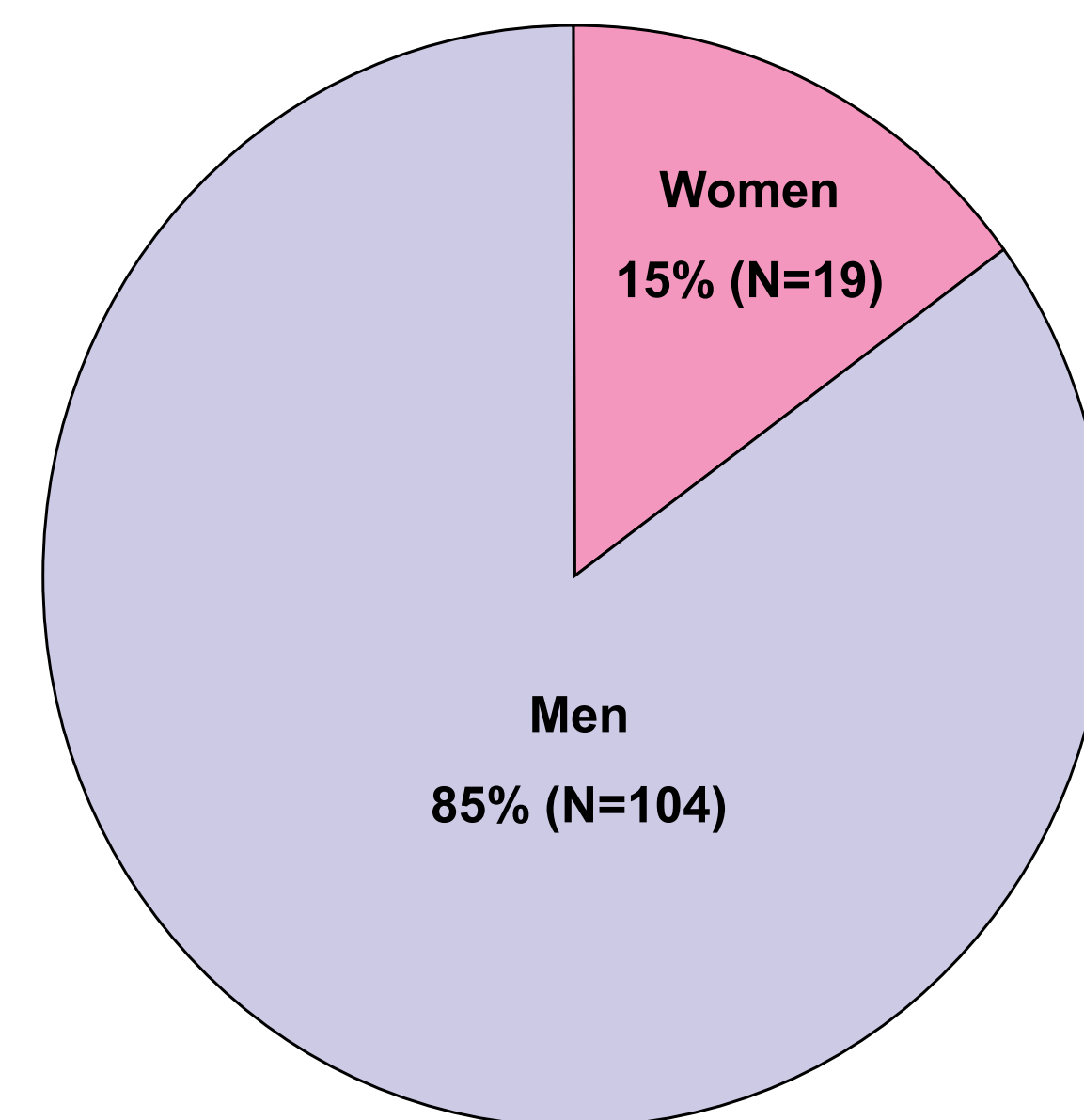


Figure 2. Gender Demographic of HIV+ Syphilis Co-Infection Population (N=19)

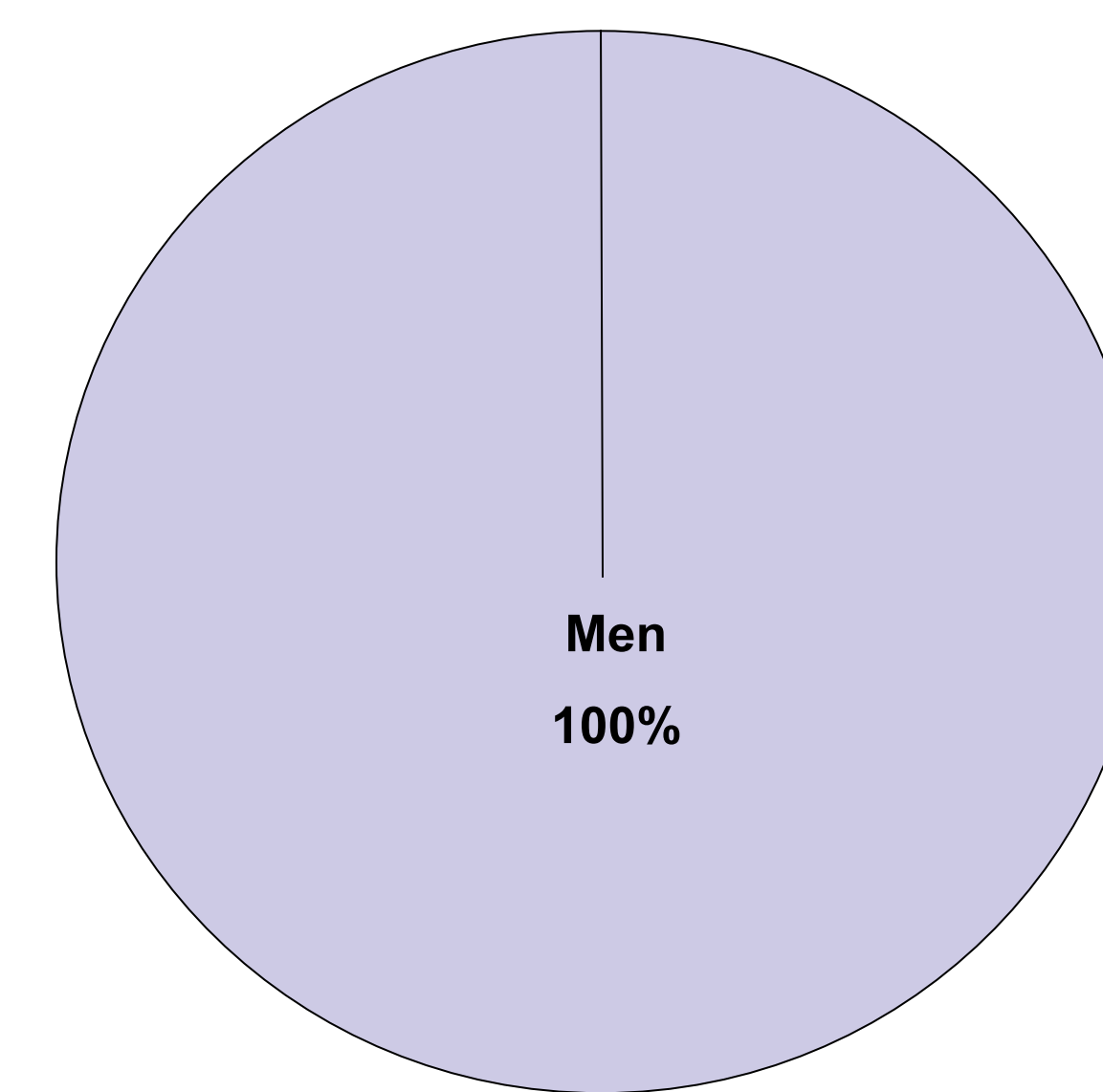
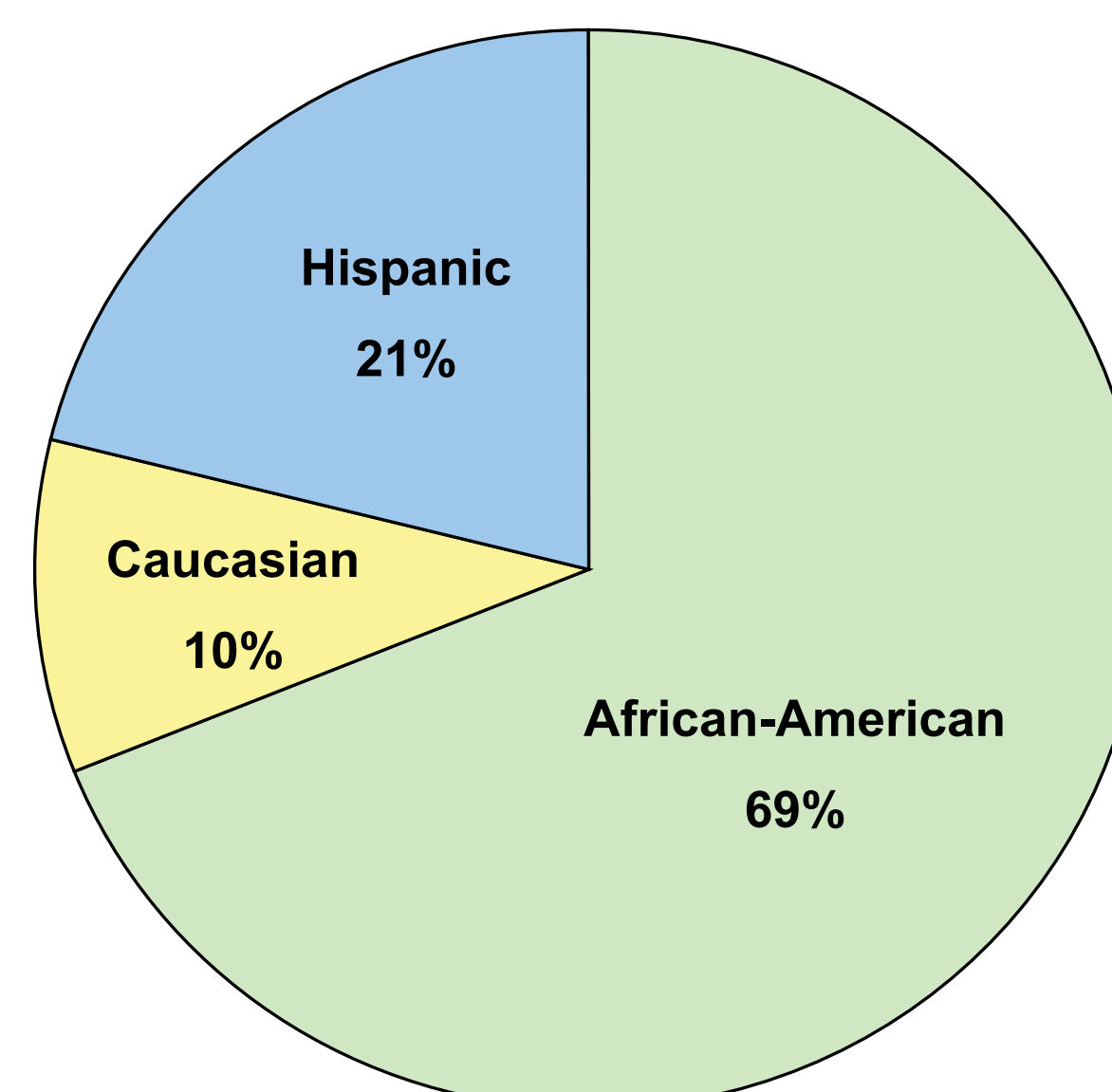


Figure 3. Race Demographic\*



\* HIV+ and HIV+ Syphilis Co-Infection Populations Similar

## Results continued

Table 2. Risk of Syphilis Co-Infection in HIV Population

	OR (95% CI) of HIV Syphilis Co-Infection	P value
AA race vs Others	0.9686 (0.3984 - 2.3552)	0.9442
MSM vs Heterosexual	4.2026 (1.4786 - 11.9445)	0.0026
CD4<200 vs >200	0.9872 (0.4084 - 2.3864)	0.9772
VL>100000 vs <100000	1.5646 (0.6333 - 3.8655)	0.3443

- Proportion of new HIV+ patients entering care increased from 77% by end of 1<sup>st</sup> year to 95% by 3<sup>rd</sup> year
- 17/19 (89%) received syphilis treatment; 2 lost to follow up

## Conclusions and Limitations

- MSM with newly identified HIV infection have quadruple the risk of syphilis co-infection compared to heterosexual males; 95% cases were ≤ 40 years of age
- Linkage to care improved over study duration
- Patient population was majority African American Generalization to other ethnic groups is limited

## Implications

- Linkage to care provides treatment that reduces risk of transmission of HIV and syphilis

## Acknowledgements

- We thank the CORE Center Health Educators for embracing the rapid HIV testing modality and encouraging patients to accept this screening tool