Framework for the selection of countries and sub-national areas in which prevalence of tuberculosis disease surveys need to be undertaken

Task Force on TB Impact Measurement meeting
WHO, Geneva, 6 - 7 December 2007
Assessment of TB burden and impact of TB control efforts in the period leading up to the MDG and Stop TB Partnership targets set for 2015

Reasoning based on 2 arguments:

- Ultimate aim for all countries is to rely on data collected through routine surveillance and vital registration systems
  
- Prevalence of disease and infection surveys will be needed for a robust and credible global and regional assessment of TB burden and impact of TB control efforts, particularly in the African, South East Asian and Western Pacific regions.
Epidemiological characteristics of countries that will require prevalence surveys

- Weak routine reporting systems;
- High TB prevalence;
- High TB burden (number of cases);
- High HIV/AIDS prevalence;
Further reasons for carrying out prevalence of disease surveys

• Slow or no decline of TB notifications despite long term implementation of the WHO DOTS strategy;
• High or increasing TB notifications despite low HIV prevalence;
• Availability of prior survey data to monitor national trends;
• High motivation of the National TB Programme (NTP);
• Availability of funding;
• Opportunity to validate routine reporting systems;
• Opportunity to explore interactions between patients and the health system, and potential determinants of health;
• Representative assessments of TB burden and impact efforts at regional or global level, as well as comparisons among countries.
Selection of countries that need to carry out prevalence surveys

- 4 sets of criteria
- First list – relatively inclusive
- Need to narrow down the first list of countries without compromising global and regional assessments
Group 1

Criteria →

1. Estimated smear-positive TB prevalence rate in 2006 ≥ 100/100K population and

2. Accounts for ≥ 1% of the estimated total number of smear-positive TB cases globally for 2006 and

3. Case detection rate in 2005 ≤ 50% or >100%

Explanation →

• Major contribution to global burden of TB
• Feasible sample size
• Exclusion of countries with small contribution to the global burden of TB
• CDR ≤ 50% or > 100% indicate weak reporting systems and problematic TB estimates, respectively
Group 2

Criteria → Explanation →

1. Estimated smear-positive TB prevalence rate in 2006 $\geq$ 70/100K population and
2. Accounts for $\geq$ 1% of the estimated total number of smear-positive TB cases globally in 2006 and
3. Estimated HIV prevalence rate in the adult population (15 to 49 years) in 2005 $\geq$ 1%

- Less stringent on TB prevalence rate
- Incorporates countries with high HIV prevalence
Group 3

Criteria →

1. Estimated smear-positive TB prevalence rate in 2006 $\geq 200/100K$ population
   and
2. Accounts for $\geq 0.5\%$ of the estimated total number of smear-positive TB cases globally in 2006

Explanation →

• Less stringent on contribution to the global burden

• Incorporates countries with particularly high TB prevalence rates
Group 4

Criteria 4 →

1. Country has done a national survey since 2000
   or
2. Country has a plan to do a national survey up to 2010*

Explanation →

- Availability of prior survey data to monitor national trends
- High motivation of NTPs

Methodological issues

Calculation of sample sizes:

- Prevalence of smear positive TB rates estimated for 2006;
- Precision 25%;
- Design effect 1.3;
- Missed cases 25%.

Calculation of costs based on the limited data available from recent surveys:

- US$ 5 / person → without X-rays
- US$ 15 / person → with X-rays
## All selected countries

**Criteria 1, 2, 3 or 4**

<table>
<thead>
<tr>
<th>Region Global Plan</th>
<th>N</th>
<th>N High Burden</th>
<th>% global TB burden</th>
<th>% regional TB burden</th>
<th>Sample Size</th>
<th>Cost (US$_millions)</th>
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Questions for discussion

• Are these 4 sets of criteria the most relevant ones?

• How can the list be further refined without compromising the purposes of global and regional assessments?

• How would the Task Force encourage countries to undertake surveys if they don't have plans to do them? What would be the best way to approach such countries?

• How can the Task Force ensure that the upcoming prevalence surveys will use standard methods to produce internationally valid and comparable data?