The Epidemiology of TB, TB/HIV and MDR-TB in Adolescents: what is the extent of the problem?

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“Child” and “adolescent” have varied and often overlapping definitions:
Methods – Systematic Review

- Systematic review for setting-specific estimates of incidence and prevalence
  - Cohort studies
  - National prevalence surveys
- ~3,496 hits > 481 full texts > 5 included studies (+8 on 15–24s)
<table>
<thead>
<tr>
<th>Author, year</th>
<th>Setting</th>
<th>Age group</th>
<th>Estimate type</th>
<th>Point estimate per 100,000 (WHO all ages estimate 2012)</th>
<th>95% confidence interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waako, 2013</td>
<td>Rural Uganda</td>
<td>12–18</td>
<td>Incidence</td>
<td>253 (193)</td>
<td>125, 402</td>
</tr>
<tr>
<td>Mahomed, 2013</td>
<td>Rural South Africa</td>
<td>10–18</td>
<td>Incidence</td>
<td>450 (827)</td>
<td>290, 720</td>
</tr>
<tr>
<td>Mahomed, 2013</td>
<td>Rural South Africa</td>
<td>10–18</td>
<td>Prevalence</td>
<td>282 (857)</td>
<td>161, 457</td>
</tr>
<tr>
<td>Marais, 2005</td>
<td>Cape Town</td>
<td>10–14</td>
<td>Prevalence</td>
<td>210 (857)</td>
<td>5, 1,165</td>
</tr>
</tbody>
</table>
Methods – Incidence Estimate

- Multiple imputation of missing data in 15–24s, as for children under 15
- Disaggregation into 5 year age groups using data from countries with case based electronic surveillance systems
Results – Global Estimates

- We estimate that there were ~650,000 incident TB cases among adolescents in 2012 (CI: 545,000 – 825,000)

- Smear negative and extrapulmonary disease appear to be more common than smear positive disease, even in older adolescents.
Issues for future work

- Need for standardised reporting of age in published research – ideally 5 year age groups <25yrs
- Global epidemiology of extrapulmonary disease
- Programme data on TB/HIV, MDR-TB?
Acknowledgements

- Steve Graham (University of Melbourne)
- Babis Sismanidis (World Health Organisation)
- Lisa Nelson (Centers for Disease Control)
- Rashida Ferrand (London School of Hygiene and Tropical Medicine)
- James Seddon (Imperial College, London)

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