Multidrug-Resistant Tuberculosis in India: Challenges and Potential Solutions

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Burden of TB - India

- Accounts for 1/5 of global incidence of TB
- Tops the list of 22 high TB burden countries
- More than 40% population infected with TB bacillus
# Magnitude of TB

## Global and Indian Scenario

<table>
<thead>
<tr>
<th></th>
<th>Incidence of Disease</th>
<th>Prevalence of Disease</th>
<th>Mortality</th>
<th>HIV Prevalence Among Incidence Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global</td>
<td>9.4 million</td>
<td>14 million</td>
<td>1.3 million</td>
<td>12%</td>
</tr>
<tr>
<td>India</td>
<td>2 million</td>
<td>3 million</td>
<td>280,000</td>
<td>6.4%</td>
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</tbody>
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Socio-Economic Impact of TB - India

- More common amongst the poorest and the marginalized sections of the community
- Affects people in their productive age group (almost 70% of TB patients are aged between 15 and 54 years)
- Average potential loss of 20-30% of the annual household income due to 3-4 months of work-time lost as a result of TB, results in debts
Socio-Economic Impact of TB - India

- One of the leading cause of death among adults
- TB takes a disproportionately larger toll among young females (more than 50% of cases occurring amongst females < 34 years of age)
- 1 hundred thousand women rejected by families every year
- Large no. of orphans and school drop-outs every year
Magnitude of MDR-TB
Global and Indian Scenario

- Globally, an estimated **0.4 million cases** of MDR-TB in 2008
- 3.3% of incident new TB cases estimated to have MDR-TB
- 27 countries account for 85% of all such cases

- In India, MDR-TB estimates (2008)-
  - amongst New cases: **2.3%**
  - amongst Re-treatment cases: **17%**
- Reported MDR-TB cases among incident total TB cases - **99 000**
Magnitude of XDR-TB
Global and Indian Scenario

- 69 countries have reported at least one case of XDR-TB (2010)

- XDR-TB reported in India - magnitude remains undetermined due to the lack of laboratories being capable of conducting quality assured second line drug susceptibility testing
Targets for Global TB Control

- Millennium Development Goals - 2015
  Goal 6: Combat HIV/AIDS, malaria and other diseases
    - Target 6.c: Halt and begin to reverse the incidence of malaria and other major diseases
    - Indicator 6.9: Incidence, prevalence and death rates associated with TB
    - Indicator 6.10: Proportion of TB cases detected and cured under DOTS

- Stop TB Partnership targets - 2015 and 2050
  - By 2015: The global burden of TB (per capita prevalence and death rates) will be reduced by 50% relative to 1990 levels
  - By 2050: The global incidence of active TB will be less than 1 case per million population per year
India’s Strategy for TB Control

DOTS through Revised National TB Control Program (RNTCP)

- Political and administrative commitment
- Good quality diagnosis, primarily by sputum smear microscopy
- Uninterrupted supply of quality drugs
- Directly observed treatment (DOT)
- Systematic monitoring and accountability
Important milestones in TB control

- **1962**: National TB Program (NTP) started
- **1992**: Program Review of NTP done
- **1993**: Revised National TB Control Program (RNTCP), pilots began
- **1998**: Massive RNTCP expansion began
- **2006**: Nation wide DOTS coverage
  632 districts – 1114 million people covered under RNTCP
DOTS-Plus for MDR-TB under RNTCP (1)

- **2010** - DOTS Plus services to be introduced in all the states
- **2012** - Extend these services to all smear positive retreatment cases and new cases who have failed an initial first line drug treatment
- **2015** - Services made available to all smear positive pulmonary TB cases registered under the program

Intended to treat at least 30,000 MDR cases annually by 2012-13
DOTS-Plus for MDR-TB under RNTCP (2)

- Special attention for
  - Quality-assured laboratory capacity (smear, culture and DST)
  - Treatment design
  - Adherence to difficult-to-take regimens for long periods
  - Side-effect management
  - Drug procurement
  - Recording and reporting
  - Human and financial resource constraints
DOTS-Plus for MDR-TB – Current Progress

- MDR TB treatment services scaled up to cover ~ 287 million population in 139 districts across 12 states (4\textsuperscript{th} Qtr 2010)

- Since the inception of services,
  - MDR TB suspects examined for diagnosis – 19,178
  - MDR TB cases confirmed - 5365
  - MDR TB cases initiated on Category IV treatment through 20 DOTS Plus Sites - 3610
Management of MDR-TB in India - Strengths

- Strong program for basic TB control with a high treatment success rate and an improving case detection rate
- Provision for participation of all health care providers including private practitioners in the program
- Effort to control the dual epidemics of TB and HIV
- Extensive laboratory expansion plan ‘in collaboration with the private sector, a largely untapped resource in laboratory capacity development’
Management of MDR-TB in India - Issues

- Qualified MDR/XDR-TB treatment (human resources, facilities):
  - Limited human resource capacity to carry out the pre-implementation training and assessments

- Financing:
  - Limited funding
  - Issues with scaling up due to the high costs of second-line drugs
Management of MDR-TB in India - Issues

- Laboratory capacity for diagnosis and follow-up of MDR-TB patients and quality assurance:
  - Limited at present though expansion taking place
  - Limited availability of second-line drugs and DST
  - Need for high-throughput diagnostics and
  - Specimen transportation infrastructure within general health system lacking
Management of MDR-TB in India - Issues

ª MDR-TB program management capacity:

- No MDR-TB surveillance/survey
- Second line drug stock outs
- No Infection control plan
Need for Action

- MDR and XDR-TB in India and across the world raises the possibility that the current TB epidemic of mostly drug susceptible TB will be replaced with a form of TB with severely restricted treatment options.

- Will put at risk the plans to progress towards a world where TB ceases to be a public health problem.
Way Forward

Programmatic Decisions

- Strengthen the basic TB control program further so as to reach out to the
  - as yet un-notified and missed cases
  - poor and highly vulnerable populations
  - address the social determinants of TB

- Strengthen the health surveillance systems
Way Forward

Programmatic Decisions

- Strengthen and rapidly expand the laboratory network
- Human resource and financial management
- Drug supply chain management
Way Forward

Policy Decisions

- Policy to ensure **equitable access** to all TB patients and protection of their interests and rights
- Strengthen the policy to ensure engaging of all relevant public and **private health-care providers** in managing tuberculosis according to national policies
- Strengthen the **primary health care** system to ensure early detection, effective treatment and support to patients
Way Forward

Policy Decisions

- Strengthen mechanisms to ensure that tuberculosis medicines are sold on prescription only and are prescribed/ dispensed by accredited public and private providers
- Develop policy for airborne infection-control
- Increase investment to promote research
"On the move against TB: Transforming the fight towards elimination"

Thank You