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Tests of recent infection, RITA programme in the UK

Coverage
Representativeness
Findings
Future work
The Recent Infection Testing Algorithm

**AIM** Incorporate TRI as part of the routine public health monitoring of all newly diagnosed HIV infections in the UK

**Public Health Benefits**
- Calculate incidence estimates (at relatively low cost using a single sample)
- Identify groups most at risk of acquiring HIV in the UK
- Target public health interventions
- Evaluate the impact of HIV prevention measures
- Identify populations for recruitment into clinical trials of interventions to prevent infection or treat early infection

We are the only country to return results to the patient

**Potential Clinical benefit**
- Better understand how infection was acquired
- Tailor behavioural intervention
- Used to prioritise contact tracing (public health benefit)
Avidity test

UK AxSYM avidity - guanidine based test

Low avidity index (AI) <0.8 = ‘recently infected’ within 4-6 months

*Suligoi et al 2009*–mean time to cross 0.8 threshold =6 months (95% 5-8)
Approx 90% will cross 0.8 within 12 months

False Recency rate – persons misclassified as ‘recent’ = 4.5%
(Based on 1287 persons avidity tested >1 year after diagnosis in UK)
Distribution of avidity scores of among HIV diagnoses classified as recent infections, 2009-2011
UK Rita Programme

Since 2009
- >90 clinical centres on board
- >50 laboratories
- Good geographical coverage

Samples from new diagnosis aliquot sent to Colindale

Results matched to HPA HIV datasets
misclassification of recent
- CD4 count <200
- AIDS
- ART

Final results by risk groups
Testing coverage for recent HIV infection, England and NI, 2009- June 2011

- **2009**: ND=6148, Samples matched: 23, Samples unmatched: 3.4
- **2010**: ND=6187, Samples matched: 36, Samples unmatched: 7
- **2011**: ND=2486, Samples matched: 46, Samples unmatched: 34
Recently acquired infections among new HIV diagnoses: E & NI, 2009-2011 (combined)

<table>
<thead>
<tr>
<th>Probable exposure category</th>
<th>No. of RITA results</th>
<th>No. Recent</th>
<th>% Recent (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men who have sex with men</td>
<td>2848</td>
<td>632</td>
<td><strong>22.2% (20.7-23.8%)</strong></td>
</tr>
<tr>
<td>Heterosexual contact</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>1146</td>
<td>88</td>
<td><strong>7.7% (6.2-9.4%)</strong></td>
</tr>
<tr>
<td>Women</td>
<td>1706</td>
<td>142</td>
<td><strong>8.3% (7.1-9.7%)</strong></td>
</tr>
<tr>
<td>Total</td>
<td>2852</td>
<td>230</td>
<td><strong>8.1% (7.1-9.1%)</strong></td>
</tr>
<tr>
<td>Injecting drug use</td>
<td>93</td>
<td>4</td>
<td><strong>4.3% (1.2-10.6%)</strong></td>
</tr>
<tr>
<td>Other/Not Reported</td>
<td>491</td>
<td>51</td>
<td><strong>10.4% (7.8-13.4%)</strong></td>
</tr>
<tr>
<td>Total</td>
<td>6284</td>
<td>917</td>
<td><strong>14.6% (13.7-15.5%)</strong></td>
</tr>
</tbody>
</table>
Recently acquired infections among new HIV diagnoses by age among MSM: E & NI, 2009-2011

- 15-24: 118 (30%)
- 25-34: 268 (30%)
- 35-50: 209 (30%)
- 50+: 37 (10%)
- All: 632 (26.8%)

Percentage recent infections by age among MSM.
Recently acquired infections among new HIV diagnoses by age among heterosexuals: E & NI, 2009-2011

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Heterosexual Men</th>
<th>Heterosexual Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-24</td>
<td>5</td>
<td>32</td>
</tr>
<tr>
<td>25-34</td>
<td>34</td>
<td>51</td>
</tr>
<tr>
<td>35-50</td>
<td>34</td>
<td>44</td>
</tr>
<tr>
<td>50+</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>All</td>
<td>88</td>
<td>142</td>
</tr>
</tbody>
</table>

[Bar chart showing the distribution of infections among heterosexuals by age and gender.]
Key findings

• Over 1 in 5 MSM diagnosed with HIV between 2009-2011 had a recent infection
• 1 in 3 MSM aged less than 25 years acquired their infection recently compared to 1 in 8 over 50 years
• 1 in 12 heterosexuals diagnosed with HIV between 2009-2011 had a recent infection
• Half of all recent infections diagnosed were in London.
• CAUTION in interpreting results, need for incidence estimates
Achievements

• Coverage now reached >60% new diagnoses (However we need to improve identifiers from some sites) & high representativeness

• We have reduced testing of invalid samples

• Staff acceptability study completed (HIV medicine) Garrett NJ et al. The Recent Infection Testing Algorithm (RITA) in clinical practice: a survey of HIV clinicians in England and Northern Ireland. HIV Medicine, 2012
Ongoing and Future activities

- Population incidence estimates
- Patient acceptability study underway
- Understanding the properties of the Avidity Test
- Assess Research Opportunities
  - use in contact tracing activities
  - to match data with phylogenetics/other datasets
Acknowledgements

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Also members of the UK Collaborative Group for HIV and STI surveillance (listed in surveillance report)