MDR-TB Control and Prevention In China

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The Epidemic of Multidrug-Resistant Tuberculosis: Global and Local Challenges and Solutions
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General Information of China

- Population: 1,314,480,000 (2006)
- Area: 9,600,000 Km²
- Administrative divisions: 31 Provinces and Xinjiang construction corps, 2 SAR (Hong Kong and Macao)
- GDP (Gross Domestic Product): 33,900 billion CNY (2009), about 5,000 billion USD
- GDP per capita: 16,084 CNY
Factsheet of non-resistant TB in China

- The national tuberculosis prevalence survey in 2000 revealed:
  - the prevalence of TB was 4.5 million;
  - the incidence was 1.5 million;
  - 130 thousand patient died of TB each year.
- TB information report and administration system in China reveals that China has more than 1.3 million new cases of tuberculosis every year.
- the world’s second largest tuberculosis burden.
Factsheet of MDR-TB in China

- National drug resistance surveillance in 2007-2008 revealed:
  - MDR-TB proportion among all TB cases is 8.32%, and XDR-TB proportion among all TB cases is 0.68%.
  - The estimated incidence of MDR-TB is 120,000, the estimated incidence of Smear Sputum positive (SS+) MDR-TB is 80,000,
- Also been the second large number of MDR-TB patients in 27 MDR-TB HBC
MDR-TB compared to non-resistant TB

- Need longer treatment period to cure a patient (6-8 months compare to 18-24 months)
- Technology is more complex (at least 4 SLD drugs)
- Since need second line anti-TB drug, so much more serious adverse drug reaction for TB patient.
- More expenditure (about 100 times, or even more)
Big Success for Regular TB Control and Prevention In China

- DOTS coverage rate by county: 100%
- Case Detection Rate for new TB cases: 80%
- Cure rate for new TB cases: more than 90%
- China achieved the 2005 global targets for TB control
- 3.13 million TB patients has been cured (smear positive and negative) from 2001 to 2007.
TO CONFRONT THE MDR-TB SITUATION IN CHINA, WHAT WE SHOULD DO IN THE FUTURE?

TO DO A GOOD PREPARATION TO CONFRONT THE SITUATION? OR NOTHING TO DO? CERTAINLY, WE SELECT THE FORMER. TO DO A GOOD PREPARATION.
One hand: “To turning off the tap” - prevention of MDR-TB and XDR-TB

To enhance the QUALITY of basic DOTS by:
• To make a strong government commitment;
• To improve the laboratory network;
• To find the TB patients in vulnerable group, and give them more care.
One hand: “To turning off the tap" - prevention of MDR-TB and XDR-TB (Continue)

- To improve the recording & reporting system for TB
- To improve the quality of drugs (including first line and second line) and to implement SOP in drug supply and management system;
- To stress the cooperation between Public Health institutes (CDCs) and Hospitals.
The other hand: To launch pilot projects “programmatic treatment and management for M/XDR-TB patients” (PMDRT)

- To formulate National Framework and working plan for PMDRT, to do pilot for PMDRT, and to increase the number of pilot sites gradually, to implement drug resistance surveillance.
- To improve lab of all levels so that they can meet the standard for MDR-TB diagnostic test, such as TB culture and DST.
TB Lab Network in the Future in China

- National Level: Research, Gene (Molecular), DST, Culture, Microscope. / Biosafety: P3, P2
- Provincial Level: Research, DST, Culture, Microscope. / Biosafety: P2
- Prefecture level: DST, Culture, Microscope. / Biosafety: P2
- County level: Culture, Microscope.
Treatment and management for M/XDR-TB patients

- Technical support

Preparation for Technical support

- To establish a Guideline for programme management of DR-TB;

- To establish a Manual for SLD management;

- To establish a Guideline for infection control of tuberculosis;

- To establish a Guideline for ADR of chemotherapy of DR-TB;

- To establish a Manual of Culture, DST
Treatment and management for M/XDR-TB patients

-Research

Survey of policies against M/XDR had been launched by MoH:

● To know stakeholders’ attitude to those policies, we conducted a field survey in Wuhan and Shenzhen city.

● Using a mathematic model, to analyze cost-effectiveness of PMDRT for future 10 more years.

● Strong evidence will be provided for policy maker of PMDRT.
Treatment and management for M/XDR-TB patients

- Drug Resistance Surveillance


- 70 counties selected as survey sites.
- Enrollment began at Apr 1 2007, 4617 ss+ enrolled, including 3518 new patients and 1099 retreatment patients.
- Epidemiology of M/XDR-TB has been updated as mentioned before.
Treatment and management for M/XDR-TB patients
- Drug Resistance Surveillance

Provincial DRS
- 13 provinces conducted DRS supported by WHO,
- 6 provinces launched DRS supported by GFATM Round 5,
- 1 province conducted DRS financed by local government.

Up till now 20(31) provinces conducted DRS
Treatment and management for M/XDR-TB patients

- Diagnosis

- To accelerate implementation of rapid diagnosis method.

- To assess rapid diagnosis method for MDR-TB by implementing Important National Science & Technology Specific Projects.
Treatment and management for M/XDR-TB patients

-Cooperation

To determine model of cooperation between hospitals and TB dispensaries

- Responsibility of Hospital: Diagnosis, Treatment, Support Treatment for Side-effect, for MDR-TB patients.

- Responsibility of PHC(CDC): Management, Supervision, Follow up, Detective, Drug management etc.
Global fund project in China

- Number of Covered Provinces: 16
- Number of Covered Prefecture Level: 81
- Number of Treated MDR-TB patients:
- Total budget: 537 million CNY, around 78.6 million US dollars.
- Period:
  - Round 5: 2006 Oct- 2011 Sep;
  - Round 7: 2008 Oct- 2013 Sep;
China Global Fund project

GF Rd5

GF Rd5

Provinces to be covered by SSF-GF

Non-GF provinces
Bill & Melinda Gates foundation project in China

- BMGF mainly focus on new models, new tools and new techniques to prevent and control M/XDR-TB.
- China-BMGF project has launched on April 1, 2009.
- Sub-project 1d set it target to development of MDR/XDR-TB prevention and control models involving hospitals and public health system.
- The sub-project will cover 4 prefecture in 4 provinces in phase I, and will expand to 20 in 6 provinces until phase II.
Bill & Melinda Gates foundation project in China

Sub-project activities covered:

- Determine the model and mechanism for collaboration between hospital and CDC systems
- To develop the technical policies, guidelines, and operational procedures of this collaborative program
- Determination of the financing and incentives needed to implement this collaborative program
- Provision of an uninterrupted supply of quality 2\textsuperscript{nd}-line TB drugs
- Implementation of collaborative model
- Evaluation of model program
- Development of human resource capacity to implement and scale-up collaborative model
Lessons Learned from:

- A good model for MDR-TB control and prevention;
- A standardized regimen for MDR-TB treatment;
- Management of Second line drugs for TB;
- Laboratory methods for detective MDR-TB;
- Training human resources for MDR-TB treatment and management;
- Strong Government committee to ensure the MDR-TB programme.
Flow Chart of Medical Services for TB Patients in China-Gates Foundation TB Project
By working in fields above, both successful and unsuccessful experiences were recorded as the basis of formulating an appropriate action plan, those experiences are:

- To establish policies to regulate MDR-TB management and the use of SLDs.

- Combining MDR-TB control with medical reform, so that we could use the resources of Township Health Insurance, New Rural Cooperative Medicare Scheme, Central government financing, International cooperation project to build a new financing mechanism.
• Setup of MDR-TB treatment and management sites by prefecture
• Gradual and capacity-based expansion
• TB dispensary and other health services should cooperate more tightly
• According to resource, to design appropriate strategy of case finding. High risk population has the priority, then all SS+ patient will receive screening test for MDR-TB
• To reduce transmission of MDR-TB and shorten diagnostic delay by using molecular biological method to screen MDR-TB immediately
• To increase the number of TB staff for all levels and to enhance human resource construction by training.
What is next step?
—National Action Plan on PMDRT
National Action Plan for MDR-TB Control

Geography coverage

- 2007-2009  PMDRT Pilot phase
- 2010-2012  Preliminary Scale-up
- 2013-2019  Rapid scale-up
- 2020-       Full coverage
## National Action Plan for MDR-TB Control

### Technical policies for PMDRT

<table>
<thead>
<tr>
<th>Phase</th>
<th>Screening target population</th>
<th>Diagnostic method</th>
<th>Type of drugs performing DST</th>
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<tbody>
<tr>
<td>2007-2009</td>
<td>high risk groups of MDR-TB</td>
<td>Traditional DST</td>
<td>FLD</td>
</tr>
<tr>
<td>2010-2012</td>
<td>high risk groups of MDR-TB</td>
<td>Hain test *</td>
<td>FLD  SLD</td>
</tr>
<tr>
<td>2013-2019</td>
<td>all smear positive TB cases</td>
<td>Hain test #</td>
<td>FLD  SLD</td>
</tr>
<tr>
<td>2020-</td>
<td>all smear positive TB cases</td>
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Notes:  * Pilot and explore  # Nationwide implement
National Action Plan for MDR-TB Control

- Supporting mechanism preparation
  - Regulation and legislation
  - MDR-TB expert committee at central level
  - High quality and continuous supply of SLD anti-TB drugs
  - To explore cooperation and funding raising mechanism
National Action Plan for MDR-TB Control

• Action taken
  ➢ Single stream of funding GF project has already submitted.
  ➢ 87 prefectures in 29 provinces excluding 3 municipal cities will be covered.

• Action will be taken soon
  ➢ Expert review and demonstration
  ➢ Issued by the State Council
  ➢ Integration of “Action Plan for MDR-TB control” and NTP implementation plan for next ten years
Conclusion

- China has second largest MDR-TB burden of the world.
- Through GFATM and BMGF pilot projects, China has cumulated experience and human resources on MDR-TB control.
- Action Plan for long-term expansion has been designed.
Thanks for your attention!