TB Disease Prevalence Survey
TB Impact Measurement - Update

WS on Repeat Survey
8-10 Feb 2012

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Back Ground: 3 strategic areas of work of the WHO Global Task Force on TB Impact Measurement (Dec 2007)

- **Strengthening surveillance** - use of routine surveillance data to measure incidence, prevalence and mortality
  - all countries
  - ultimate goal to measure cases and deaths directly from notification and vital registration data

- **Prevalence of TB disease surveys** in ≥ 21 global focus countries

- **Periodic review and revision of methods** used to translate data from surveillance systems and surveys into estimates of disease burden
The Task Force Work since 2008

- Set a global guidance for standardization – Lime Book
- Assist Countries
  - Feasibility assessment
  - Preparation & in-country sensitization
  - Workshops: Study design & Budgeting
  - Protocol Review
  - Coordination of Technical Assistance
  - Survey Operation Review
  - Analysis
  - Certificate the study
- Training (Survey managers, Consultants)
- Provide data for Re-estimation of TB Burden
- Global Advocacy & Fund raising
Prevalence surveys major global momentum

Underpinned by "AA" collaboration + global coordination among international technical and financial partners

Global focus countries (GFC) selected by Task Force
Progress in Countries
A. Countries Reporting Survey Results

- **Bangladesh (2007-09)** - Publish the results in a peer review journal

- **Myanmar (2009-10)** - Final Report to be published: Burden higher than expected

- **China (2010)** – Final Report to be published: Showing significant decline of bacteriologically confirmed cases

- **Ethiopia (2010-11)** – Preliminary Results – First National Survey in Africa in 50 years along WHO guidelines (with CXR screening and culture diagnosis)

Note: **Philippines and Vietnam** (-2007) have published the results in peer review journals, planning a repeat survey by 2015
B. Countries completing the surveys in 2011

• Cambodia
  – A first repeat survey under nationwide DOTS (2002 – 2011)
    • Impact and limitation of quality DOTS programme
  – Contribution to surveys of other countries and WHO training courses

• Pakistan
  – Successful Field Operation in spite of lots of challenges

• Laos*
  – Showing much higher TB burden

*: Non Global Focus Countries
C. Countries completing a pilot and/or launching a survey in 2011

• Nigeria: 19 Feb-
• Thailand : from Mar 2012
• Tanzania: on going
• Rwanda : to launch
• Gambia* : on going
D. Countries preparing to launch a survey in 2012

- Ghana
- Malawi
- Kenya
- South Africa
- Indonesia
- Uganda

We will have much clearer vision of TB Epidemiological Situations in Africa

Funding is basically approved and a revised protocol has been submitted to the Task Force Review; Procurement is the biggest challenge in most of the countries
E. Other countries showing interests

- Sierra Leone
- Zambia
- Mali
- Nepal*
- Sudan*
- Eretria*
- Botswana*
- India*
- DPRK*
- Others
Characteristics of 20 surveys in pipelines since 2007

- Multistage Cluster Sampling by PPS with 2-3 Strata (Most)
- Sample Size: 40,000-60,000 (10 surveys)
  - > 100,000: China, Pakistan and Viet Nam
- Cluster Size: 500-800 (12 surveys)
- Age: > 15 years old (19 surveys)
- Screening methodology: Interview (symptom) + CXR: 18 surveys
- Diagnosis: Smear and Culture (19 surveys)
Characteristics of Surveys

• Smear: Introduction of LED Fluorescent microscopy
• Culture: No successful survey with Liquid Media yet due to logistic challenge – high contamination (5-7 days to inoculate after the collection)
• CXR: Onsite reading: Direct CXR (Auto-processor or Digital – CR or DR) - Any abnormality in lung (most)
• Symptom screening: NTP definition of TB suspects (most) or combination of additional symptoms in high HIV setting
• HIV Testing – only detected TB cases by routine offer by the program (most)
Achievements and Challenges

• More accurate estimation of the burden
• Understandings on the gap with the surveillance data
• Policy implications

Challenges- Limitations

• Limited capacity of Culture Lab
• TB in Children (and extra-pulmonary)
• Introduction of new technologies – molecular, digital....
The Way Forward

Past 3 years
• Introductory Seminar
• Workshop on Survey Design and Preparation
• Workshop and Seminar on Survey Operation and Management
• Training for country coordinators and consultants

Current agenda
• Countries- Rather comfortable with field work, while straggling with data management, culture and analysis

Country-Country collaboration
Support on Data management and Analysis

2012-
• Repeat survey design
• Policy Implications
Summary

• Since 2008, massive efforts were done to standardize a country survey and to assist countries
• 20 countries are in pipelines and a few others showing interests
• Asia keeps on track to measure changes of TB epidemiology towards the MDGs
• Ethiopia completed the 1\textsuperscript{st} survey in Africa in five decades under the task force support
• TB situation in Africa will be much clearer when at least 5-6 countries will complete a survey in 2012
• Countries and world began to learn implications to the program much more than expected: A quality survey can tell more than prevalence
• Appropriate design and analysis are essential to measure change (and/or impact) by surveys around 2015
What do you want to know by next survey?
And When and How?
And How much it will cost.

Don't decide to do a survey without knowing..
Why?

- More accurate TB burden?
- Declining speed?
- Change or not?
- Evaluation of new policy or strategy?
- Other reasons
How? - LIME BOOK

• The survey design has been standardized – minimum screening criteria for bacteriological examinations
Challenges

• Resource consuming
  – Time, money, HR

• Technical and managerial capacity
Requirements

• Strong commitment and leadership from the NTP/Ministry of Health and a core group of professionals;
• Identification of a suitable institute, organization or agency to lead and manage survey implementation;
• Adequate laboratory capacity;
• Pre-Approval of survey methods for chest X-ray screening by the National Radiation Authority;
• Reliable and timely support for procurement and logistics;
• Funding;
• Field security;
• Community participation;
• Clearance of survey protocols by national and international review boards; and
• The availability of external support and technical assistance.
We also need

- Full time survey coordinator or project leader in early stage of the preparation
Challenges in repeat surveys

• It requires a larger sample size survey by survey along lowering prevalence
• Urbanization:– difficulty in recruitment
• Interval: Shorter – more difficult to detect change; Longer- more difficult to keep institutional memory/HR
• Change of diagnostic standard or practice
• Complicated design and analysis
Interval

• If Fund is available and active case detection is routinely practiced, 3-4 surveys every five year till prevalence becomes <100/100 000 in adults might be the best option. Two surveys won't be able to show the change.

• 10 years: Many background changes may make interpretations difficult
  – New policy just between the surveys
  – Totally different two 5 year plan and strategies
Thank you
Please visit the TB Impact Measurement Task Force website for more information and materials