TB Disease Prevalence Survey  
- Progress Report

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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
Global progress with nationwide prevalence surveys of TB disease

21 Global Focus countries selected by Task Force

As shown in the last progress report in 2010
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 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
- Thailand
- Tanzania
- Rwanda
- Gambia*
D. Countries preparing to launch a survey in 2012

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

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.

We will have much clearer vision of TB Epidemiological Situations in Africa.
E. Other countries showing interests

- Sierra Leone
- Zambia
- Mali
- Nepal*
- Sudan*
- Eretria*
- Botswana*
- India*
- 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)
What we measure and what we learn

Size of the burden (prevalence) and its change

TB Cases in the Community

- Incident Cases
- Self Cure
- Cure by Treatment
- Death
Size: often larger in Asia

TB Cases in the Community

3-4 times or more than the cases under treatment

(Double of annual notification)
When it is smaller, critical assessment on screening and diagnostic measures are more essential

- Ethiopia, Bangladesh
More lessons than expected

Impact of DOTS: removing Chronic Cases from the community
Presence of Symptoms

Limitations of Current Screening Strategies

Symp+

Symp +
Bacteriological Status

Culture Positive

Limitations of Current Diagnostic Tools

Smear+
Size, Behaviour and Practice of Cases (or suspects)

- Including those outside the NTP
Where are they treated?

- Notified
- Notified
- Not-notified
- Not-notified

GPs, Large hospitals, informal sector
Risks and predictive factors

Who are more likely to have TB

TB Cases in the Community

Incident Cases

Self Cure

Cure by Treatment

Death

Poor, smokers, residents in remote areas or urban congestive areas, elders, young adults, mobile populations, Chest X-ray abnormal ?????? ??
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

Now
• Countries- Rather comfortable with field work, while straggling with data management, culture and analysis
  Country-Country collaboration
  Support on Data management and Analysis

Tomorrow
• 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 1st 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