Low Suppression and High HIV Diagnosis Rate Among Men Who Have Sex with Men (MSM) with Syphilis — Baltimore, Maryland
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BACKGROUND
Syphilis diagnoses in the United States have increased substantially over the past decade, and most cases occurred among MSM. Infection with syphilis increases the risk of acquiring and transmitting HIV.

• The occurrence of syphilis in an HIV-infected person is an indication of behavior that might increase the likelihood of HIV transmission.

• Among US metropolitan statistical areas in 2011, Baltimore had the:
  - 27th highest rate of reported cases of primary and secondary syphilis
  - 30th highest estimated number of cases of primary and secondary syphilis

• Subpopulation of MSM diagnosed with repeat syphilis infections has been noted by health officials in Maryland as a potentially important group for sexually transmitted disease (STD) and HIV prevention interventions.

• We conducted an investigation to identify characteristics of this subpopulation that potentially could strengthen syphilis and HIV prevention interventions in the Baltimore area.

METHODS
• Data Sources: STD and HIV surveillance data, partner services interview data

• Inclusion Criteria
  - MSM (as determined by reported risk behaviors)
  - Age ≥ 15 years
  - Most recent syphilis diagnosis in Baltimore City or County
  - Diagnosed with early syphilis (primary, secondary, or early latent) in 2010 or 2011

• Definition of "Repeat" Syphilis
  - Had been treated for syphilis at least 6 months prior (2010-2011), and:
    - Had a 4-fold increase in RPR and a 2-fold increase in RPR between diagnoses (Figure 2)
  - The later syphilis infection was diagnosed as primary or secondary syphilis

MAIN OUTCOMES
• HIV Status (Figure 3)
  - Determined by matching STD surveillance against HIV surveillance data

• Those diagnosed with HIV within 3 weeks after their syphilis diagnoses were considered HIV-positive at time of syphilis diagnosis

• HIV Viral Suppression among HIV-positive MSM (Figure 3)
  - Last viral load within year before most recent syphilis diagnosis (<200 copies/mL)
  - Estimated Annual HIV Diagnosis Rates among HIV-positive MSM (Figure 4)

RESULTS

Table: Characteristics of MSM with syphilis, 2010-2011, Baltimore City and Baltimore County

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>MSM with syphilis (n = 283)</th>
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<tbody>
<tr>
<td>Age (years)</td>
<td>26 (15-61)</td>
</tr>
<tr>
<td>Race</td>
<td>86% White, 14% Black</td>
</tr>
</tbody>
</table>
| Year of syphilis diagnosis 2010: | 126 (45%)
| 2011: | 157 (55%)
| Time between two most recent syphilis diagnoses | 26% (73/283) suppressed
| Diagnosis of syphilis at time of most recent syphilis diagnosis | 91% (259/283) | 17% (49/283) | 2% (5/283)
| Viral load within year before most recent syphilis diagnosis | <200 copies/mL (183/283) 86% (240/283) 14% (39/283) |

Figure 1: Time between two most recent syphilis diagnoses for 283 MSM with repeat syphilis, 2010-2011, Baltimore City and Baltimore County

DISCUSSION

• In MSM diagnosed with syphilis in the Baltimore area had repeat infection

• Most men were diagnosed with syphilis at a later stage than primary syphilis, there may be:
  - Missed opportunities for early diagnosis

• Prior treatment for potential transmission to others

• 20% of repeat syphilis infections occurred ≤12 months apart

• Increases the opportunity of syphilis testing might reduce time to diagnosis

• The majority of MSM in the Baltimore area with syphilis infection, particularly repeat syphilis, are longtime MSM.

• Consistent with national data, few appear to be virally suppressed at the time of syphilis diagnosis, which can increase the chance of HIV transmission.

CONCLUSIONS

• Focusing treatment and prevention efforts on populations with high HIV burden might:
  - Increase the yield of prevention spending
  - Improve outcomes for both syphilis and HIV in the Baltimore area

• Possible foci of future treatment and prevention efforts could include:
  - Among all MSM:
    - Reinforcing current guidelines for HIV and STD screening at least annually
  - Among MSM with a prior syphilis diagnosis
    - Increasing frequency of syphilis testing to every 3-4 months

• For HIV-infected, focusing on efforts to achieve HIV suppression through clinical care

LIMITATIONS

• Our data may underestimate the burden of disease, since not all HIV and syphilis infections have been diagnosed or reported

• Our method of determining HIV viral suppression included only those laboratory reports reported to the state HIV surveillance system, thus, number of viral suppression may be underestimated

• Our estimate of the number of MSM in Baltimore City is based on national estimate of the percent of males that are MSM (3.9%), which may not accurately reflect the population in Baltimore City.

REFERENCES


Figure 2: HIV status for MSM at time of most recent syphilis diagnoses, 2010-2011, Baltimore City and Baltimore County

Figure 3: Estimated annual HIV diagnosis rate*, 2007-2011, Baltimore City

Figure 4: 20% of repeat syphilis diagnoses occurred ≤12 months apart

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