Role of Tuberculosis Hospitals/Sanatoria in TB control in India  
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Background
- Classic studies of TRC, Chennai showed that TB hospitals do not
  - improve outcome of patient
  - reduce TB in patient’s contacts
- 47,000 hospital beds as of 1992
- Current Indian population = 1 billion
- Approximately 20 lakh new cases/year

TB Hospitals vs Sanatoria
- No clear demarcation
- Some sanatoria may provide limited range of curative services
- Most are in Government sector
- Many are NGO-run, often with predominantly governmental support

TB Hospitals/Sanatoria Recent Survey
- Questions about diagnosis, treatment, follow-up, and resources used
- Sent to 104 larger TB hospitals (≥100 beds)
- 94 responses received (33% of total TB beds in the country)

TB Hospitals/Sanatoria
94 hospitals, cumulative beds: 21,960 (15,773 for TB)
- Number of doctors involved: 841 (2500 in country)
- Number of staff involved: 9702 (about 30,000 in country)
- Average Length of Stay: 45 days

TB Hospitals/Sanatoria Recent Survey: Diagnosis
- Ratio of smear+ to smear-negative
  - RNTCP 1 : 0.6 (range 0.5-1.4)
  - in the survey 1 : 2.7

Diagnostic Quantity
- Patients evaluated 8.7 lakhs
- Patients diagnosed 3.3 lakhs
- Pulmonary TB 3 lakhs
- Patients SS+ 81,723
- Patients admitted 1.3 lakhs (38.2%)
- SSPP admitted 45,950 (56%)

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TB Hospitals/Sanatoria

- Treatment regimens: 62% of the hospitals used inappropriate regimens with rifampicin in the continuation phase
- Follow up actions:
  - Nil by 45% of the hospitals
- No or little systematic information on patient outcome/cohort analysis

Practices

- 36% hospitals admitted all SS+ patients
- 67.5% would wait for smear conversion before discharging patient
- 2 hospitals keep the patient till he is cured

TB Hospitals/Sanatoria

- Annual expenditure of 71 institutions
  - drugs: 13 crore
  - other: 88 crore
  - Cumulative annual expenditure: 101.2 crore
  - **300 crore for country**
- Approximate cost per patient admitted:
  Rs 8,000/-

Recent Survey: Observations

- Large numbers of patients diagnosed
- Quality of diagnosis poor in many hospitals
- Non-standard treatment regimens
- Lack of systematic follow-up
- Very low rates of treatment completion
- Poor coordination with outpatient system

Advantages

- Trusted by the community
- Diagnose large numbers of patients
- Medically necessary for proportion of patients
- Can help patients and programmes to implement DOT, if policies are followed
- Useful as specialized centres for complicated cases

Disadvantages

- Costly (budget is 3 times national TB control budget)
- Social isolation of patients
- Risk of spread of tuberculosis among HIV-infected persons
- Patients lost to follow up after discharge
- Tendency to unnecessary admissions
**TB Hospitals/Sanatoria: Indications for Admission**

- Medical emergencies (massive hemoptysis, pneumothorax, large bilateral pleural effusion, etc.)
- Destitute patients
- Difficult geographic areas/climates
- Serious non-TB conditions requiring hospitalization
- Treatment of severe adverse drug reactions
- Specialized treatment of MDR TB

**Not all patients with positive AFB smears require admission to hospital!!**

**TB Hospitals/Sanatoria: Indications for Discharge**

Patients do not require to remain hospitalized until their AFB smears become negative!!

**TB Hospitals/Sanatoria: Diagnosis**

- 3 smears per patient on admission
- Good quality examination with policy as per RNTCP
- Trial of antibiotics (trimethoprim-sulfamethoxazole) in patients with negative AFB smears
- Records as per RNTCP including TB Laboratory Register

**TB Hospitals/Sanatoria: Treatment**

- Treatment regimens as per government policy in area of operation
- Except in RNTCP areas, no rifampicin in the continuation phase of treatment
- Every dose of medicine ingested should be directly observed by the hospital staff
**TB Hospitals/Sanatoria: Follow-up**

- Patients should be admitted for the minimum possible length of time.
- Patients who are not admitted should preferably not be given medicines, but should be diagnosed and referred back to peripheral facility for initiation of treatment.
- Admitted patients on discharge should receive the medical regimen used in their district of residence.
- Hospitals are responsible for monitoring the outcomes of every patient started on treatment.

**TB Hospitals/Sanatoria: Record keeping**

- Treatment cards of RNTCP should be used.
- Hospitals must keep a register of all patients started on treatment and their outcomes documented as per RNTCP definitions.
- Transfer forms should be given to the patient and also sent to the peripheral facility (TB Transfer Form per RNTCP).
- Peripheral facilities should inform hospitals of patient follow-up (TB Transfer Form).

**TB Hospitals/Sanatoria: Reducing risk of nosocomial spread of TB in HIV-infected persons**

- Admit only as medically essential and discharge promptly.
- If possible, maintain separate wards for:
  - 1. Patients with suspected tuberculosis.
  - 2. Patients on treatment for tuberculosis for the first time.
  - 3. Patients who are smear-positive and who have been treated before.
- Use only recommended regimens and ensure direct observation of treatment.
- Educate patients on the need to cover all coughs.
- Coordinate closely with outpatient care.

**TB Hospitals/Sanatoria: Appropriate roles**

- Difficult geographical area/climate.
- Case detection, then refer patient back to local provider for initiation of treatment.
- Treatment should generally not be started for patients living out of area.
- Systematic cohort analysis mandatory.

**TB Bed Requirement**

- Assumptions:
  - 200 cases per lakh per year require treatment.
  - At most 10% of cases require hospitalization.
  - Average length of stay 6 weeks.
- Then per million population about 25 beds required.
- May increase somewhat with HIV and MDR increase.
**TB beds in States**

- Maharashtra
- WB
- Tamil Nadu
- UP
- AP
- Kerala
- Karnataka
- Gujarat
- Rajasthan
- Bihar
- MP
- Delhi
- Punjab
- Orissa
- Assam
- HP
- J&K
- Haryana
- Goa
- Meghalaya
- Arunachal Pradesh

**Beds per million population**

- A&N
- Arunachal Pradesh
- Goa
- Sikkim
- Delhi
- Meghalaya
- HP
- Nagaland
- Mizoram
- Maharashtra
- WB
- Gujarat
- J&K
- Manipur
- Kerala
- Karnataka
- TN
- Punjab
- Madhya Pradesh
- Rajasthan
- A&N
- AP