Patient costs in models of TB prevention: an increasingly important consideration?

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Rationale

• Consideration of patient costs will;
  – Give a more accurate estimate of TB spending
  – Help us to understand unintended consequences of some interventions
  – Help to avoid cost-shifting from state to patient
  – Forms the foundation for work on equity, financial risk protection and catastrophic spending (as we heard earlier this week)
Cost of seeking care for TB

- Economic consequences of the cycle of TB and poverty in LMICs is well documented: Poverty increases the risk of contracting TB, while having TB exacerbates poverty.

- Although most countries aim to provide free TB diagnosis and treatment, many patients incur high direct and indirect costs due to TB - these costs have largely been ignored.
  - Direct costs comprise out-of-pocket spending for medical (e.g. medicines or consultations) and nonmedical (e.g. transport or food) items
  - Indirect costs constitute foregone income due to lost workdays.

- What are the consequences of these costs?
  - can delay care seeking, reduce adherence, slow recovery, exacerbate health problems and increase drug resistance.
  - may lead to catastrophic health expenditure and impoverishment.
Perspective of costing and CEA of TB programmes

• Historically, most TB cost and cost-effectiveness studies used a provider or public funder perspective

• The provider perspective is used for different reasons:  
  – EEs are often used to assess the relative efficiency of alternative interventions within the healthcare sector.
  – Conducting an evaluation from societal perspective is time-consuming and expensive

• Increasing numbers of costing and cost-effectiveness studies are reporting their results from a societal perspective, including both provider and patients costs
Perspective of costing and CEA of TB programmes

Total studies = 174

Studies included patients costs = 68
Patient costs in TB prevention studies

• The elimination of TB requires the management of LTBI, in particular in key populations.
• Patient costs are reported as a barrier to access to care (same as active TB)
• Many costing and cost-effectiveness studies of LTBI screening and treatment, majority in high income settings.
• However, only few reported patients’ costs or adopted societal perspective.
• There are heterogeneity in patients’ cost measurement, some with no details methodology.
TB prevention costing and CEA studies in LMICs (n=8, 22 unit costs)

Only one study reported patients costs
Patient costs of accessing collaborative tuberculosis and human immunodeficiency virus interventions in Ethiopia

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SUMMARY

OBJECTIVE: To measure the patient costs of tuberculosis and human immunodeficiency virus (TB-HIV) services from hospital-based pilot sites for collaborative TB-HIV interventions in Ethiopia.

METHODS: Costs of pre-treatment and treatment for a retroviral treatment were 21% of annual household income. Costs fell as treatment progressed.

CONCLUSION: Our results highlight the need to mitigate the economic impact on patients of treatment for TB and HIV/AIDS (acquired immune-deficiency syndrome)

Table 5  Mean treatment costs, in $US(2005)

<table>
<thead>
<tr>
<th>Treatment category</th>
<th>Direct cost (non-transport)</th>
<th>Direct cost (transport)</th>
<th>Indirect cost</th>
<th>Caregiver cost</th>
<th>Total cost</th>
<th>Monthly household income</th>
<th>Total cost as % of monthly household income</th>
</tr>
</thead>
<tbody>
<tr>
<td>TB treatment smear-positive for out-patients</td>
<td>69</td>
<td>64</td>
<td>78</td>
<td>14</td>
<td>225</td>
<td>38</td>
<td>49</td>
</tr>
<tr>
<td>TB treatment smear-positive for in-patients</td>
<td>225</td>
<td>12</td>
<td>70</td>
<td>20</td>
<td>327</td>
<td>38</td>
<td>71</td>
</tr>
<tr>
<td>INH prophylaxis for out-patients</td>
<td>15</td>
<td>8</td>
<td>17</td>
<td>2</td>
<td>42</td>
<td>34</td>
<td>10</td>
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<tr>
<td>Cotrimoxazole prophylaxis for out-patients</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>12</td>
<td>60</td>
<td>2</td>
</tr>
<tr>
<td>First year of treatment</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>3</td>
<td>40</td>
<td>1</td>
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<tr>
<td>Voluntary counselling and testing</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>3</td>
<td>40</td>
<td>1</td>
</tr>
<tr>
<td>Antiretroviral treatment first year of treatment</td>
<td>65</td>
<td>8</td>
<td>67</td>
<td>1</td>
<td>141</td>
<td>55</td>
<td>21</td>
</tr>
<tr>
<td>Treatment for OI requiring 1 out-patient visit*</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>8</td>
<td>55</td>
<td>1</td>
</tr>
<tr>
<td>Treatment for OI requiring 2 out-patient visits*</td>
<td>8</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>15</td>
<td>55</td>
<td>2</td>
</tr>
<tr>
<td>Treatment for OI requiring 3 out-patient visits*</td>
<td>12</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>23</td>
<td>55</td>
<td>3</td>
</tr>
<tr>
<td>Treatment for OI requiring 4 out-patient visits*</td>
<td>16</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>31</td>
<td>55</td>
<td>5</td>
</tr>
</tbody>
</table>

* The treatment of most OIs treated in Ethiopia requires between one and four out patient visits.

TB = tuberculosis, INH = isoniazid, OI = opportunistic infections.
Costs to the patient included time travelling and waiting to receive care, and transport costs.
So why include patients costs?

• Recommended by Methods for Economic Evaluation Project (MEEP)/Gates Reference Case, Second Panel on CE in US, etc.
• Economic theory asks how to get the most benefit from limited resources:
  – Adopting a narrow perspective doesn’t take into account alternative resource uses beyond the healthcare sector, which may yield greater societal welfare
  – Could result in suboptimal resource allocation decisions.
• Can help design models of care that minimise poverty.
• Helpful for designing support/social protection plans for the patients
  – As a results improve access/utilisation, adherence and recovery
• Important for achieving the global target of having no households incurring catastrophic TB costs
References


- **Asres A, Jerene D, Deressa W.** Pre- and post-diagnosis costs of tuberculosis to patients on Directly Observed Treatment Short course in districts of southwestern Ethiopia: a longitudinal study. *J Health Popul Nutr.* 2018 May 21;37(1):15


- The Unit Cost Study Repository. [https://ghcosting.org/pages/data/ucsr/app/](https://ghcosting.org/pages/data/ucsr/app/)
Thank you

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