National Tuberculosis Control Program (NTP) Bangladesh: Where are we?

Prof. Quazi Tarikul Islam  
FCPS, FACP, FRCP(Glasg), FRCP(Edin)  
Professor of Medicine  
Dhaka Medical College & Hospital
যক্ষ্মা নিয়ন্ত্রণে কোটি কোটি টাকা ব্যয়, অথচ সাফল্যের দেখা নেই
Introduction

- Tuberculosis is a major public health problem in Bangladesh.

- Daily, about 880 new TB cases and 178 TB deaths occur in the country.

- Globally, two billion people are infected with mycobacterium tuberculosis.

- More than nine million people develop active TB every year and about two million die.
In 1993 the World Health Organization declared TB as a global emergency.

In 1993 a standard strategy for control of the disease known as “DOTS” or Directly observed treatment is recommended.

TB Burden (2007 New estimates)

- Population: 143 million
- Adult pop. infected with TB: 50%
- Incidence (all cases): 318,817/yr
- Incidence rate (all cases): 223 /100Kpop / yr
- Incidence (ss+): 142 967/yr
- Incidence rate (ss+): 100 /100Kpop / yr
- Prevalence (all cases): 553 283
- Prevalence rate (all cases): 387 / 100K pop
- Mortality: 64 335
- Mortality rate 45 / 100K pop / yr
- Rank among 22 HBC 6

(Ref. WHO & NTP)
TB Burden (2008 estimates)

- Population: 145 million
- Adult pop. infected with TB: 50%
- Incidence (all cases): 323,973/yr
- Incidence rate (all cases): 223 /100K pop / yr
- Incidence (ss+): 145,279/yr
- Incidence rate (ss+): 100 /100K pop / yr
- Prevalence (all cases): 562,230
- Prevalence rate (all cases): 387/100K pop
- Mortality: 65,376
- Mortality rate: 45 /100K pop / yr
- Rank among 22 HBC: 6

(Ref. WHO & NTP)
TB Control in Bangladesh: Before & After DOTS

- **Pre-DOTS Era**
  - Vertical program
  - Clinic/hospitals based
  - Individualized regimen

- **DOTS Era**
  - 1993: Introduced DOTS Strategy
  - 2006: Adopted the STOP TB Strategy
VISION:

To eliminate Tuberculosis as a public health problem from Bangladesh
Vision and Mission of NTP

MISSION:
NTP aims to strengthen the effort of TB Control through:

- Effective partnership
- Mobilizing resources
- Ensuring quality diagnostic & treatment services under defined DOTS strategy.

The service should be equally available to all people irrespective of age, sex, religion, ethnicity, social status and race.
The overall goal of TB control is to reduce

- **Morbidity**
- **Mortality and**
- **Transmission** of TB

until it is no longer a public health problem
Objectives of NTP

- To sustain the global targets of achieving at least 70% case detection and 85% treatment success among smear-positive TB cases under DOTS.

- Reach the interim target of having TB death and prevalence rates (compared to 1990) towards achieving a reduction of TB incidence as stated under the MDGs by 2015.
Activities of NTP

- Developing policies, strategies and guidelines for TB control.

- Planning and budgeting for TB control activities.

- Developing human resources for TB control including training.

- Promoting early detection of smear positive patient.
Activities of NTP (Cont.)

- Implementing quality assurance system for smear microscopy.

- Diagnosing smear negative, extra-pulmonary and childhood TB.

- Ensuring DOTS through community participation and involvement of government and nongovernmental health care providers.

- Ensuring uninterrupted supply of drugs, laboratory equipments and consumables and others logistics.
Activities of NTP (Cont.)

- Implementing standardized recording and reporting systems.

- Involving academic medical institutes and hospitals, private practitioners, special services like prisons, defense, industries and other corporate sectors in NTP.

- Strengthening cooperation and collaboration between the government of NGOs involved in control of tuberculosis.
Activities of NTP (Cont.)

- Conducting regular supervisions, monitoring and evaluation of NTP thus measuring impact of intervention.

- Ensuring program management of drug-resistant TB.

- Establishing linkage for management of TB-HIV co-infection.
Activities of NTP (Cont.)

- Maintaining liaison with development partners and establishing inter-sectoral and inter-ministerial collaboration

- Carrying out operational research related to TB control.
NTP Strategy

- NTP started DOTS Strategy in 1993 targeting (by 2005)
  - 85% treatment success (achieved - 2003)
  - 70% case detection rate (achieved - 2006)
  - 100% DOTS coverage (achieved - 2006)

- Now adopting STOP TB Strategy
  Aiming to build on and enhancing DOTS
  - To meet the TB related MDG
DOTS Strategy: 5 basic components

• **Government Commitment:**
  - To ensure necessary political and financial support.

• **Case Detection through sputum microscopy:**
  - Cost effective diagnosis
  - Focus on smear-positives
  - Passive case finding
  - Direct microscopy of sputum for AFB
DOTS Strategy: 5 basic components

- **Short-Course Chemotherapy:**
  - Short-course
  - Standardized
  - Multi-drug
  - Directly observed treatment (DOT)
  - *Cure is the best prevention*

- **Supply System:**
  - To ensure uninterrupted supply of drugs and lab reagents.

- **Recording and Reporting**
  - To follow the patient and monitor the progress of treatment by standard forms, cards and registers, cohort analysis
STOP TB Strategy

1. **Pursuing high-quality DOTS expansion and enhancement**

2. **Addressing TB/HIV, MDR-TB and other special challenges**

3. **Contribute to health system strengthening**
STOP TB Strategy

4. **Engage all health care providers**

5. **Empower people with TB, and communities**

6. **Enabling and promoting Research**
Progress in NTP

**TB CONTROL:**

Since the introduction of DOTS in Bangladesh, remarkable progress in TB control has been made in terms of:

- DOTS coverage
- detection of TB cases
- treatment success especially among new smear-positive cases.
Progress in NTP

**DOTS Coverage:**

- Bangladesh adopted the WHO recommended DOTS strategy and field implementation was piloted in November 1993 in four *upazilas*.

- An expansion plan was designed and coverage of all *upazilas* was achieved by June 1998.

- Expansion to include also the metropolitan cities took place subsequently and since 2003.

- 99% of the country’s population is considered to live in areas where DOTS services are available.
Progress in NTP

- **Case Detection**

- After the introduction of the DOTS strategy in 1993, the case-detection rate for new smear-positive cases increased gradually and reached 28% in 1998.

- Until 2001 only marginal progress was achieved in terms of further increasing the case-detection rate.

- This may possibly be explained by the health sector reforms with virtually disappearance of TB as a separate national program as well as uncertainties in funding.
From 2001 onwards, case detection accelerated to reach 46% in 2004 and further increased to 61% in 2005 and 71% in 2006, thereby reaching the global target.
Progress in NTP (Cont.)

- **Treatment outcomes:**

  All diagnosed smear-positive TB patients are automatically registered.

  The possible outcomes are:
  - Cured (only applicable to smear-positive cases),
  - Treatment completed,
  - Died,
  - Treatment failure,
  - Defaulted and
  - Transferred out.
Achievements of NTP

- **DOTS coverage**: 100%

  PROGRAM available throughout the country

- All Upazila Health Complexes,

- All Chest Disease Clinics & Hospitals,

- Urban Health Centers,

- Medical College Hospitals – Both Public and Private,

- Defense Hospitals

- Work Places: EPZ, BGMEA and other industries

- Prisons
Partners/Implementing agencies

Responsible Bodies: Public and Private Hospitals, Academic Institutes, NGOs, Corporate sectors, Defense, Other ministries and Professional Associations,
Responsibilities: Civil society and private sector involvement, HRD, ACS, reporting, monitoring and evaluation, research.

Central Level

NTP

Responsible Persons of NTP:
(1) Director- MBDC & Line Director-TB/Leprosy
(2) Deputy Director-MBDC,
(3) Assistant Director MBDC,
(4) Program Manager-TB,
(5) DPM-TB,
(6) Medical Officers

Responsibilities: Policy formulation, coordination with partners, technical HRD, ACS, quality assurance, procurement and supply of drug and logistics assurance, reporting, supervision, monitoring & evaluation and research.
**Divisional level**

**Responsible Persons:** (1) Divisional Director and (2) Deputy Director, Health

**Responsibilities:** Supervision and monitoring according to NTP guidelines, Coordination with NTP and partners.

**Responsible Bodies:** City Corporations, NGOs, Chest Hospitals, Academic Institutes, Corporate Health Services, Private Sectors, Prisons and Professional Associations.

**Responsibilities:** Implementing DOTS, management of referred cases, training, ACS, reporting, monitoring and evaluation.
District Level

**Responsible Persons:**
1. Civil Surgeon
2. Consultant - Chest Disease Clinic
3. MO & PO, TB-LEP.

**Responsibilities:** Supervision, monitoring and evaluation, quality assurance, training, technical guidance, coordination with NTP partners and implementing DOTS.

**Responsible Bodies:**
Academic Institutions, District Hospitals, Chest Disease Clinics, NGOs, Private Hospitals/clinics, Work Places and Professional Associations.

**Responsibilities:** DOTS Implementation, management of referred cases, supervision, monitoring, quality assurance, training, networking with private providers, ACS, reporting, indenting for drugs and logistics.
Upazila Level

**Responsible Person:** (1) UH&FPO, (2) MO (3) LTCA

**Responsibilities:** Implementation of DOTS, supervision, monitoring and evaluation, training, reporting, coordination with NTP partners.

**Responsible Bodies:** UHC, NGO partners, Graduate and non-graduate PPs, Pharmacists, Private Diagnostic Facilities, Work Places and Community Leaders

**Responsibilities:** Identification of suspects, sputum collection and examination, training, ACS, provision of DOT, absentee tracing, supervision, recording and reporting, and indenting for drugs and logistics.
Union/ward Level

Responsible Persons:
(1) HI (2) AHI (3) HA (4) MA
Responsibilities: ACS, Symptomatic identification and referral, provision and supervision of DOT, absentee tracing.

Village Level

Responsible Bodies: Health sub-centers, NGO partners.
Responsibilities: Identification of suspects and referral, sputum collection and transport to laboratory, BCC, supervision and provision of DOT, absentee tracing.

CHC Management Group

Responsible Persons: Community Health Volunteers (e.g.: Shastho Shebikas, Village Doctors, Cured patients, Village Leaders Community Health Care Provider etc.)
Responsibilities: Symptomatic identification and referral, provision of DOT, ACS.
Remarkable progress in Case detection and Treatment during the last few years.
Case Notification by type of patients, 2008, National

(Notified all cases=151,062)

CDR: 73%

NEP, 12.15%

NSN, 14.69%

Relapse, 2.74%

NSP, 70.42%
Case finding by type of patients, 2009
(Total=160 735) National

NEP 13.67%
NSN 15.76%
Relapse 2.56
NSP 68.01%

CDR: 74%
Case Notification Rate/100k pop

![Bar chart showing the case notification rate from 2001 to 2009. The chart compares CNR all forms and CNR NSP, with the y-axis representing the rate on a scale from 0 to 120, and the x-axis representing the years from 2001 to 2009.]
Notification of NSP PTB by age and sex, 2008

<table>
<thead>
<tr>
<th>Age Group</th>
<th>M</th>
<th>F</th>
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</thead>
<tbody>
<tr>
<td>0-14</td>
<td>422</td>
<td>761</td>
</tr>
<tr>
<td>15-24</td>
<td>10615</td>
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<tr>
<td>25-34</td>
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<td>12759</td>
<td>6165</td>
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<tr>
<td>45-54</td>
<td>13354</td>
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<tr>
<td>55-64</td>
<td>10772</td>
<td>3173</td>
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<tr>
<td>65+</td>
<td>10386</td>
<td>1947</td>
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Number of Cases
Case Notification, NSP by age and sex, 2009

<table>
<thead>
<tr>
<th>Age Group</th>
<th>M</th>
<th>F</th>
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<tbody>
<tr>
<td>0-14</td>
<td>409</td>
<td>718</td>
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<tr>
<td>15-24</td>
<td>10920</td>
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<td>55-64</td>
<td>11521</td>
<td>3385</td>
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<td>65+</td>
<td>11168</td>
<td>2313</td>
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## Childhood TB Detection: a challenge

<table>
<thead>
<tr>
<th>Year</th>
<th>Total (NSP, NEN &amp; EP)</th>
<th>0-14 yrs</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>#</td>
<td>%</td>
</tr>
<tr>
<td>2005</td>
<td>87,673</td>
<td>1,625</td>
<td>1.85</td>
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<tr>
<td>2006</td>
<td>141,020</td>
<td>4,184</td>
<td>2.97</td>
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<tr>
<td>2007</td>
<td>143,594</td>
<td>4,044</td>
<td>2.82</td>
</tr>
<tr>
<td>2008</td>
<td>146,665</td>
<td>4,052</td>
<td>2.76</td>
</tr>
<tr>
<td>2009</td>
<td>156,454</td>
<td>4,581</td>
<td>2.92</td>
</tr>
</tbody>
</table>

### Proportion of Childhood TB

- **2005**: 1.85
- **2007**: 2.97
- **2009**: 2.92

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*Note: The graph shows the proportion of childhood TB from 2005 to 2009.*
Unfavorable Treatment Outcomes (%) Cohort 2000-2008

Target <15%

- not evaluated
- trns out
- defaulted
- failed
- died
Achievements in terms of Impact

Progressing towards reaching Targets of MDG

Ref: Global TB Control Report 2009
Case Reporting: Rural Vs Urban

<table>
<thead>
<tr>
<th>year</th>
<th>TB Cases</th>
<th>UZ</th>
<th>Metro</th>
<th>CDC</th>
<th>Total</th>
<th>Urban (Metro + CDC)</th>
<th>Urban %</th>
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</thead>
<tbody>
<tr>
<td>2005</td>
<td>all</td>
<td>99813</td>
<td>15583</td>
<td>6902</td>
<td>122298</td>
<td>22485</td>
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<tr>
<td></td>
<td>NSP</td>
<td>74385</td>
<td>7525</td>
<td>3895</td>
<td>85805</td>
<td>11420</td>
<td>13.3</td>
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<tr>
<td>2006</td>
<td>all</td>
<td>118773</td>
<td>19442</td>
<td>6623</td>
<td>144838</td>
<td>26065</td>
<td>18.0</td>
</tr>
<tr>
<td></td>
<td>NSP</td>
<td>89704</td>
<td>8255</td>
<td>2806</td>
<td>100765</td>
<td>11061</td>
<td>11.0</td>
</tr>
<tr>
<td>2007</td>
<td>all</td>
<td>120836</td>
<td>20926</td>
<td>5686</td>
<td>147448</td>
<td>26612</td>
<td>18.0</td>
</tr>
<tr>
<td></td>
<td>NSP</td>
<td>91606</td>
<td>10264</td>
<td>2437</td>
<td>104307</td>
<td>12701</td>
<td>12.2</td>
</tr>
<tr>
<td>2008</td>
<td>all</td>
<td>124306</td>
<td>21600</td>
<td>5156</td>
<td>151062</td>
<td>26756</td>
<td>17.7</td>
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<tr>
<td></td>
<td>NSP</td>
<td>93659</td>
<td>10289</td>
<td>2425</td>
<td>106373</td>
<td>12714</td>
<td>12.0</td>
</tr>
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</table>
NSP Case Proportion: Urban Vs Rural

![Bar chart showing the NSP case proportion for urban vs rural areas from 2005 to 2008. The chart compares Country, UZ, Metro, CDC, and Merto +CDC categories.]
Treatment success, 2007 cohort

<table>
<thead>
<tr>
<th>Region</th>
<th>TSR%</th>
</tr>
</thead>
<tbody>
<tr>
<td>uz</td>
<td>93</td>
</tr>
<tr>
<td>metro</td>
<td>83</td>
</tr>
<tr>
<td>cdc</td>
<td>75</td>
</tr>
</tbody>
</table>
Unfav. Treat. Results: 2007 cohort
Community Involvement

- DOTS committee involving community leaders: meet regularly
- Identification and referral of TB suspects, DOT, defaulter tracing and counseling
- Female community health volunteers (SS)
- Village doctors
Community Involvement

- TB clubs consisting of cured TB patients
- Involvement of Civil Society (NATAB)
- National strategic plan for ACSM developed
- Folk song, street drama, TV serial, Radio spot developed
- Involvement of scouts and girls guides in awareness raising
Community Participation in DOTS
ACSM Materials and Methods

- Poster
- Leaflet
- Pamphlets
- Flash Card
- Billboard
- Flipchart
- Brochure
- Booklet

- TV Drama
- TV Talk Show
- Cinema Slides
- Street Drama
- Concert
- Folk Song
- Theatre
TB MIS

In order to follow up the TB patients and monitor the program performance, NTP has

- good recording and reporting system

- Computerized data management system at central level

- Established regular analysis of data and preparation of reports

- System of feedback and dissemination
Data flow

Level

Central

District

Metro

Responsibility

PM - NTP Data management unit

CS

UHFPO

Union & below
M&E

- Routine R/R
- QMM at District & national level
- AMM at Division level
- Monthly coordinating meeting with PR
- Field Supervision
M&E

- CCM meeting
- Supervision by CCM
- Meeting of TB technical sub committee
- Meeting of LTCC
- Meeting of DOTS plus committee
- Meeting DOTS Committee at community level
TB HIV

- TV/HIV Steering committee: Functional collaboration between NASP and NTP.


- Training and orientation of HIV staff on TB: Ongoing.

- Established VCT center in NIDCH linkage between DOTS & VCT centers.
Diagnosis & Management of MDR- TB

- NTRL at NIDCH, Dhaka
  - 435 patents enrolled; 206 discharged for ambulatory management (up to 30 Sept 2010)

- RTRL at Rajshahi chest disease hospital
  - Research project with 9 months regimen
  - 147 enrolled; Success rate : 87%
Current activities

- DOTS Plus pilot project ongoing for 700 MDR-TB patients at NIDCH.

- RTRL at Chittagong- start soon and at Khulna will also be functional by 2011 (Instruments procured and needs to be installed).

- Development and submission of GFATM Round 10 proposal.
Current activities

- TB Care proposal (USAID) is under development.
- Development of child TB guideline.
- Development of TB management course.
Current activities

- Setting up model sites for TB infection control.
- Development of E-TB manager recording and reporting system (case based).
- Initiation of Drug Resistance Survey.
Current activities

- Operational Research:
  - Validation study for diagnosis of smear positive TB - ongoing
  - Prevalence of TB among Diabetics - yet to be approved
  - Hospital acquired infection - yet to be approved.

- NTP review - 5th Joint Monitoring Mission ongoing.
Main Activities Planned for 2010-15

- A further increase in case detection by about 1% per year, while maintaining treatment success at or above 90%.

- 15 additional laboratories by NGO partners within the next 5 years. Additional laboratory staff will be recruited by NGOs.

- 10 more EQA centers.
Activities Planned for 2010-15

• 30 more DOT centers in private sectors, workplaces, prisons, private hospitals, etc

• X-ray facilities at the CDCs & UHCs will be functionalized & logistics will be provided.

• Collaboration with pediatricians will be intensified and linkages with graduate private practitioners.

• More emphasis on detection management of EP, Smear-negative and Child TB
Activities Planned for 2010-15

- A nation-wide representative HIV prevalence survey among TB patients in 2011 and 2015;

- Regional/Divisional TB Reference Laboratory in Chittagong & Khulna (initiated), Sylhet & Barisal Division

- Nationwide drug resistance survey will be repeated in 2015
Challenges

• Sustain already achieved Success and further move ahead

• Maintain & Improve Quality

• Smear negative, EP and Child TB

• Scaling up of PMDT of MDR-TB & TB/HIV
Challenges

• Sustain & Scale up PPM

• Strengthening ACSM

• Health system strengthening including MIS
Organizations working together

1. BRAC

2. Damien Foundation

3. Gonoshasthnya Kendra
Organizations working together

4. HEED Bangladesh

5. ICDDR,B

6. Japan International Cooperation Agency
Organizations working together

7. LAMB Hospital

8. LEPRA Bangladesh

9. NATAB
Organizations working together

10. PIME Sisters

11. Nuffield Centre for International Health and Development, University of Leeds, UK.

12. The Leprosy Mission Bangladesh
Organizations working together

13. Rangpur-Dinajpur Rural Service

14. Salvation Army

15. Smiling Sun Franchise Program
Organizations working together

16. NGOs providing TB services
Take Home Messages

- Remarkable Success !??
- Key factors for success
  - Political commitment
  - Partnership
  - Continuous Support
Take Home Messages

• Still there are Challenges
  • Sustaining the hard earned gain and maintaining the quality
  • Maintaining Partnership
  • Diagnosis of Smear Neg./EP/Child TB
  • TB/HIV co-infection
  • Drug resistant TB
Acknowledgement

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