Revised National Tuberculosis Control Programme (RNTCP)

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Burden of TB

Global scenario*:

Incidence: 9.6 million (58% SEAR and Western Pacific)

Deaths: 1.5 million deaths

HIV: 12% of new TB patients (1.2 million out of 9.6 m)

MDR-TB: 3.3% of new TB cases & 20% of Re-treated

XDR-TB: 9.7% of people with MDR-TB

* WHO Global TB Report-2015
India*:

Incidence : 2.2 million

Deaths : 2,51,000

MDR-TB : 2.2% of new TB cases & 15% of Re-treated cases

HIV : 4% of TB patients

* WHO Global TB Report-2015
TB control efforts in India

• 1962 : National TB Programme (NTP) launched
• 1992 : NTP review
• 1993 : RNTCP with “DOTS Strategy”
• 1998 : Covered only 2% total population of India
• 2000 : 135 million population covered
• 2003 : 741 million population covered
• 2006 : 100% population covered

Adopted STOP TB strategy
Objectives of RNTCP

• Augmentation of case finding activities through quality sputum microscopy to detect at least 70% of estimated cases

• Achievement of atleast 85% cure rate of infectious cases of tuberculosis through DOTS
Diagnosis of Pulmonary TB

Cough for 2 weeks or more

2 Sputum smears

1 or 2 Positives
1 or 2 Positives

Sputum Positive PTB
Anti TB Treatment

Sputum negative PTB
Anti TB Treatment

2 Negative

X-ray chest

Suggestive of TB

Negative for TB

2 Negatives

Antibiotics 10-14 days

Cough persists

Repeat 2 Sputum Examination

Non TB
Designated microscopy centre

- Peripheral laboratory under RNTCP lab network
- Serves a population of 1 lakh
- 50,000 in tribal & hilly area
RNTCP endorsed TB diagnostics

1. Smear microscopy for AFB
   a. Sputum smear stained with Z-N staining. or
   b. Florescence stains and examined under direct or indirect microscopy with or without LED.

2. Culture
   a. Solid (LJ Media) or
   b. Liquid media (middle brook) using manual semi automatic or automatic machines e.g., Bactec, MGIT
3. Rapid diagnostic molecular test

a. Conventional PCR based line probe assay for MTB COMPLEX; or

b. Real-time PCR based Nucleic Acid Amplification test NAAT for MTB complex..e.g.,GeneXpert
Structure of RNTCP at State level

State TB Cell

- STO, Deputy STO
- MO, Accountant,
- IEC Officer, SA, DEO

District TB Centre

- DTO, MO-DTC, LT,
- DEO, Driver

Tuberculosis Unit

- MO-TC
- STS, STLS

Microscopy Centre

- MO, LT

DOT Centre

- DOT Provider – MPW,
- NGO, Comm Vol

Nodal point for TB control

One/ 5 lakh (2.5 lakh in hilly/difficult/tribal area)

One/ lakh (0.5 lakh in hilly/difficult/tribal area)
Directly Observed Treatment Short course Chemotherapy (DOTS):

DOTS provider:
- Volunteer from the community where patient resides
- Not a member of the patients family

Short course:
- Reduction of duration of treatment to 6 months with the inclusion of Rifampicin & Pyrazinamide
Phases in Chemotherapy

1. Intensive phase:
   - 4-5 drugs
   - To achieve rapid killing of actively multiplying bacillary population
   - Optimal duration: 2 months
   - All doses to be taken in the presence of DOTS agent

2. Continuation phase:
   - 2 – 3 drugs
   - Eliminate persisters
   - Optimum duration: 4 months
## RNTCP Treatment

<table>
<thead>
<tr>
<th>Category</th>
<th>Treatment Details</th>
<th>Regimen</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>New Cat I</strong></td>
<td>New smear-positive; New sputum smear Negative New Extra pulmonary New others</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 $H_3R_3Z_3E_3$ / 4 $H_3R_3$</td>
</tr>
<tr>
<td><strong>Previously treated (Cat II)</strong></td>
<td>Smear Positive relapse Smear positive failure Smear positive treatment after default Others</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 $H_3R_3Z_3E_3S_3$ / 1 $H_3R_3Z_3E_3$ / 5 $H_3R_3E_3$</td>
</tr>
</tbody>
</table>
Components of DOTS strategy

1. Political commitment

2. Diagnosis by quality assured sputum smear microscopy

3. Adequate supply of drugs

4. Directly observed treatment

5. Systematic monitoring & Accountability
• **Multi drug resistance:** Resistance to Rifampicin & Isoniazide

• **Extensive drug resistance:**
  - Rifampicin & Isoniazide
  - Any Fluoroquinolone
  - at least one of three 2nd line injectable drugs (Capreomycin, Kanamycin, Amikacin)
DOTS - PLUS

**MDR-TB suspects:**
- Category-I failure patients
- Category-II patient remaining positive at 4th month
- Contacts of an established /confirmed MDR-TB case

↓

**Quality assured lab (IRL) for culture & drug susceptibility testing**

↓

**DOTS-PLUS site for treatment** (atleast 1 in each state)
- Medical colleges
- Super speciality hospitals
Regimen for MDR-TB:

6(9) Km, Lvx, Eto, Cs, Z, E
18 Lvx, Eto, Cs, E

Regimen for XDR-TB:

6(12) Cm, PAS, Mfx, high dose H, Cfz, Lzd, Amx/Clv
18 PAS, Mfx, high dose H, Cfz, Lzd, Amx/Clv
Paediatric TB

• Accounts 6-8 % of all TB cases.

• Separate algorithms for diagnosis of PTB and EPTB has been issued along with IAP

• Pediatric Patient Wise Boxes – First country in the world

• Patients grouped in weight bands(6-8, 9-12, 13-16, 17-20, 21-24, 25-30 kg)
TB-HIV coordination

- **Intensified TB case finding** at all HIV testing centres

- **HIV testing of TB patients** through provider initiated testing and counselling

- **Intensified case finding activities** specifically among HIV infected pregnant women & children living with HIV

- Policy decision taken by NACP & RNTCP to adopt **isoniazide prophylaxis therapy** as a strategy for prevention of TB among PLHIV
New objectives in the 12th five yr plan

• Early detection & treatment of **atleast 90%** of estimated all types of TB cases in the community including drug resistant and HIV associated TB

• Successful treatment of **atleast 90%** of new TB cases & atleast 85% of previously treated TB patients

• **Reduction in default rate** of new TB cases to < 5% & re-treatment cases to < 10%

• **Offer HIV counselling & testing** for all TB patients & linking HIV infected TB patients to HIV care & support
Achievements of RNTCP

• Treatment success rate improved from 25% to 88%

• Death rates brought down from 29% to 4%

• 662 DTCs, 2698 TB units, 13,209 DMCs are functional

• 2,708 NGOs, 13,311 private practitioners, 319 medical colleges are involved in programme

• More than 6 lacs public health care providers have been trained under the programme
New initiatives

• RNTCP is currently using **CB NAAT** for the diagnosis of TB & MDR-TB in high risk population like HIV positive & paediatric group

• **TB notification** to local authorities

• **Ban on TB serology**

• **Nikshay**: TB surveillance using case based web based IT system
Nikshay—Case Based Web Based recording and reporting system

In India today, two deaths occur every three minutes from tuberculosis (TB). But these deaths can be prevented. With proper care and treatment, TB patients can be cured and the battle against TB can be won.

Tuberculosis (TB) is an infectious disease caused by a Bacterium, Mycobacterium tuberculosis. It is spread through the air by a person suffering from TB. A single patient can infect 10 or more people in a year.

India has a long and distinguished tradition of research in TB. Studies from the Tuberculosis Research Centre in Chennai and the National Tuberculosis Institute in Bangalore provided key knowledge to improve treatment of TB patients all around the world.

Modern anti-TB treatment can cure virtually all patients. It is, however, very important that treatment be taken for the prescribed duration, which in every case is a minimum of 6 months. Because treatment is of such a long duration and patients feel better after just 1-2 months, and because many TB patients face other problems such as poverty and unemployment, treatment is often interrupted.
**Tuberculosis surveillance using Nikshay: (Case Based online software)**

<table>
<thead>
<tr>
<th>Category</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>TB Patients Registered under RNTCP</td>
<td>32,37,354</td>
</tr>
<tr>
<td>Peripheral Health Institutes (PHI) registered</td>
<td>44,001</td>
</tr>
<tr>
<td>Tuberculosis Officials details</td>
<td>2791</td>
</tr>
<tr>
<td>District TB Officers details</td>
<td>696</td>
</tr>
<tr>
<td>State TB Officers details</td>
<td>35</td>
</tr>
<tr>
<td>Contractual Employees details</td>
<td>7734</td>
</tr>
<tr>
<td>Non-RNTCP Health Establishments registered</td>
<td>78,908</td>
</tr>
<tr>
<td>Non-RNTCP Patients registered</td>
<td>1,28,844</td>
</tr>
<tr>
<td>Culture &amp; Drug Resistant Labs Patients registered</td>
<td>68,024</td>
</tr>
<tr>
<td>Drug Resistant Tuberculosis Patients registered</td>
<td>6160</td>
</tr>
</tbody>
</table>

Nikshay received - National E-Governance Award (Gold) from Ministry of IT, Ministry of Administrative reforms, GOI

During 17th National E-Governance Conference
Financial assistance

• World bank & The Department for International Development (DFID) via WHO

• Global TB drug facility (GDF)

• Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM)

• United States Agency for International Development (USAID)

• DANIDA
THANK YOU