

# Using Surveillance Data to Evaluate Serosorting Behavior in Young Men with Early Syphilis

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Public Health

# Presentation Goals

- Define early syphilis and relationship with HIV
- Define HIV serosorting
- Discuss national, state and local trends regarding early syphilis in young men
- Present results of serosorting behavior within group of young men with syphilis in Maricopa County
- Discuss public health implications and recommendations

# Study Objective

- To describe the epidemiology of young men infected with early syphilis
  - To investigate whether young men infected with early syphilis were:
    - Infected with HIV and report having sex with HIV- partners
- OR
- Not infected with HIV and report having sex with HIV+ partners

# Early Syphilis & HIV

Primary, secondary and early latent < 1 year

Human immunodeficiency virus (HIV)

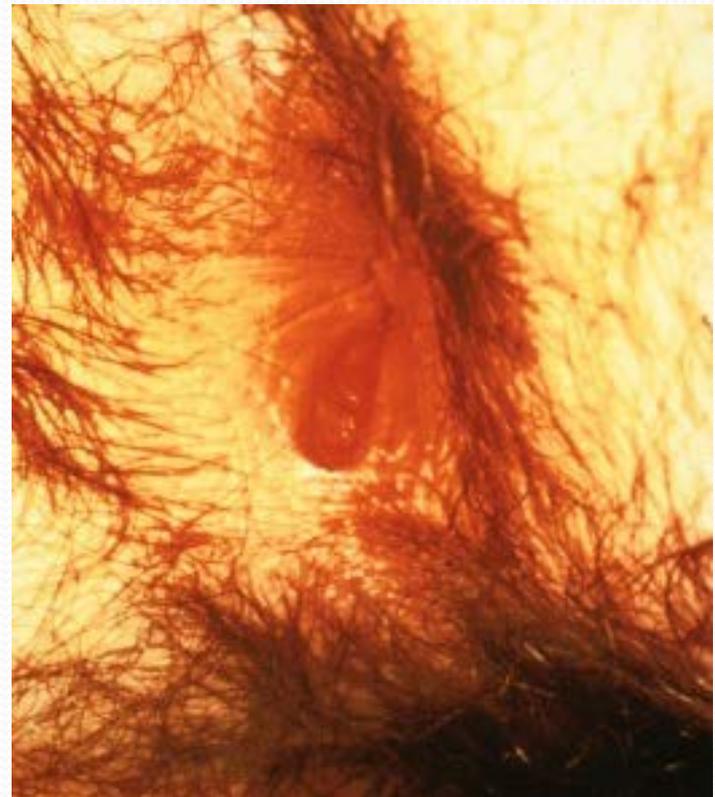
# Early Syphilis

- Three stages
  - Primary
  - Secondary
  - Early latent (< 1 year)
- Syphilis is a sexually transmitted, genital ulcer disease

# Primary Syphilis - Chancre



Penile



Anus

# Secondary Syphilis - Rash



Palmar or plantar



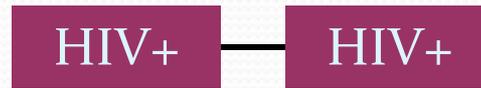
Condylomata lata –  
highly infectious

**What is serosorting?**

# Serosorting is:

- Limiting unprotected anal intercourse to partners with the same HIV status as their own
- A strategy some individuals use to prevent HIV transmission or acquisition

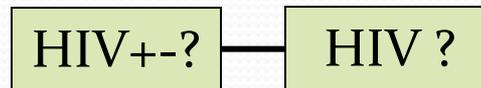
Serosorting:



Not serosorting:



Unknown serosorting:



# CDC does NOT recommend serosorting as a safer sex practice.

- Outdated HIV test/status
- Assumptions regarding status
- Lack of disclosure
- Misrepresent status

# HIV Risk and Seropositioning

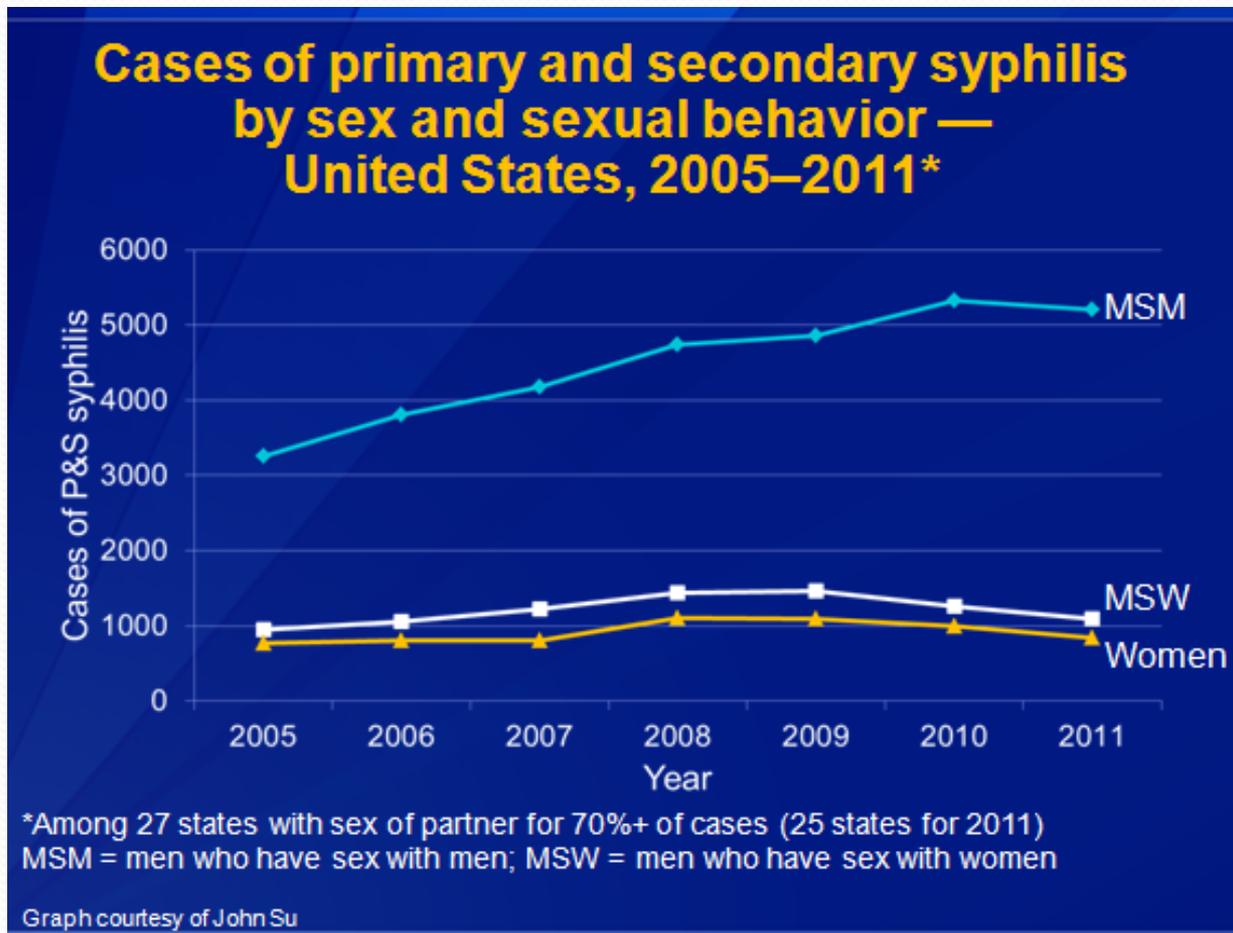
- Unprotected anal intercourse = High risk
  - HIV-, receptive (bottom) patient = highest risk of acquisition
  - HIV+, insertive (top) patient = highest risk of transmission
- Vaginal intercourse = High risk for women
- Oral intercourse = Higher risk of non-HIV STD transmission (syphilis); decreased risk of HIV transmission or acquisition

# Epidemiology

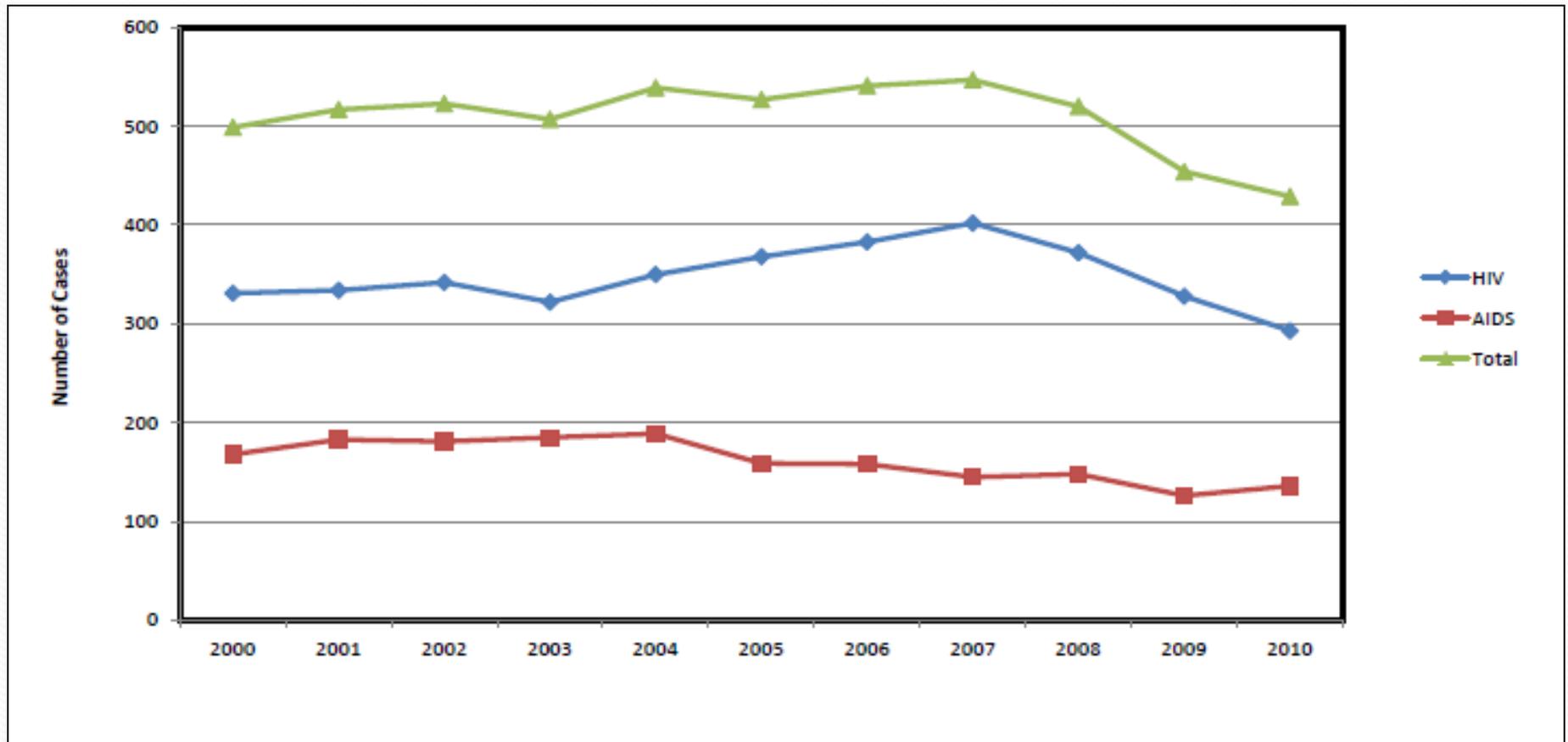
Primary & Secondary Syphilis

HIV

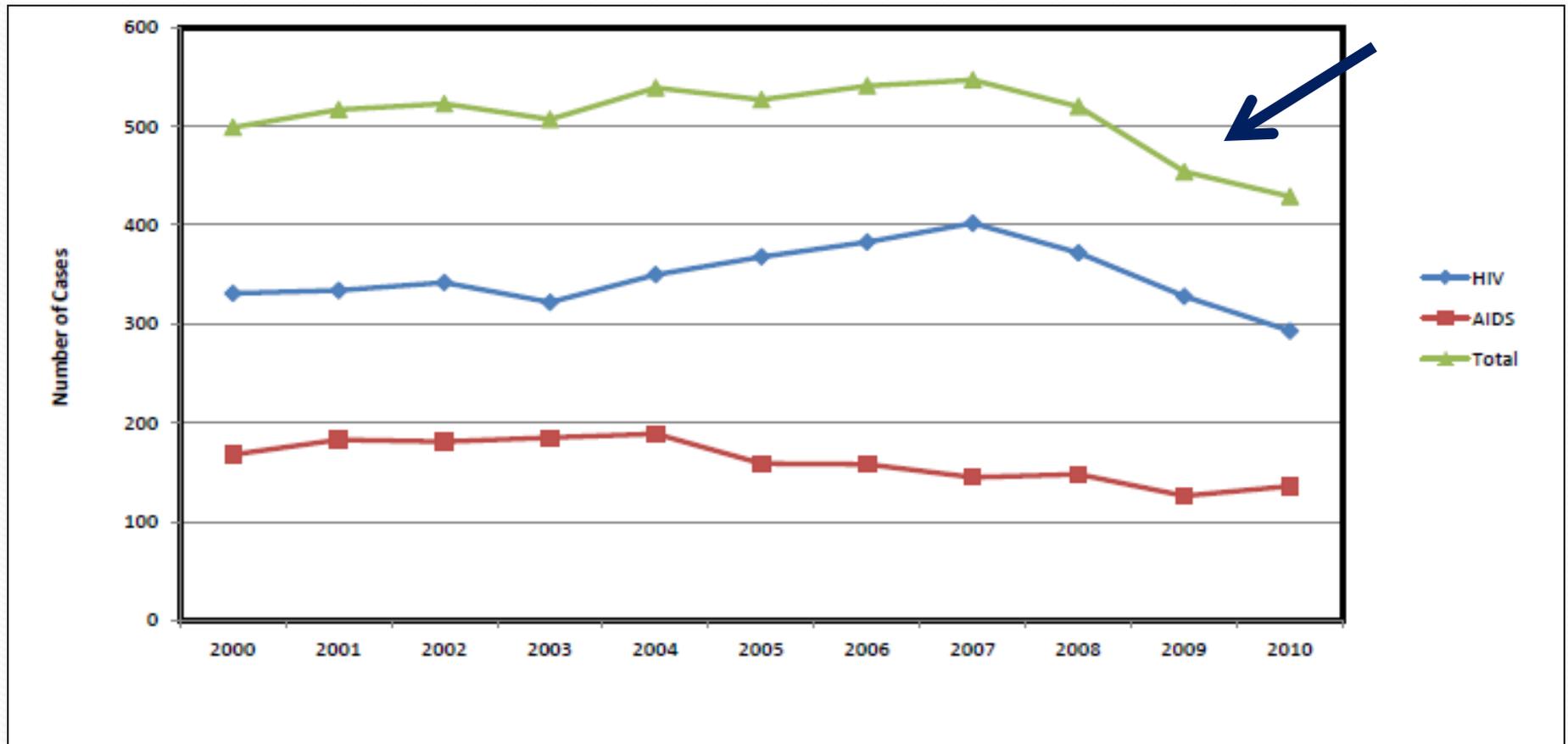
Young men who have sex with men (MSM) as well as black and Hispanic MSM are increasingly affected by P&S syphilis.



# HIV Incidence in Maricopa County, AZ

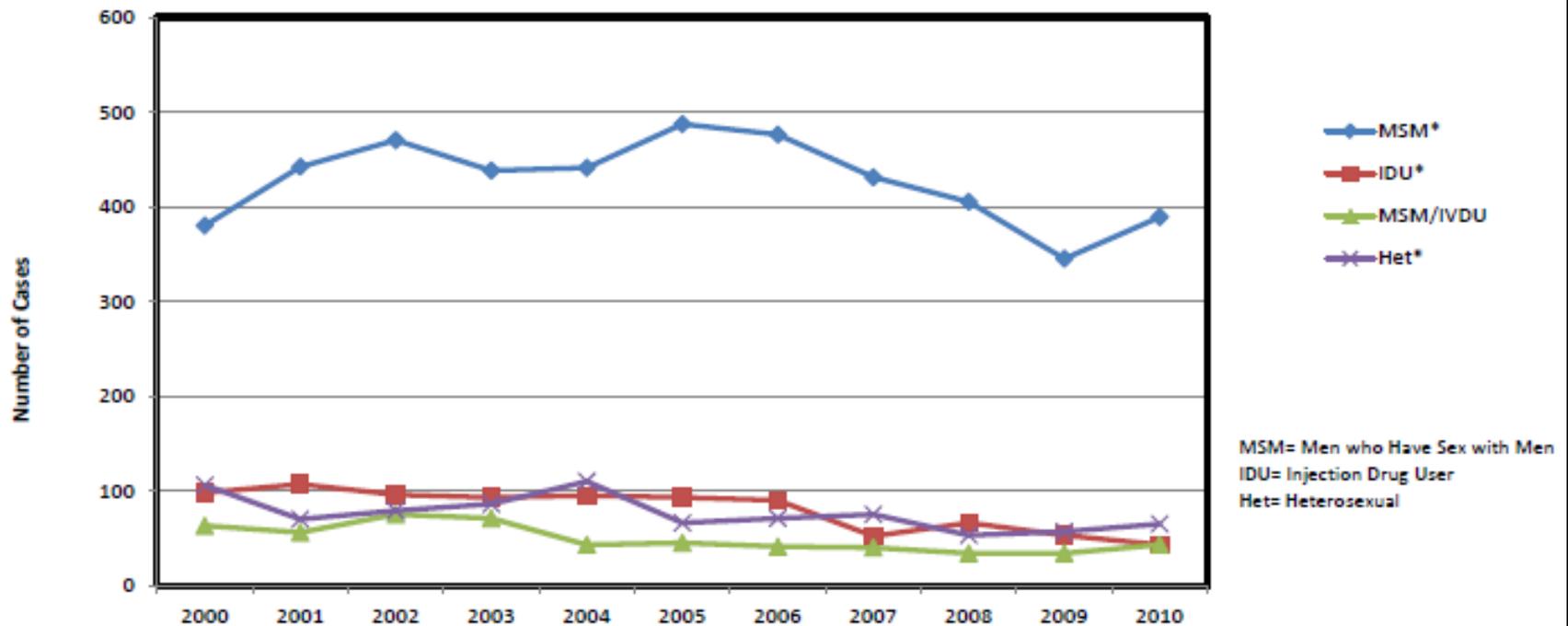


# HIV Incidence in Maricopa County, AZ

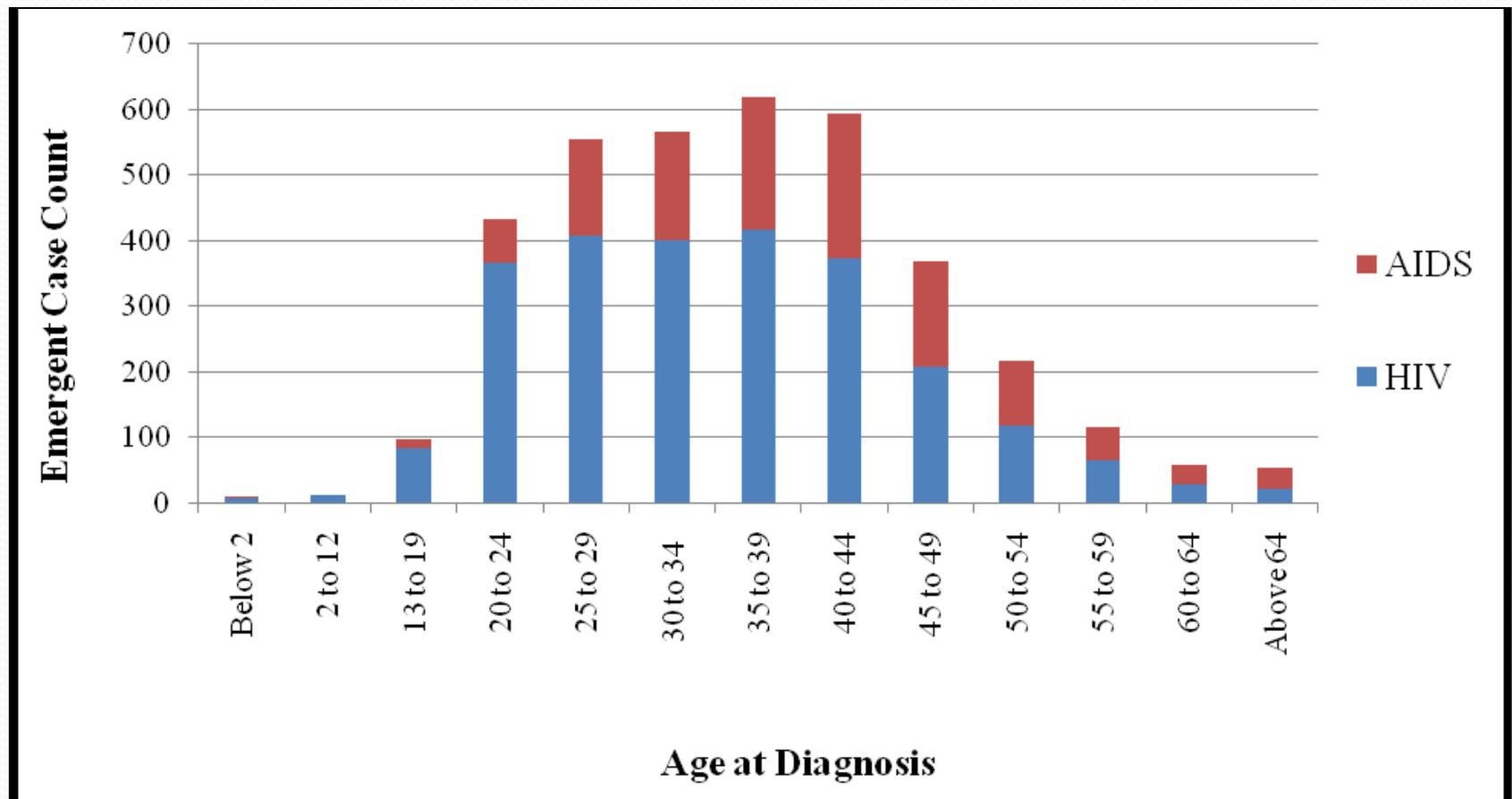


# MSM represent the majority of HIV/AIDS cases (AZ)

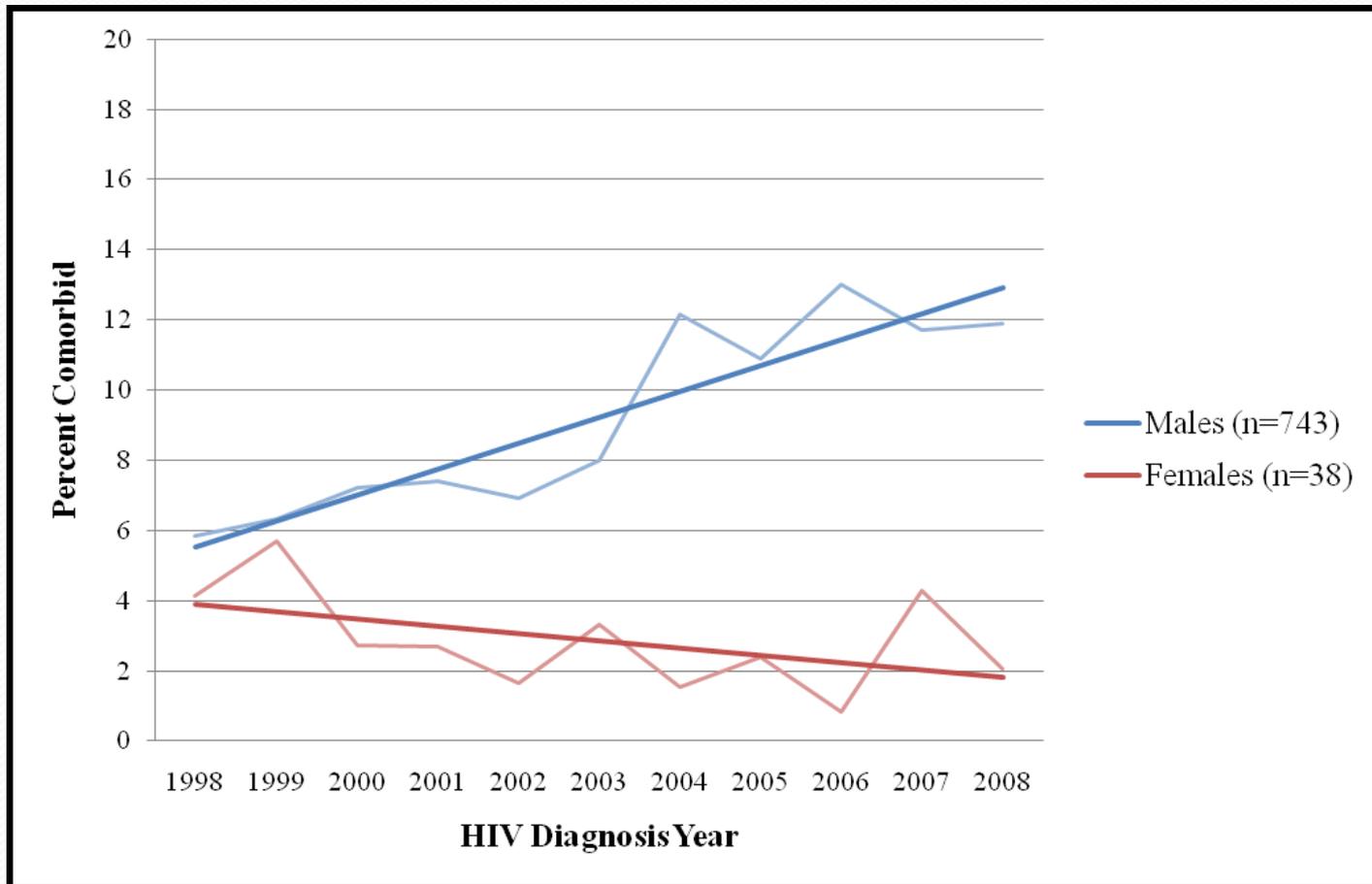
Arizona HIV/AIDS Incidence by Risk, 2000-2010



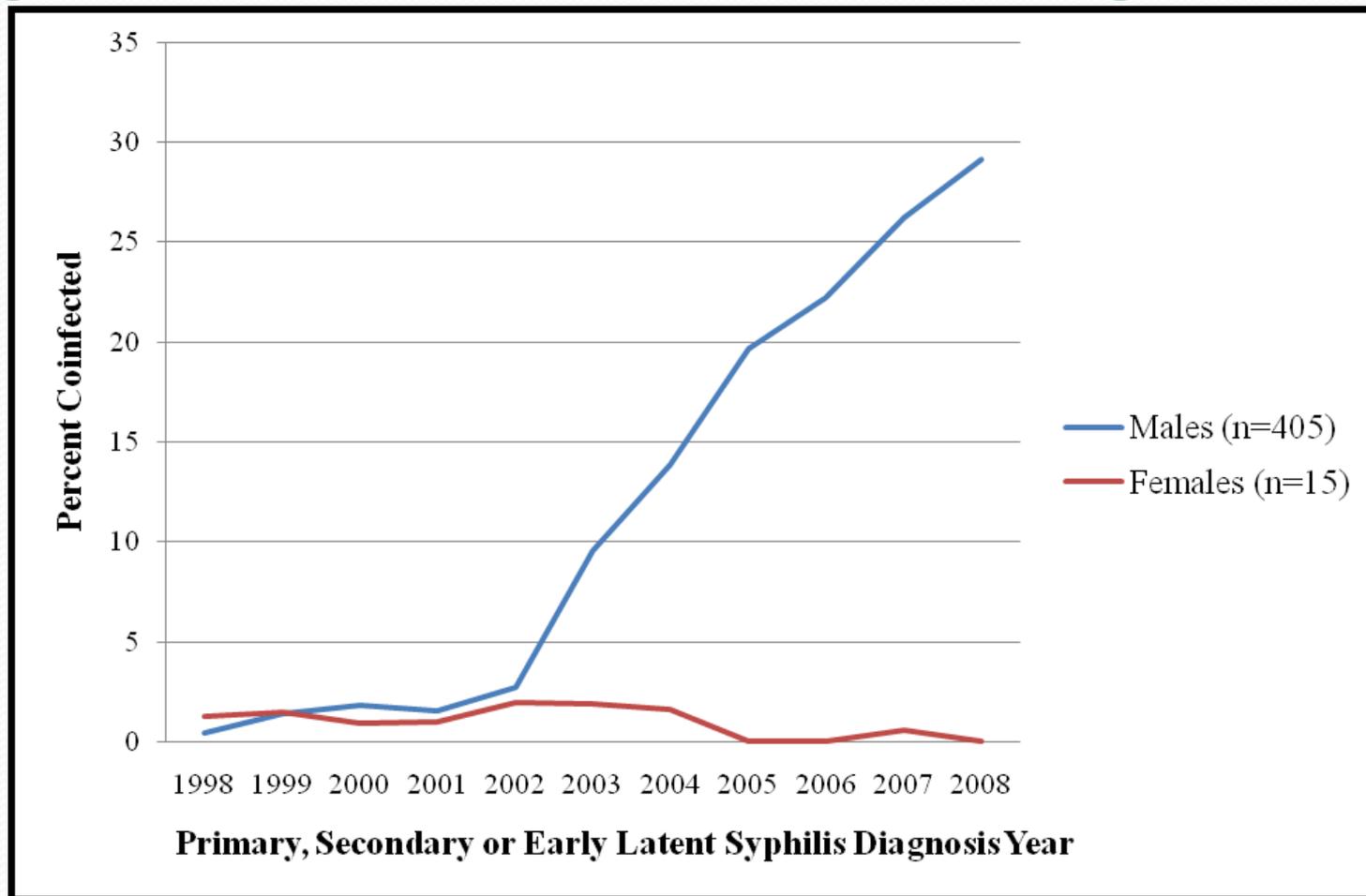
# Arizona Emergent HIV & AIDS Cases by Age Group at Diagnosis, 2004-2008



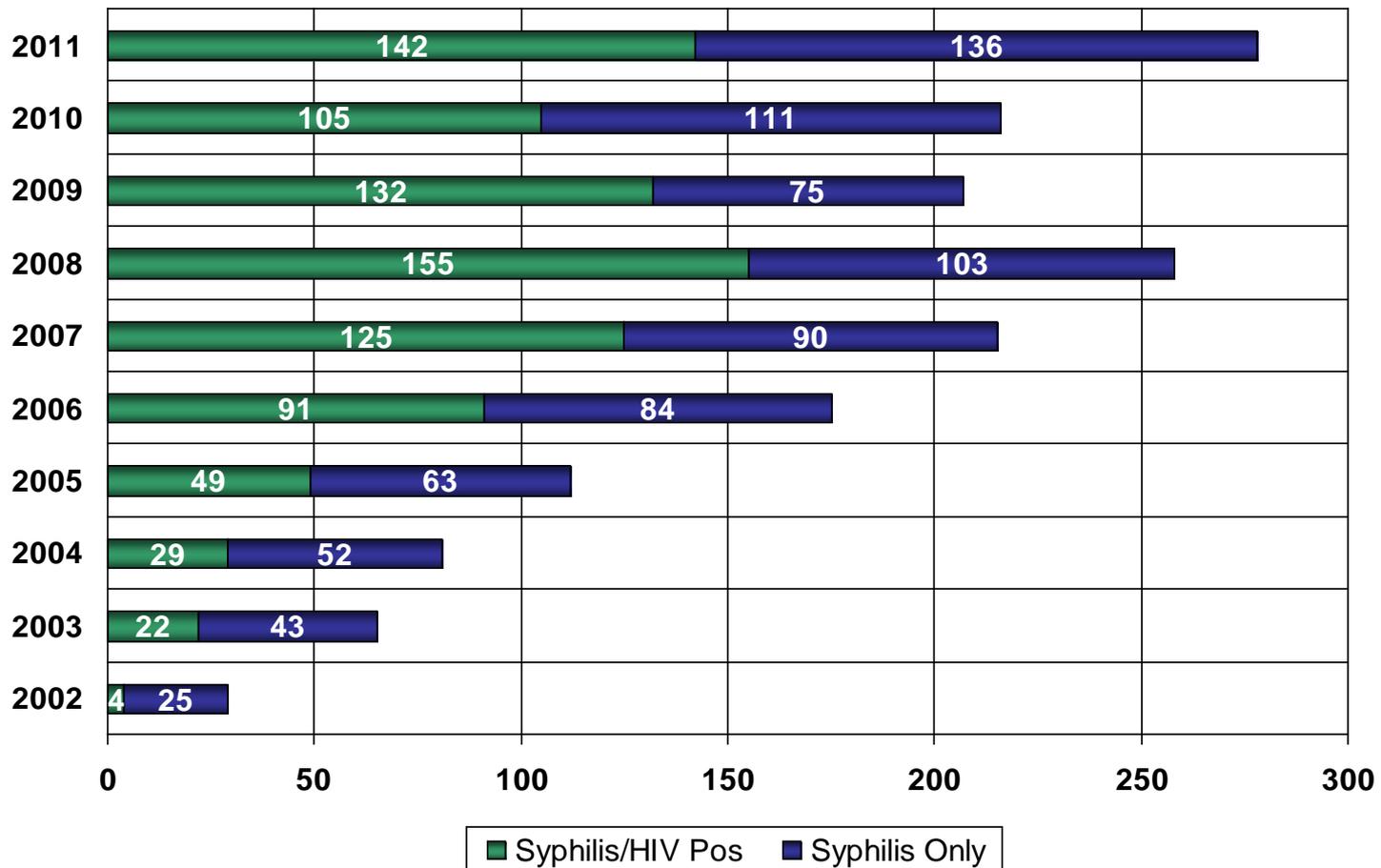
# % of HIV infected Persons with a Reported History of Syphilis (AZ)



# % of Persons with Early Syphilis Diagnosis with Prior HIV Diagnosis (AZ)



# About 50% of all early syphilis cases in MSM are co-infected with HIV (Maricopa County)



# Methods

Data Sources

Population Criteria

Evaluating Serosorting

# Methods

- Surveillance data sources
  - Syphilis interview records of all patients meeting selection criteria
  - Comprehensive review of patient medical charts
  - County and state HIV databases
  - County field records (paper & electronic)
  - Arizona State STD Database

# Syphilis Partner Services

- All reactive RPR tests reported to Maricopa County Public Health
- Infected individuals receive standard treatment (2.4 MU IM of Benzathine penicillin) and an interview
- Interview
  - Symptoms for staging
  - Risk assessment
  - Partner elicitation to avoid re-infection and ongoing community transmission

# Population Criteria

- Original patients selected from January 2009 – December 2011
- 24 years of age or younger
- Male or transgender
- Received a diagnosis of early syphilis
- All partners of these patients as elicited during syphilis partner services\*

*\*Based on data available as of 5/2012*

# Evaluation of Serosorting

- Elicited partners of original patients
- Serosorting = All elicited partners of concordant HIV status as the original patient
- Not serosorting = One or more elicited partners of discordant HIV status as the original patient
- Unknown serosorting = One or more partners of unknown status, either exclusively or in addition to partners with concordant status
- Excluded: Patients who did not provide any partners

# Findings

Demographics

Results by HIV Status

Key Serosorting Findings

# Demographics

- 172 cases meeting the selection criteria within the study period (09 – 11)
- 164 original patients (8 re-infections)
- 71% men who have sex with men
- 75% identify as a racial/ethnic minority
- 30% HIV+ as of 5/2012



# Results: HIV + Patients



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49 HIV+ MSM with syphilis

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49 HIV+ MSM with syphilis

10 (20%) had only  
HIV+ partners

14 (29%) had  $\geq 1$   
HIV- partners

25 (51%) had  $\geq 1$   
HIV ? partners

# Results: HIV + Patients

49 HIV+ MSM with syphilis

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Possibly  
serosorting

# Results: HIV + Patients

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Probably not  
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Unknown if  
serosorting



# Results: HIV- Patients



# Results: HIV- Patients

111 HIV- MSM with syphilis

# Results: HIV- Patients

111 HIV- MSM with syphilis

42 (38%) had only  
HIV- partners

12 (11%) had  $\geq 1$   
HIV+ partners

57 (51%) had  $\geq 1$   
HIV ? partners

# Results: HIV- Patients

111 HIV- MSM with syphilis

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# Findings

- HIV+ patients were less likely report serosorting as compared to HIV- patients
- Demographics such as age and race are not associated with serosorting
- Behavioral risks not associated with serosorting
  - Internet use
  - Anonymous sex
  - Incarceration

# So What?

Interpretation of Findings

Recommendations

Implications for Public Health

Limitations

# Interpretation of Findings

- Unprotected sex among high risk young HIV infected and uninfected MSM
  - Evidence = syphilis, history of other STIs
  - Unprotected anal intercourse (UAI)
- HIV exposure of partners through limited serosorting
- Limited disclosure of HIV status among partnerships
- Opportunities for HIV transmission among this group of young MSM

# Recommendations

- Routine testing of HIV, syphilis and other STDs
  - CDC recommends MSM be tested at least once a year
- HIV case management for patients not in care
- Prevention counseling for HIV+ to avoid STD re-infection and transmission of HIV to HIV-uninfected partners
  - Type of intercourse
- STD provider inquiry about whether patients are on HAART
- Collection of HIV status of patients and partners during interview
  - Clearly document date of last HIV test and result

# Public Health Implications

- Prevention efforts should be directed towards HIV+ men who show evidence of unprotected intercourse, and young HIV- MSM who acquire syphilis
- Early Antiretroviral Therapy
  - Prevents HIV-1 infection in serodiscordant couples
  - Adherence implications
  - Prolongs life, but widens window of HIV transmission if non-adherent
- Truvada for prevention purposes in high risk populations (PREP)

# Limitations

- Source of HIV infection is unknown
- Limited partner information
  - Unable to locate
  - Refused examination
  - Insufficient info given by original patients
- Serosorting intentions
- May not be generalizable
- Partners may have tested negative somewhere else
- Care outcomes not systematically documented

# Acknowledgements

- Maricopa County Department of Public Health
  - Melanie Taylor, MD MPH
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# Thank you!

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Questions?