Trends in HIV testing and undiagnosed HIV in men who have sex with men in London, United Kingdom (UK) 2000-2013: implications for HIV prevention

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Annual new HIV and AIDS diagnoses and deaths: UK, 1981-2011


MSM constitute 3.8% (115,000) of the London adult population compared to 2.5% in the UK.

Antiretroviral treatments

- Reduction in morbidity and mortality
- Prevention of mother to child transmission
- Prevention of sexual transmission of HIV
- Prevention of acquisition of HIV (PrEP)

Voluntary HIV testing

HIV testing policies and guidelines in the UK
HIV testing policies and guidelines in the UK

- Testing all patients diagnosed with STI
- Annual testing to MSM
- Frequent testing to MSM if seroconversion related symptoms or high risk exposure

Aims

- Using the London Gay Men’s Sexual Health Survey data to examine trends between 2000-2013
  - HIV prevalence
    - Overall
      - Undiagnosed HIV prevalence
      - Sexual health clinic attenders in the last year
      - Non-sexual health clinic attenders in the last year

- Testing in general medical services in high HIV prevalence area (>2 diagnosed cases/1000 people)
  - STI/HIV testing to MSM every three months if report condomless sex with new or casual partners.

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- Using the London Gay Men’s Sexual Health Survey data to examine trends between 2000-2013
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    - Overall
      - Undiagnosed HIV prevalence

- HIV testing
  - Ever
  - Testing in the last year
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• Using the London Gay Men’s Sexual Health Survey data to examine trends between 2000-2013
  – HIV prevalence
    • Overall
    • Undiagnosed HIV prevalence
      – Sexual health clinic attenders in the last year
      – Non-sexual health clinic attenders in the last year
  – HIV testing
    • Ever
    • Testing in the last year
• To examine factors associated with undiagnosed HIV (only 2011-13 data)

Methods

• Gay Men’s Sexual Health Survey conducted annually/biannually between 2000-2013
• Social venues in London
• Self completed questionnaires
• HIV antibody testing using Orasure oral fluid collection device
• Barcode linked survey to Orasure device

Definitions

• Undiagnosed HIV:
  Positive Orasure specimen (Ab+) and either:
  – had never had an HIV test
  – believe current status negative or don’t know
  – result of my last HIV test was negative or didn’t know

• Seroconcordant condomless sex:
  condomless sex in last year only with persons of known same HIV status as themselves

• Serodifferent condomless sex:
  condomless sex in last year with persons not known to have same status as themselves

Analysis

• Trends analysis
  – Logistic regression to examine association between survey year modelled as a linear term and variables of interest
  – Linearity was assessed using LRT relative to the model with year included as categorical variable
• Factors associated with undiagnosed HIV
  – Stepwise backward model selection procedure including variables associated with outcome in univariate analysis (p<0.2)

Results
Study population

- 2000-2013 (n=11,876)
- Orasure specimen uptake: 65-87%
- Participation rate: 50-70%
- 87% White; Median age 33.9 years

Trends in HIV testing: ever and in the last year

- Overall 12.8% (1505/11876) men were HIV antibody+
Undiagnosed HIV fraction: 2000-2013

Overall HIV prevalence: 2000-2013

Overall Undiagnosed HIV: 2000-2013

Undiagnosed HIV trends: sexual health clinic attenders and non attenders in the last year

Undiagnosed HIV: recent infections 2011-2013

- 24% (49/188) undiagnosed infections
HIV testing in last year among undiagnosed HIV+ men: 2011-2013 (n=49)

Factors associated with undiagnosed HIV: (2011-13 only)

**Summary**

- Ever HIV testing has increased; however 40% of men had not tested in the last year
- Despite a non-significant decline, a substantial proportion of HIV infections remain undiagnosed
- Undiagnosed infections remain high among men who had not attended STI clinics in the last year
- Substantial proportion of undiagnosed HIV+ men had engaged only in seroconcordant condomless sex in the last year
- Recent acquisition of undiagnosed infections and seroconcordant condomless sex among undiagnosed HIV+ men potentially explains sustained HIV transmissions in MSM.

Factors associated with undiagnosed HIV: (2011-13 only)

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<tr>
<th></th>
<th>Adjusted odds ratios (95% CI)</th>
<th>P-value</th>
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<td>Employment status</td>
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<tr>
<td>Unemployed</td>
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<tr>
<td>Diagnosed with STI in the last year</td>
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<tr>
<td>No</td>
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<tr>
<td>Yes</td>
<td>2.97 (1.30-6.78)</td>
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</tbody>
</table>

- Age, ethnicity, STI clinic attendance in the last year, none of the sexual behaviour factors were associated with undiagnosed HIV
Limitations

- Survey design
  - Convenience sample
  - Self-reported data
  - Changing profile of men attending social venues

Strengths

- Repeat surveys 14 years
- Biological specimen

Implications and conclusions

- Increasing testing frequency especially among men recently diagnosed with STI
- Expansion of testing in non-sexual healthcare settings
- Seroconcordant condomless sex among HIV-ve men not protective
- Offering pre-exposure prophylaxis to HIV-ve MSM

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