REVISED NATIONAL
TUBERCULOSIS CONTROL
PROGRAMME

OPERATIONAL GUIDELINES FOR TUBERCULOSIS CONTROL

CENTRAL TB DIVISION
DIRECTORATE GENERAL OF
HEALTH SERVICES
NIRMAN BHAVAN
NEW DELHI, INDIA

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Objectives and Strategy 1

The National Programme aims to reduce the transmission of tuberculosis (TB) as well as mortality and morbidity from the disease, until TB is no longer a major public health problem.

The basic curative as well as preventive strategy is the treatment of TB patients until cure. The priority for treatment are newly diagnosed, sputum-positive pulmonary tuberculosis cases, as they are the main sources of infection and are more likely to die unless effectively treated. Directly Observed Treatment with Short-Course Chemotherapy (DOTS), with at least four drugs in the intensive phase and two drugs in the continuation phase, is the treatment of choice. Directly Observed Therapy, in which a trained peripheral health worker such as a multipurpose worker or community volunteer watches as patients swallow all medicines, is fundamental to ensuring cure. DOTS should be ensured for every dose in the intensive phase of treatment and at least one dose per week in the continuation phase.

Treatment of TB including drugs and clinical and bacteriological facilities are provided free of charge by public health services. The outcome of treatment is evaluated by analysis of the results of quarterly cohorts of all registered cases.

Early detection of disease should be done in all symptomatic patients reporting to the general health services with cough of a duration of 3 weeks or more by examination of 3 sputum smears for AFB. Contacts of smear-positive cases should also be evaluated.

The diagnosis and treatment of TB are functions of the general health services and hence a part and parcel of Primary Health Care. Specialized units such as the District Tuberculosis Centre (DTC) act as referral centres (particularly for differential diagnosis of smear-negative cases and management of cases with drug reactions), and also provide training, quality control and supervision.

BCG vaccination has a complementary role in TB control, with particular impact in the prevention of severe forms of TB in children. However, BCG vaccination has no effect on the transmission of the disease. It is an activity of the Expanded Programme of Immunization. The most effective step in the prevention of TB is to cure infectious cases in order to break the chain of transmission.

Structure 2

2.1 The National Tuberculosis Programme is responsible for the technical and operational norms and procedures; planning; establishing a network for sputum microscopy; monitoring; evaluation; supervision; ensuring regular supply of drugs and adequate training of personnel; quality assurance; obtaining and analysing data on surveillance and Programme implementation; obtaining sufficient resources for the Programme; and coordinating activities of different institutions involved in the National Tuberculosis Programme.

2.2 The National Tuberculosis Programme has the following levels:

- At the National level, there is a team at the Ministry of Health, Directorate General Health Services especially for the management of the TB Programme. The TB Division is headed by a Deputy Director General (TB) who is the National Programme Director and is assisted by collaborating Central institutes such as NTI Bangalore, TRC Madras, LRS Institute, Delhi and other institutions of repute.

- At the State level, the State TB Officer (STO) (level of Deputy Director/Joint Director) supported by some ministerial staff looks after the activities in each State.

- State TB Training and Demonstration Centres (STDCs) in major states of the country provide training, guidance, supervision, coordination, monitoring and technical assessment of the Programme in their respective areas.

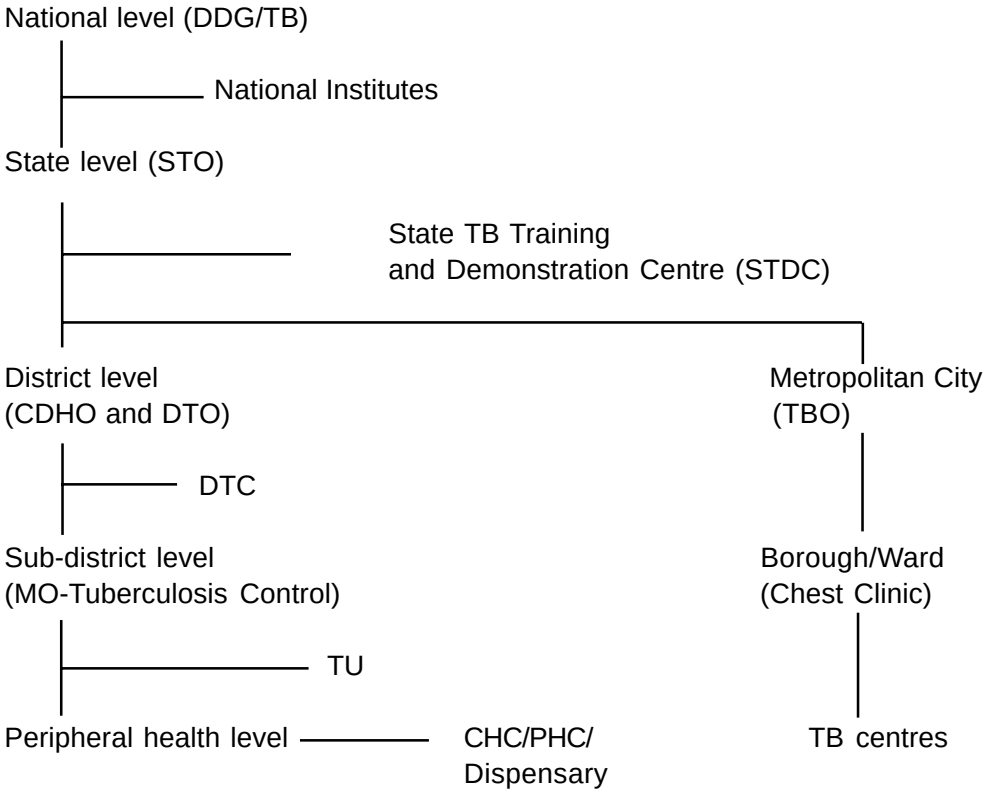
- The District level (or municipal corporation level in large metropolitan areas) performs functions similar to those at the State level in its area. The Chief District Health Officer (CDHO) or his equivalent is the principal health functionary in the district and is responsible for all medical and public health activities including control of TB. The District Tuberculosis Centre (DTC) is the nodal point for TB control activities in the district and also functions as a specialized referral centre. The District Tuberculosis Officer (DTO) at the DTC has the overall responsibility of the Programme at the District level and is assisted by a Medical Officer, Statistical Assistant and other paramedical staff.

- The Sub-district level (also called the Tuberculosis Unit [TU]) is staffed with special paramedical personnel (Senior TB Laboratory Supervisor [STLS] and Senior

Treatment Supervisor [STS]). The functions of sub-district level are implementation, monitoring and supervision of TB control activities in its designated geographical area. The sub-district team maintains the TB Register and prepares Quarterly Reports on case detection, sputum conversion, and results of treatment. A Medical Officer (MO) from the existing health facility where the sub-district team is located will be designated as MO responsible for Tuberculosis Control (MO-TC). This will be in addition to his other responsibilities.

- Delivery of health care including that for TB is done by the general health services, using the Programme guidelines. Providing DOT through the health workers in the general health services (Primary Health Care services) and community volunteers is essential for patient's cure and success of the Programme.

2.3 The structure of the TB Programme can be summarized as follows:



2.4 Implementation of the Revised National Tuberculosis Control Programme (RNTCP) will be mainly as per the General Model. In exceptional cases, where primary health care services are not in a position to provide necessary services, a Special Model will be followed.

General Model (Annexure Ia)

The DTC will function as the headquarter. At the sub-district level, a TB Unit (TU) will be created for about 500,000 population which will be stationed either at a Community Health Centre (CHC) or at Taluk Hospital or at Block Primary Health Centre (PHC). The TU will comprise of a Senior TB Laboratory Supervisor (STLS) and a Senior Treatment Supervisor (STS), both with formal training and orientation on the Revised National Tuberculosis Control Programme. One Medical Officer of the health facility where the TU is located will have overall responsibility for the TB work of this unit and will be called the Medical Officer-TB Control (MO-TC). The diagnostic component (Microscopy Centre) will be located either in the CHC or in PHC or in Taluk Hospital. The number of such microscopy centres will be based on the workload in the district but limited to a maximum of one per 100,000 population. Selection of sites for these centres in rural areas will also take into account distances and the method of referral, which could be the sputum, prepared smears or the patient himself. Either the sputum or the slides or both may need to be transported to the Microscopy Centres. This could be done through the multipurpose workers (MPWs) of the PHCs or through CHVs or Anganwadi workers. The system for recording at these referral centres is given in the Laboratory Manual.

Peripheral health workers attached to the CHC/PHC will be responsible for delivery of drugs. These peripheral level workers could be the MPWs (male and female), trained 'Dais', 'Anganwadi' workers, village health guides or community volunteers. The Medical Officers of the concerned health unit where the patients present themselves for diagnosis will discuss the modality of providing DOTS with the patients and refer them to the appropriate peripheral worker of the concerned area. DOTS centres will be located at places convenient to the patients and providers, and should generally be available at least at the sub-centre level.

Special Model (Annexure Ib)

In large cities, the Municipal Corporation assumes the responsibility for TB control in its area. A Corporation Tuberculosis Officer is responsible for the organization of the programme within the limits of the corporation. The city is divided into geographical areas of responsibility, each under the jurisdiction of a TB dispensary or chest clinic, with laboratory and X-ray facilities as well as physicians experienced in TB. These Chest Clinics will serve as TUs for their earmarked population, and may supervise other TUs in their area if the population warrants.

Delivery of TB activities is carried out by trained staff (Treatment Organizer/TB-HV and Laboratory Technician) based in a general health facility. These staff will be assisted wherever possible by peripheral level workers and community volunteers. There will be one such unit for approximately 100,000 population. At other places, there will be provision for collecting the sputum. These will then be transported to the designated microscopy centres at the earliest.

However, in cities which have Primary Health Care services in position, the delivery of TB-related activities will be carried out by general health personnel as mentioned in the General Model.

Functions 3

3.1 National level

The TB Division of the DGHS acts as a technical nodal point covering all aspects of the NTP including internationally assisted projects for TB control such as those of the World Bank, British ODA (Overseas Development Administration) and DANIDA. It assists the government in formulating policies, prepares operational details, specifies Operational and Technical Guidelines for various agencies and monitors and supervises programme implementation. The Central TB Division also interacts with national and international agencies on technical matters related to TB. It monitors the expenditure both under Plan and Non-Plan, procures drugs and equipment for distribution through the Medical Store Organization (MSO) and other agencies to the States and Districts and deals with all administrative matters of the subordinate offices under the DGHS involved with the NTP.

3.2 State level

The State TB Officer (STO) is responsible within the State for planning, training, supervision and monitoring, with one or more of the staff especially assigned for the TB Programme.

3.3 District level

The Chief District Health Officer (CDHO) or his equivalent is the principal health functionary in the District and is responsible for all medical and public health activities, including the control of TB. The District Tuberculosis Officer (DTO) is specifically responsible for the organization of TB activities in the District. The DTO is based in the District Tuberculosis Centre (DTC) and is supported by a Medical Officer, one or more Laboratory Technician(s), Treatment Organizer and a Statistical Assistant.

Functions of the CDHO

(i) Ensure that topmost priority is given to the TB Control Programme in the overall health activities so that the objectives of the RNTCP are achieved through the DTO.

(ii) Provide all necessary resources within his command to the DTO for effective implementation of the Programme.

(iii) Issue all necessary administrative instructions and facilitate all activities for successful implementation of DOTS at the peripheral level.

(iv) Coordinate with and keep the administrative head of the district (District Magistrate/District Collector) informed on the progress of the RNTCP from time-to-time and ensure his intervention in getting inter-sectoral coordination.

Functions of the DTO

(i) Responsible for smooth implementation of the RNTCP and for achieving the Programme objectives in his district.

(ii) Planning and coordinating TB control activities in the district.

(iii) Identification of microscopy centres, DOT centres and staff responsible for DOTS in consultation with the CDHO.

(iv) Maintaining and distributing supplies (drugs, laboratory reagents, sputum containers, forms, etc.) and equipment.

(v) Organizing training of staff of the TUs and all medical and paramedical staff of the peripheral health institutions.

(vi) Supervising and supporting the TUs (sub-district level), with the help of the Medical Officer and other DTC staff. All TUs, CHCs, Block PHCs in the area are to be visited at least once every quarter.

(vii) Compiling and analysing Quarterly Reports and administrative data on Programme implementation in respect of his District, and sending Quarterly Reports to the State and National levels.

(viii) Directing the DTC, which acts both as a TU for the geographical area of influence (sub-district), and as a specialized referral centre for diagnosis and case management for the whole district.

(ix) Organize health education campaigns and establish linkages with private practitioners, non-governmental organizations and community leaders.

(x) Keep the CDHO informed on the progress of RNTCP activities especially in respect of achievement of the laid down performance indicators.

(xi) Function as member secretary of the District TB Society and convene its meetings as frequently as is required for smooth functioning of the programme in the District.

(xii) Ensure maintenance of appropriate financial records and submit quarterly expenditure reports through the district society.

(xiii) Diagnose and treat symptomatic patients.

(xiv) Evaluate patients referred by other centres and advise on management, with feedback to the referring centre.

Functions of the Medical Officer of the DTC

(i) To assist the DTO in his functions.

(ii) To act as MO-TC for the TB Unit in the area of the DTC.

(iii) To supervise TB Units and peripheral health institutions at least once per quarter.

Functions of the Statistical Assistant

(i) The Statistical Assistant (SA) is responsible for collecting, collating, compiling and maintaining reports received from the Senior Treatment Supervisors (STSs) and Senior TB Laboratory Supervisors (STLSs) of the various TUs in the district and also ensures their timely onward transmission to the concerned authorities.

(ii) He ensures that records and reports are received on time, and are complete and consistent.

(iii) The SA conducts supervisory visits to the TUs and ensures that the STS is filling in the Tuberculosis Register accurately and making out the Quarterly Reports as per the guidelines laid down.

(iv) The SA provides necessary feedback to the DTO on his supervisory visits of the PHCs/CHCs/Dispensaries under various TUs.

(v) He also helps in documentation of the annual report on TB, reflecting the progress, based on the established performance indicators.

3.4 Sub-district level

The sub-district covers a population of approximately 500,000. A team comprising of a specifically designated Medical Officer (MO-TC), a Senior TB Laboratory Supervisor (STLS) and a Senior Treatment Supervisor (STS) is based in a CHC, Taluk Hospital (TH) or Block Primary Health Centre (PHC). The team constitutes the TU, and is under the administrative supervision of the DTO. The staff from the DTC (Laboratory Technician and Treatment Organizer) will carry out the functions of the sub-district supervisory team

in its respective sub-district area in addition to their functions as a microscopy and treatment centre. The functions of the TU are:

Medical Officer (Tuberculosis Control)—(MO-TC)

One of the MOs stationed at a health facility which has an STS and STLS is designated as the MO-TC. In addition to the duties of a Medical Officer involved in service delivery under the Programme (detailed in Section 3.5) the MO-TC will have the following responsibilities:

(i) He will be responsible for the smooth implementation of the RNTCP and achieving its objectives through the sub-district supervisory team (STLS and STS).

(ii) He will be directly responsible for supervision of the STS and STLS. He should pay regular visits to the field and help STS in retrieval of defaulters. He should also cross check the results of field visits recorded by STS/STLS in their diaries and Cards/Registers. The overall supervision of the TU will be done by the DTO.

(iii) He will act as a referral point for patients:

- who present diagnostic problems.
- with drug reactions.
- refusing to take drugs.
- who are failure cases and require further investigation.
- not converting to sputum-negative status at the end of the intensive phase to identify the reasons for the same.
- to evaluate treatment outcome at the end of treatment, e.g., cured, treatment completed, etc.

(iv) Ensure that MOs of neighbouring peripheral centres follow the RNTCP Guidelines for diagnosis, treatment, recording and reporting.

(v) Identification of smear-negative patients who require X-ray examination.

(vi) Approve, in advance, field visit programme of the STS and STLS for the coming month and communicate the same to the concerned MO in-charge of the CHC/PHC.

(vii) Refer problematic cases to the DTO.

(viii) Oversee requisition, receipt and monitoring of supplies.

(ix) Any assignment given by DTO from time-to-time.

Senior Treatment Supervisor (STS)

(i) Responsible for the quality of DOTS and achievement of Programme objectives in his area.

(ii) Responsible for case-detection and organising direct observation of treatment in the sub-district.

(iii) To maintain the TB Register, incorporating required information in respect of all cases diagnosed in the sub-district.

(iv) To prepare Quarterly Reports on case detection, sputum conversion and treatment outcome, and on health services implementing TB activities, and send them to the DTO.

(v) To maintain a map of the area detailing all health facilities in the area, and of government organizations and NGOs which specifically carry out TB activities, including the staff responsible for these TB activities (name, position and location).

(vi) To supervise each PHC, CHC and hospital in the area at least once every month, on a systematic schedule.

(vii) To ensure (by checking Treatment Cards, comparing the TB Register and the Laboratory Register, by visiting the field and comparing findings with diaries of field workers, particularly in relation to retrieval of defaulters, by discussing with staff and by random patient interviews) that patients are correctly classified; appropriate treatment indicated, provided and taken; laboratory tests carried out and treatment outcome indicated appropriately at the time of discharge. Any discrepancies found during checking should be brought to the notice of MO-TC/ DTO.

(viii) To check that passive case-finding through systematic smear examination in patients presenting with productive cough for 3 weeks or more is carried out.

(ix) To randomly check on patients to ensure that treatment is carried out according to guidelines.

(x) To maintain a regular supply of drugs and other logistics and to ensure their uninterrupted availability in all designated centres in the sub-district. Retrieve unfinished medicine boxes of patients who have defaulted (i.e., stopped treatment for two months or more continuously).

(xi) To arrange and facilitate the referral of patients to the DTC or other designated health facilities for differential diagnosis of symptomatics (in smear-negative cases), drug toxicity or complications.

(xii) To provide continuous training to the staff of health facilities to carry out TB control related activities.

(xiii) To establish liaison with private practitioners and NGOs who provide TB services to promote compliance with national norms, facilitate referral and ensure registration and notification.

(xiv) Usually the STS and STLS will conduct supervisory visits as a team. However, if the STS is visiting alone he will collect information on all parameters of laboratory performance, cross-check whether all sputum-positive cases have been put on treatment and take necessary steps to trace initial defaulters and put them on treatment. He will inform the MO in-charge and the STLS of any deficiencies observed in laboratory functioning.

(xv) Undertake all such activities which are required to achieve the stipulated performance indicators.

(xvi) To make a monthly tour programme in advance in such a fashion that all the field units are covered at least once a month and get it approved from the MO-TC.

(xvii) Maintain a diary recording the details of his field visits.

Senior TB Laboratory Supervisor (STLS)

(i) He is responsible for maintaining the quality of sputum microscopy and smooth functioning of laboratory services.

(ii) To organise smear examination at the microscopy centres of the sub-district.

(iii) To organise regular training and continuing education of the laboratory technicians.

(iv) To maintain a list of all microscopy centres in the sub-district which carry out TB activities, including distribution (map of the area) and staff responsible (name,

position and address) in collaboration with the STS.

(v) To supervise all microscopy centres at least once a month, and perform quality control of slides as per the Laboratory Manual, registering the number of slides checked and the proportion of discordance for positive and negative.

(vi) To check the record-keeping (Laboratory Register) and compare the workload for case-finding with the general OPD attendance of symptomatic patients in the health facilities.

(vii) To arrange for coverage of the microscopist in case of leave, so that there is regular and permanent availability of smear examination at that microscopy centre.

(viii) To prepare and distribute reagents, and ensure regular and sufficient supply of reagents and sputum containers in each health facility.

(ix) To ensure proper storage and transport of sputum specimens, safety of laboratory staff and maintenance of microscopes.

(x) To prepare and forward reports on the microscopy centre to the DTO, in collaboration with the STS, regarding implementation, quality control, supervision and management of laboratory supplies.

(xi) To collaborate with the laboratory of the DTC in smear examination and record-keeping to maintain quality control.

(xii) Whenever the STLS is not accompanied by the STS, he will check that sputum-positive cases have been put on treatment and if not, he will inform the Medical Officer in-charge and the STS so that they may take necessary action.

(xiii) To make a monthly tour programme in advance in such a fashion that all the field units are covered at least once a month and get it approved from the MO-TC.

(xiv) Maintain a diary recording the details of his field visits.

3.5 Functions of staff in service delivery

Case-finding and treatment of TB are integrated into the functions of the medical staff of government health services. The staff in specialized services which support the programme (DTC, TB dispensaries) has these functions in addition to supporting the DTO in the management of the Programme. In situations where more than one MO is posted in any of the peripheral health centres, one of them may be

identified and entrusted with the responsibilities of the RNTCP. The categories of staff involved in TB and their principal functions are:

Medical Officer

(i) He is responsible for case-finding, categorization and treatment of TB patients to achieve the objectives of the RNTCP and the laid down performance indicators.

(ii) History-taking and examination of patients. If TB is suspected, ensure sputum smear examinations.

(iii) Diagnosis of TB patients, classification and prescription of adequate and correct treatment regimen. **Careful history-taking is required, particularly to determine if patients have been treated previously for tuberculosis**.

(iv) Discuss with new patients the most convenient location for Directly Observed Treatment (DOT), to ensure regularity and completion of treatment, and educate them about the importance of completing therapy.

(v) Monitoring of progress, management of complications and discharge from treatment, according to guidelines.

(vi) Ensuring correct registration of patient data in the Treatment Card, and that the patient undergoes the necessary bacteriological examinations at the stipulated period and continues regular medication until cure.

(vii) Evaluate patients with drug reactions, treatment failure and cases not converting to sputum-negative status in the initial intensive phase of treatment. Personal attention should be paid to all patients who refuse to take drugs in the prescribed manner to ensure an operationally viable procedure convenient to the patients and the staff.

(viii) Ensuring that sufficient stock of drugs and other logistics is available and regular supply is maintained.

(ix) Supervising the paramedical health supervisor.

(x) Identifying and assigning responsibility for DOTS, reviewing it on a quarterly basis and discussing problems with the MPW during weekly meetings.

(xi) Ensuring that all the peripheral health functionaries understand and carry out their job responsibilities.

Microscopist (Laboratory Technician or Trained Assistant)

(i) Instruct and demonstrate to the patients the proper methodology of bringing out sputum.

(ii) Prepare slides from the thickest portion of sputum, read and record results.

(iii) Maintain the Laboratory Register and report the results to the Medical Officer managing the patient.

(iv) Maintain laboratory equipment and ensure that the laboratory premises are neat and clean.

(v) Coordinate with other staff to ensure that patients with productive cough for three weeks or more undergo sputum examination and receive containers and necessary instructions.

(vi) Dispose of contaminated material as detailed in the Laboratory Manual.

Lady Health Visitor/staff nurse/health assistant/Multipurpose Health Supervisors

This category of staff is responsible for the immediate supervision of the MPWs. Their job description, therefore, includes supervisory activities in addition to their role in service delivery.

(i) Ensure initial visit to the home of the patient prior to starting treatment and follow-up visits for retrieval of defaulters.

(ii) Instruct and demonstrate to those with chest symptoms the method of bringing out sputum.

(iii) Discuss with new patients to find out the most convenient location for DOTS, and continuously educate them on the importance of completing treatment.

(iv) Ensure DOTS. Administer DOTS in the intensive phase and provide drugs in the continuation phase of treatment at the CHC/PHC with first dose of the week under direct observation, with the other two doses self-administered in the continuation phase.

(v) Ensure collection of empty blister pack during the collection of subsequent weekly blister packs throughout the entire continuation phase.

(vi) Maintain the Treatment Cards, ensure that follow-up smear examinations are carried out as per guidelines.

(vii) Instruct patients on the importance of regular treatment, follow-up sputum examinations and follow-up visits.

(viii) Ensure that contacts are suitably examined.

(ix) Coordinate with the laboratory to ensure that sputum is received and examined on time.

(x) Provide patient data to the STS.

(xi) Provide appropriate display of health education materials and conduct group health education activities.

Multipurpose Health Worker (General Model)/TB Health Visitor (Special Model)

(i) Ensure regularity of DOTS during intensive phase as well as directly observed intake of the first dose of each week during the continuation phase. Also ensure collection of empty blister pack during the collection of subsequent weekly blister packs throughout the entire continuation phase.

(ii) Administer DOTS thrice a week in the intensive phase and at least once a week in the continuation phase, with the other two weekly doses self-administered in the continuation phase.

(iii) Verify address of all new patients and educate patients and their families on the plan of treatment. Arrange time and place for DOTS, according to the patient's convenience.

(iv) Ensure that follow-up smear examinations of sputum are carried out as per the stipulated schedule.

(v) Maintain the Treatment Card and record information. Transfer this information to the original Treatment Card at the CHC/PHC during weekly meetings.

(vi) Ensure that the Treatment Card is given to the STS for entry in the TB Register and the TB No. is entered on the card.

(vii) Take steps for immediate retrieval of defaulters. During the intensive phase it should be no later than the day after the default, and during the continuation phase within a week of the default.

(viii) Maintain relevant records.

Patient Flow and Procedures 4

4.1 Diagnosis (Annexure IIa)

People with chest symptoms and other symptoms suggestive of TB consult medical staff at general health facilities which may be governmental, non-governmental or private. The physician should suspect TB in these individuals, and request sputum smear to arrive at a diagnosis.

Sputum examination is free of charge at government facilities. All persons who have productive cough of 3 weeks duration or longer should have 3 sputum examinations for AFB. Government facilities provide treatment free of charge to all TB patients.

The Medical Officer at the health facility screens the patients and sends those who are suspected of having TB for sputum smear examination. The patient receives sputum containers and instructions and provides the samples, which are examined in the laboratory. If sputum microscopy is not available at the health facility, the patient's sputum is sent to the nearest microscopy centre or the patient himself may be referred to these centres if they are close by. Three sputum samples are collected in two days—two spot and one early morning.

Patients with two positive smear results are diagnosed by the physician as having TB. They are further classified as new or old cases based on their treatment history, and appropriate therapy is prescribed.

Patients with only one positive result of smear examination will be referred to the nearest X-ray facility. Patients who have one smear positive and a chest X-ray compatible with TB are considered to be suffering from TB and are registered as smear-positive cases.

Patients in whom all 3 samples are smear-negative are prescribed symptomatic treatment or broad spectrum antibiotics for 1-2 weeks. Most patients are likely to improve with antibiotics if they are not suffering from TB. If the symptoms persist they are re-evaluated on the basis of X-ray and clinical examination. Those patients who in the opinion of the physician have active TB, based on the X-ray findings and persistence of symptoms, will be diagnosed as having smear-negative TB. They will be classified into "seriously ill" and "non seriously ill" and appropriately categorized for selection of

the treatment regimen as detailed in the Technical Guidelines. If the patient is put into the seriously ill category, reasons for the same should be mentioned in the remarks column of the Treatment Card and TB Register.

Cases who are smear-negative require an X-ray for diagnosis. Diagnosis should be at the DTC or by the MO-TC who if he considers it essential may consult the DTO.

If good diagnostic practices are followed as indicated above it is expected that at least 50% of the new pulmonary TB patients diagnosed will be smear-positive.

Those suspected of having pulmonary TB may be referred by private practitioners to the government services for diagnosis and treatment. In such cases, the Medical Officer at the government health facility will have 3 sputum smears examined, in order to arrive at a diagnosis or refer the patient to the DTC/Chest clinic for this purpose. Information should generally be provided to the referring physician on the patient's diagnosis and treatment.

Extra-pulmonary TB cases will be diagnosed by physicians and referred to a DTC/ Chest clinic or MO-TC. Documentation of diagnostic procedures undertaken to arrive at the diagnosis must be mentioned in the Treatment Card.

4.2 Treatment (Annexure IIb)

Once the patient has been diagnosed as having TB, the MO is responsible for indicating the treatment regimen according to the following categories, depending on the history of previous treatment and results of investigations:

Category I: New pulmonary sputum-positive, seriously ill sputum-negative pulmonary and seriously ill extra-pulmonary cases:

$2(RHZE)_3/4(RH)_3$ (6 months)

Category II: Retreatment cases:

$2(SRHZE)_3/1(RHZE)_3/5(RHE)_3$ (8 months)

Category III: New non-seriously ill sputum-negative and extra-pulmonary cases:

$2(RHZ)_3/4(RH)_3$ (6 months)

All drugs are administered thrice weekly. The prefix indicates the duration of drug administration in months. The subscript indicates number of doses per week. The

abbreviations are as follows:

R: Rifampicin E: Ethambutol
H: Isoniazid (INH) S: Streptomycin
Z: Pyrazinamide

The intensive phase of treatment of sputum smear-positive cases is extended by one month if the smear at the end of the intensive phase is positive; however, the period of the continuation phase remains the same. The details of the different treatment categories and regimens are given in the Technical Guidelines.

4.3 Drug administration

The drug delivery component varies in some metropolitan areas (Special Model) and will be described separately. The model in districts and sub-districts (General Model) is as follows:

After the physician decides the category of treatment for a patient, the Treatment Card and Patient Identity Card are prepared. If the patient is diagnosed at the DTC or TU the particulars are entered in the TB Register on the same day and the TB No. is allotted. If the patient is diagnosed, the address verified, the patient is put on treatment at the CHC/PHC and the registration is done during the supervisory visit of the STS.

The MO of the Peripheral Health Institution (PHI) explains to the patient about the disease, informs him about the dosage schedule, duration of treatment, examination of contacts and frequency of monitoring of progress towards cure whenever required. The MO also determines the DOTS centre most easily accessible to the patient after discussing with him and arranges for his treatment there. Health education and motivation of the patient should be reinforced periodically during follow-up visits. The Treatment Card is maintained at the PHC or CHC where the patient was diagnosed.

If the patient is to be treated by a Peripheral Health Worker (PHW), a duplicate card will be prepared and given to the PHW to record the DOT. The Medical Officer of the PHI will give the patient's medicine box for the entire duration of treatment to the PHW. Issue of this medicine box to the PHW will be duly recorded in the special register maintained at the PHC/CHC. The PHW visits the house of the patient (definitely within a week) and has a detailed dialogue with the patient and other members of the family, emphasizing the treatment schedule, importance of regular uninterrupted drug intake, completion of the course of treatment, possible intolerance, etc. as well as the need for check-up of contacts. After this visit, treatment is commenced by the

PHW (MPW, Anganwadi worker, Village Health Guide) or community volunteer. For drug administration, a convenient location is decided mutually between the PHW and the patient. Medicines are delivered at the home of the patient in only exceptional circumstances when the patient is unable to collect it. In such situations the entry is encircled on the Treatment Card and the reason for the same stated in the "Remarks" column. **During the intensive phase of treatment each and every dose of medicine is to be taken under direct observation of the PHW or community volunteer.**

Patients who are treated at the diagnostic health facility (PHC/CHC/DTC) will receive the first dose of medication on the day the Treatment Card is prepared. Their houses should be visited by health staff for confirmation of address, contacts and motivation within the first week of treatment.

Either Monday, Wednesday and Friday or Tuesday, Thursday and Saturday are fixed as drug administration days for a particular patient, and treatment cards are arranged accordingly. If the patient misses taking the drugs on the specified day, he can take them on the next day. The patient must be contacted within one day of missing a dose during the intensive phase. Drugs which are administered to the patient during the intensive phase must be taken under observation of the health staff. The first dose of the weekly drug during the continuation phase should also be taken by the patient as directly observed therapy and the empty blister pack should be seen by the health functionary before giving him the weekly blister pack. The patient must be contacted within a week of missing the weekly collection of drugs during the continuation phase.

Treatment cards should be organized at drug distribution centres according to the day of scheduled observation and the phase of treatment (i.e., intensive phase and continuation phase). When the patient swallows the medication under direct observation, the card should be placed after the divider for the next scheduled observation (e.g., from Monday to Wednesday during the intensive phase). In this manner, the cards of patients who do not present for treatment will be apparent on the same day, and appropriate action for their retrieval can be taken.

As regards the administration of streptomycin injections at the peripheral level, the policy will be to entrust this responsibility to the ANM at the sub-centre level or to any registered doctor at the place agreed to with the patient for his DOT. If the same is not possible, the patient has to come to the PHC/CHC and may even be hospitalized for the initial intensive phase during which streptomycin injection is to be given. Disposable or sterilized syringes and needles should be used for this as detailed in the Technical Guidelines.

The PHW (or PHC staff) records the drug administration at the time of intake, and refers the patient to the microscopy unit when follow-up sputum examinations are due. He also enquires about drug reaction and if necessary, refers the patient to the MO.

In some large metropolitan cities diagnosis is made at the specialized TB Dispensary/TB Clinic, while microscopy and treatment administration are done by special staff based in a general health facility. After the doctor decides on the category of the patient, the Treatment Card and Patient Identity Card are prepared and the patient is registered in the TB Register and allotted a TB Number. The doctor explains the treatment schedule and refers the patient to the area treatment centre for DOT. The TB Health Visitor (TB-HV) takes the Treatment Card to the treatment/microscopy centre where it is kept for recording and supervision of treatment until completion. The TB-HV visits the house of the patient, emphasizes the importance of adhering to the treatment schedule to the patient and the family, and administers the first dose of drugs. For subsequent drug administration, the patient will be requested to come to the treatment/microscopy centre thrice a week in the intensive phase. The TB-HV may in consultation with the patient decide on a more convenient location for DOT such as the patient's workplace, health post convenient to the patient, etc. In such circumstances the person administering DOT (Community Volunteer) will be identified at these places and given a duplicate Treatment Card together with the patient's treatment box.

The patient will bring his/her own glass for water. Drugs are administered by the TB-HV. If the patient defaults, the TB-HV goes to the residence, administers the drugs and educates the patient to ensure that he takes the drugs regularly. Most patients are likely to be within walking distance from the treatment centre in the area. The TB-HV makes arrangements to give streptomycin injections for all patients on the Category II regimen. Disposable or sterilized syringes and needles are used as detailed in the Technical Guidelines.

The **TB-HV** enquires about drug reactions and intolerance, if any, and refers such cases to the Medical Officer of the Chest Clinic. The TB-HV provides health education to the patient and his family regarding the need for regular medication, etc. as well as for screening of contacts of sputum smear-positive cases.

For the **continuation phase**, the General and Special models follow the same pattern. Patients collect drugs on a weekly basis from the respective centres (Note: The first dose must be administered under direct observation). When they report for drug collection they must present the empty blister pack/strip of the drugs already consumed. The TB-HV/MPW or PHC workers visit the patients homes periodically or at random and provide health education to the patients and enquire about drug intake.

4.4 Follow-up (Annexure IIIa, IIIb)

Follow-up of the patients is done as detailed below:

New smear-positive patients

Two smears are examined each time during follow-up. The first sputum smear examination is done after 2 months of starting treatment, i.e., at the end of the intensive phase of treatment. On the last but one supervised dose of the intensive phase, the patient is given a sputum container and instructed to bring the early morning sample (overnight sputum). The patient brings the sputum sample when he comes to take the last dose of the intensive phase and at the same time a spot sample is also collected at the centre. The results of both the smear examinations will be available by the time the patient comes for the next visit. If both smears are negative, the patient will be put on the continuation phase. If either of the samples is positive, the intensive phase of treatment will be extended by one more month, and another smear examination will be done at the end of the third month of treatment. Thereafter, the patient is put on the continuation phase regardless of his/her sputum status at the end of the extended intensive phase. Subsequent follow-up smear examinations are done after 2 months of starting the continuation phase and if found positive the patient is declared as a treatment failure, is re-registered and started on the retreatment regimen afresh. If the follow-up sputum is negative, the continuation phase is completed and smear examination repeated at the end of treatment.

During the continuation phase the patients collect drugs from the centre (or from the PHW) on a weekly basis, and must present the empty strip/blister pack of the drugs consumed. When the patient comes for drug collection the first dose of the continuation phase must be administered under direct observation.

Retreatment patients

Two smears are examined each time during follow-up. The first sputum smear examination is done at 3 months after beginning the intensive phase of treatment. On the last but one supervised dose of the intensive phase the patient is given a sputum container and instructed to bring the early morning sample (overnight sputum). The patient brings the sputum sample when he comes to take the last dose of the intensive phase and at the same time a spot sample is also collected at the centre. The results of both the smear examinations will be available by the time the patient comes for the next visit. If both smears are negative, the patient will be put on the continuation phase. If either of the samples is positive, the intensive phase of treatment will be extended by one more month, and another smear examination will be done at the end of the fourth month of treatment. Thereafter, the patient is put on the continuation phase regardless of his sputum status at the end of 4 months of the intensive phase. Another follow-up smear examination is done after 2 months of the starting of the

continuation phase. Whatever the results of the follow-up smear examinations the patient continues to take the same treatment regimen till completion when another follow-up smear is done.

During the continuation phase, patients should collect the drugs from the centre (or from the PHW) on a weekly basis, and must present the empty strip/blister pack of the drugs consumed. When the patient comes for drug collection the first dose must be administered under direct observation.

Smear-negative patients

Two smears are examined during the follow-up visit at the end of 2 months of starting treatment (completion of the intensive phase) and at the end of treatment. If the patient becomes sputum smear-positive during the course of treatment or at the end of treatment he is started on a retreatment regimen as a fresh case and is registered as "failure".

4.5 Transfer of patients

For patients who need to be transferred from one Treatment Centre to another, the Transfer Form (Annexure VIII) will be filled in triplicate at the centre where the patient is taking the treatment. One copy of this Form will be given to the patient, another sent to the Treatment Centre where the patient proposes to take treatment and the third is retained at the Treatment Centre along with the Treatment Card of the patient. The centre where this case has been transferred after registering him as a "transfer in" case shall return the counterfoil of the form to the centre from where the case has been transferred out.

If the transfer is within a TU no new TB Number is given to this patient. However, if the transfer is to another TU area, the patient is re-registered as a "transfer in" case and given a new TB Number.

Recording and Reporting 5

The following recording and reporting forms are used in the RNTCP:

- **Tuberculosis Register** kept at the sub-district level in the States or at the borough level in metropolitan areas.

- **Tuberculosis Treatment Card** for each patient under treatment, kept at all health units administering treatment. A duplicate of the card is given to the PHWs who administer supervised chemotherapy. The card must be clearly marked 'Duplicate' and the information on it should be transferred to the Master Card kept at the Health Institution (PHC/CHC) by the most peripheral health functionary preferably every fortnight or at least once a month. Once the patient completes treatment or if he dies, defaults or is transferred, it should be ensured that all the information has been entered in the Master Card which is retained at the Peripheral Health Institutions.

- **Patient's Identity Card** kept by the patient.

- **Transfer Form** kept at the health units administering treatment or diagnosing TB.

- **Tuberculosis Laboratory Register** kept at laboratories carrying out sputum examination for tubercle bacilli.

- **Laboratory Form for Sputum Examination** kept at all health units.

- **Quarterly Report on Case-Finding** filled at any unit maintaining a TB Register (which may be at the sub-district/chest clinic/borough level) by the Senior Treatment Supervisor and sent to the District/city headquarters level. This pertains to the patients registered during a quarter and gives case-finding data and relationship between new sputum-positive and new sputum-negative cases.

- **Quarterly Report on Sputum Conversion** filled at any unit maintaining a TB Register (which may be a sub-district/chest clinic/borough level) by the Senior Treatment Supervisor and sent to the District/city headquarters level. This report gives the proportion of smear-positive cases of the cohort registered in the previous quarter who became smear-negative at 2 and 3 months of treatment.

- **Quarterly Report on Treatment Outcome** of cases registered 12-15 months earlier filled at the sub-district/chest clinic/borough level by the Senior Treatment Supervisor and sent to the District/city headquarters level. This report shows the various treatment outcomes of all cases registered during the quarter.

- **Quarterly Report on Programme Management** filled at the sub-district/chest clinic/borough level by the Senior Treatment Supervisor and sent to the District/ city headquarters level. This report indicates the status of the health units, its functionaries as well as the state of logistics in the District.

Note: Instructions for the use of the above forms and reports is also described in the Technical Guidelines.

Compilation and analysis

Reports are completed by the staff at the sub-district or chest clinic level on the first week of each quarter and sent to the District/city level. This information is compiled and analysed at the District level. Remedial actions must be initiated immediately at the District level where the technical and managerial indicators have not been achieved. This compiled and analysed report is then sent to the State along with a copy to the Central TB Division in the next week, i.e., in the first fortnight of the next quarter. The reports from all districts are compiled and analysed at the State level within the first month of the next quarter. The shortfall in achievement of performance indicators should be noted by the State TB Officer for the initiation of immediate remedial measures. The completed report and the measures initiated to plug the loopholes should be sent to the Central TB Division within 6 weeks of the next quarter.

A summary of diagnosis, treatment, monitoring and supervision and persons responsible for each is tabulated in Annexure IV.

Monitoring 6

6.1 There are two ways to monitor TB patients:

- Monitor the sputum smear examination results at prescribed intervals during treatment, i.e., at the end of the intensive phase (2 months for new cases, 3 months for retreatment cases), two months after the start of the continuation phase, and at the end of treatment.
- Monitor the drug intake by DOT in the intensive phase and drug collection during the continuation phase by reviewing the TB Treatment Cards *vis-a-vis* the drugs available in the respective patient-wise boxes. This should ideally tally in 100% of cases.

6.2 The best way to start **monitoring treatment results of a pulmonary smear-positive case** is to check for the conversion of sputum from smear-positive to smear-negative for AFB. Sputum of smear-positive patients will convert to smear-negative and remain smear-negative when the cases take their prescribed medications on a regular basis for the required time period. Therefore, the conversion of sputum smears from positive to negative is the best indicator that the intensive phase of chemotherapy has been regular and effective. After 2 months of chemotherapy more than 80% of new pulmonary smear-positive cases should be smear-negative, and after 3 months the rate should increase to more than 90%. Pulmonary smear-positive relapse cases should have approximately the same rates of sputum conversion as new pulmonary smear-positive cases. Other smear-positive retreatment cases, such as failures, may have sputum conversion rates of more than 75% after 3 months of starting the retreatment regimen.

6.3 The way to **monitor a pulmonary smear-negative case** is to check the drug collection chart on the Tuberculosis Treatment Card for regularity in collecting drugs as scheduled and comparing it with the drugs left in the respective patient-wise boxes. A patient's pre-treatment sputum smear could have been read incorrectly as negative (false negative smear examination), therefore, to rectify any possible errors at the time of initial diagnosis a pulmonary smear-negative case should have his sputum smear examined at 2 months. The examination is repeated at the end of treatment to ensure that the patient continued to take his medication during the continuation phase of therapy and remained negative when treatment was completed. A smear-negative patient who takes medications irregularly may become positive at the end of therapy.

6.4 Extra-pulmonary (EP) TB cases are monitored for drug collection in the same manner as pulmonary smear-negative cases.

Supervision 7

7.1 Good supervision is the process of helping health workers improve their performance. During supervisory visits one should observe and reinforce stipulated practices in the various components of the RNTCP as well as identify and correct inadequate performance and recording discrepancies, if any, before these become a major problem. The crux of supervisory visits should be on education, coordination, motivation, facilitation and guidance with the overall objective of implementing corrective action. The Supervisory Team at the TU (STS and STLS) are primarily responsible for the supervisory activities in their area of coverage. Though they may go individually for supervisory activity, but some of the visits should be made as a team for better coordination. The DTO and designated Medical Officer will also supervise the field units from time-to-time. The key indicators and frequency of supervisory visits should be as indicated under the job description of each category of staff, details of which are given in Annexures V-VII.

Some health units will need more supervision than others, the important guiding criteria for which are:

- The sputum smear conversion rate of new pulmonary smear-positive cases by the end of the intensive phase of treatment. If a conversion rate of above 85% at 3 months is not achieved, the health unit should be closely supervised until this is achieved.

- The regularity of drug supply by the health unit to patients during the continuation phase of treatment. If this is irregular, necessary action is to be taken. This can be supervised by:

    - observing the patients when they come to collect weekly blister pack bringing the empty blister pack.

    - marking on the Tuberculosis Treatment Cards and tallying them with the drugs available in the patient-wise boxes.

- The treatment monitoring of pulmonary TB cases by sputum smear examination at appropriate intervals. If monitoring is inadequate, supervision needs to be intensified.

- Cure rate less than 85%.

- The emphasis on sputum examination as a method of diagnosis (the proportion of new smear-positive cases should be equal to that of new smear-negative patients). Units with a high proportion of smear-negative cases require more frequent supervision.

- Default rate of more than 5%.

Frequent visits need to be planned to health units which require close supervision.

By and large, the health units should be sent prior information of the supervisory visit. However, some surprise visits to the health units must also be undertaken. The activities of the Health Workers under the RNTCP are given below and can be used as a guideline for preparing the checklist.

7.2 Checklists for health units providing treatment

Activities of health workers

Case-finding

- Assess and refer patients suspected of having TB for sputum microscopy and clinical examination.

- Fill in the Laboratory Form of all suspects for sputum examination.

- Collect and send sputum samples to Microscopy Centre or prepare sputum smears if the patient is unable to go to the Microscopy Centre.

- Determine the proportion of out-patient dispensary patients classified as TB suspects and referred for sputum examination, the average number of smears examined per suspected case and the proportion of all suspected cases found to be positive as items for review during a supervisory visit. While there are no formal targets, centres examining less than 2-3% of general OPD patients examining less than 2-3 smears per suspected case, and finding fewer than 10% of the suspected cases with positive smears, should have their diagnostic procedure examined in more detail.

Treatment

- Complete and maintain a Tuberculosis Treatment Card for each patient by recording:

    - general patient information (such as name, address and age).

- the District Tuberculosis Number and Health Unit.

- the disease classification, type of patient and prescribed treatment regimen and dosages for the intensive and continuation phases. It is essential to take a detailed history of whether patients have taken any anti-tuberculosis treatment in the past in order to classify patients correctly so that they receive the appropriate treatment regimen.

- drug administration and/or drug collection.

- sputum smear examination results.

- weight of the patient.

- remarks, if required.

- Administer under direct observation the correct number and type of drugs to each patient according to treatment regimen, during the intensive phase, and at least once a week during the continuation phase.

- Watch patients swallow their drugs and administer streptomycin injections after the pills are swallowed.

- In the continuation phase when the patient comes for collection of weekly drugs, the empty blister-pack must be checked as evidence of consumption of the previous weeks' drugs.

- Use disposable needles and syringes or properly sterilized needles and syringes.

- During the intensive phase and during subsequent contacts, educate patients about the need to complete treatment.

- Administer the appropriate intensive phase drug treatment regimen for an additional month to new pulmonary smear-positive cases who are still smear-positive at the end of 2 months and to smear-positive retreatment cases who remained smear-positive at the end of 3 months.

- Administer the retreatment regimen to failure cases.

- Locate patients who stop coming for treatment within one day after a missed visit and bring them back to treatment.

- Administer the appropriate treatment regimen to patients who interrupt their treatment.

Microscopy

- Assess the sputum conversion of new patients at 2 (3) months to confirm if they have converted from smear-positive to smear-negative status.

- Assess sputum conversion of patients on retreatment regimen at 3 (4) months to check if they have converted from smear-positive to smear-negative status, particularly the smear conversion of those classified as relapses.

- Refer patients or suspected cases for sputum collection; if facilities for sputum microscopy are available, collect the sputum.

Drugs

- Whenever a patient is put on treatment, a treatment box of appropriate category should be ear-marked for him by writing the patient's name and his TB No. The drugs in the box should never be used for any other patient. In case the patient does not complete the treatment for any reason, the unused medicines with the box should be returned to the STS.

- Do not use drugs beyond the date of expiry.

- Drugs which are due to expire first should be used earlier.

- The drugs should be properly stored according to the TB No. to facilitate retrieval.

Patient awareness

- Awareness of treatment regimen includes:

    - the number, type and colour of drugs issued.

    - the duration of treatment and the importance of completion of treatment.

    - the location and working hours of the Treatment Centre.

    - when and where he will begin treatment.

    - the importance of taking all the prescribed drugs.

- common side-effects of the drugs and what to do if he experiences them.

- Awareness of the importance of direct observation in the intensive phase.

- Awareness of the frequency and importance of sputum examinations, and understanding of sputum results.

- Awareness of the symptoms and infectiousness of TB.

- Importance of contact examination.

- Awareness of whom to see and where to find them in case of any problems regarding treatment or otherwise.

- Awareness regarding safe sputum disposal and other preventive measures.

Patient activities

- Swallow all drugs during the intensive phase of treatment in the presence of the health workers.

- Swallow the first dose of the weekly course of the continuation phase under direct observation of the health functionary and bring the empty blister-pack during the next weekly collection of the drugs.

- Bring 2 samples of sputum at the end of 2 (3) months of starting of treatment and at the completion of treatment or at any other time advised by the health worker.

- Bring all symptomatic contacts to the nearest health unit for check-up.

Logistics

- Adequate supply of drugs, needles, syringes, water for injections, sterilizers, laboratory supplies and sputum containers.

- Adequate supply of Tuberculosis Treatment Cards, Identity Cards, Laboratory Forms for Sputum Examination and Transfer forms.

7.3 Supervisory visits

Some ways to collect information during a supervisory visit are:

(i) Review the Tuberculosis Treatment Cards
(ii) Review Laboratory Register
(iii) Observe health workers
(iv) Talk with health workers
(v) Talk with TB patients
(vi) Stock position of consumables
(vii) Cross-checking/comparison of drugs in patient-wise boxes with the patient's TB Cards
(viii) Cross-checking of the diaries of workers with the actions recorded in the patient's TB Cards particularly in respect of retrieval of defaulters.

During the visits ensure that patients diagnosed with smear-positive TB are directly observed to take their medications during the intensive phase of treatment. All patients found to be smear-positive should be in the Laboratory Register. All smear-positive patients in the Laboratory Register should be registered in the Tuberculosis Register. Patients should become smear-negative by the end of the intensive phase and be monitored by sputum smear examination during the course of treatment.

During visits make sure that all patients with Tuberculosis Treatment Cards are registered in the Tuberculosis Register. Transfer information about sputum smear examination results from the Tuberculosis Treatment Cards to the Tuberculosis Register.

Review Laboratory Register and ensure the follow-up and registration of all smear-positive patients.

Evaluation of Case-Finding and Treatment Results

8

8.1 Quarterly Report on Case-Finding

The Quarterly Report on Case-Finding provides data on new cases and relapses of TB according to sex in two sections. In the first section they are classified by site (pulmonary, extra-pulmonary); the pulmonary cases by bacteriological result of smear examination. Smear-positive cases are further subdivided into new cases and relapses.

Total new smear-positive cases versus expected new smear-positive cases

Active case-finding, is not recommended. However, efforts should be made to improve diagnosis of TB among patients attending health facilities by ensuring that all persons with cough for 3 weeks or more have 3 sputum examinations for AFB.

A low number of notified cases (incidence) may be the result of insufficient case-finding (not enough symptomatic patients referred/examined), improper bacteriological diagnosis, or both. It should be ensured that all symptomatics attending general health services are being examined according to guidelines with the recommended number of sputum samples. There should be approximately one TB chest symptomatic person for every 50 new general OPD attendance. Comparing the results with those from selected health services which are better organized may be useful. Efforts should be made to educate the doctors, nurses and other health providers to suspect TB in all symptomatics with cough of 3 weeks or more and to ensure 3 sputum examinations for all such persons.

During the planning of a project it is common to calculate expected cases on the basis of the epidemiological data available from population studies, e.g., risk of infection or prevalence studies. However, this usually overestimates initial caseload, as part of the population attends private practitioners or services not yet included in the programme. Attendance will increase spontaneously when the population knows that good service is being provided regularly. During extension of programme implementation, the trend should be an increase in cases notified, gradually approaching the epidemiological estimates.

To start with it has been estimated that at an average ARI of 1.7 there will be approximately 85 new smear-positive patients per 1,00,000 population (lakh) occurring annually of which about 60%, i.e. 50 per lakh new smear-positive patients will seek treatment from

government health facilities.

Smear-negative cases compared with total pulmonary cases

A high proportion of smear-negative cases may be due to deficiencies in microscopy, to over-diagnosis based only on clinical symptoms and radiology, or both. Although HIV/AIDS increases the probability of smear-negative disease, this does not happen in a large enough proportion to be noticeable in this type of estimated analysis.

Some cases of active pulmonary TB can only be diagnosed with culture. However, one culture discovers a similar number of cases as two smears, and the maximum increase in yield by repeated cultures over repeated smears is only about 30%. Patients, especially children, can have TB even if smears and cultures are negative. Good clinical, radiological and smear diagnosis (in the absence of culture) should result in about 60% of the pulmonary cases of TB having positive smear results, a relation of about one new smear-positive to ½-1 smear-negative case. However, clinical criteria and practices differ, and it is common for physicians to diagnose pulmonary TB based on radiological images compatible with present or past TB without performing sputum smears. This practice is incorrect and should be discouraged.

Besides the number of smears requested, the quality of the laboratory work should also be observed. A system of periodical external quality control is desirable but at least laboratory supervision by the STLS should be done systematically to ensure compliance with the technical norms and accuracy of laboratory diagnosis. This would include 100% cross-checking of all sputum smear-positive and at least 10% of sputum smear-negatives.

Proportion of relapses

A high proportion of relapses may indicate misclassification of failures as relapses or, if the information is correct, may be due to inadequate treatment regimens in the past.

Proportion of failure cases

A high proportion of failure cases suggests inadequate treatment regimens utilized for treatment of TB in the past or/and poor patient compliance or/and inappropriate categorization in the present regimen.

As the average treatment completion rate under the current NTP is less than 30%, it is expected that the proportion of relapses and failures will be high to start with but will gradually decrease as patient compliance and cure rates will improve. Another area needing attention is detailed history taking in respect of past treatment.

Proportion of extra-pulmonary cases

Normally extra-pulmonary cases should account for about 10% of the total pulmonary cases. If the proportion of extra-pulmonary cases detected is very high there

can be two possibilities. The first possibility is that there is under diagnosis of pulmonary cases, and the other possibility is that there is an over diagnosis of extra-pulmonary cases. Both these situations need technical monitoring.

In places where prevalence of HIV-TB co-infection is high, the proportion of extra-pulmonary cases may also be higher.

Trend of the distribution of cases by age and sex

The distribution of cases by age is a good indicator of the impact of the Programme on the epidemiology of TB. When the risk of infection diminishes, the average age of new cases increases. In particular, the mode in young people moves to the right, diminishes and gradually disappears. This effect is fairly insensitive to variations in programme coverage, yet it is a better indicator than the trend of total incidence for programmes which have varying resources, coverage or operational efficiency during the period analysed. When HIV infection produces an increase in TB cases, the peak in young adults increases or reappears, the same occurs in developed countries when there is an increase of immigrants from areas of high risk of TB infection.

8.2 Quarterly Report on Sputum Conversion

Both for new as well as for retreatment cases the useful information to be observed during supervision is the proportion of smear conversion at 2-3 months, as an early indicator of the effectiveness of programme implementation in the intensive phase of treatment.

8.3 Quarterly Report on Treatment Outcomes

The results of the treatment of TB in cohorts of patients is the principal indicator of the efficacy of the programme. The cohort of smear-positive cases is chosen as the main group for analysis, because they are the main sources of infection for the community, and because the smear conversion can be documented. The reports are produced quarterly.

An important step, previous to data analysis, is to check that the cohorts are complete, e.g., all the cases notified for that period have been included in the report on treatment results and any exclusions explained in detail. The most important items to analyse are:

Proportion of patients who are cured or who complete treatment

Cure is the main target for evaluation of the Programme, and therefore, the most important indicator. The trend of cure rates should be followed in time, and once it has reached optimum levels (above or near 85% for new cases and relapses) it should be maintained throughout the duration of the programme. A small proportion of smear-positive cases completing treatment but without bacteriological evidence of smear conversion and cure

is acceptable, as they can be patients in whom productive cough has disappeared and smear examination on sputum could not be done. However, even in all such cases efforts, such as irritation of posterior pharyngeal wall, steam inhalation, warm saline gargles, etc. should be made to bring out the sputum. Even after these efforts, if sputum is not available and only a saliva sample is obtained then this sample should be examined during follow-up examinations.

The cure rate expected for retreatments is usually lower than that for new cases as retreatment cases include previous failures and, therefore, a high proportion of patients with *M. tuberculosis* strains resistant to drugs, and also of patients with particular characteristics which make them prone to defaulting (such as alcoholism, drug addiction, etc.).

The achieved cure rate should be compared with the desired cure rate of more than 85%. If the achievement is less than the stipulated one then reasons for the shortcomings need to be analysed and immediate remedial measures planned and executed.

Proportion of defaulters

The proportion of defaulters should be less than 5% in a well-functioning programme. A high rate of defaulting is the most common cause of low cure rates. Common causes are poor information, education and motivation for the patients. The reasons for default also include poor accessibility of the treatment services for patients, especially direct observation of treatment, in respect of geographical, financial, social and waiting time. Indifferent staff behaviour may also lead to the services being inaccessible or underutilized. Patient migration due to various reasons is also an important reason for default.

A second component is lack of or poor defaulter retrieval action. Many health service providers consider that their responsibility is limited to the door of the health centre and that it is up to the patient to complete the treatment indicated. An important characteristic of a public health programme is that, in order to protect the community, the health system is responsible for its effective implementation.

Proportion of patients "transferred out"

This indicator will present variations from one region to another depending on the stability of the population. In poorly functioning programmes, "transfer" is used as a way of disguising patients lost from supervision. In fact for a gross evaluation, transfers in which there is no information on the patient afterwards may be treated as defaults. In well organized programmes, patients who complete their treatment in a different District may be traced and their results obtained. In any case, the proportion of transfers should be considered in view of the characteristics of the population, and if high, special actions should be taken to ensure that the transfer includes adequate information to the

recipient service (both directly and through the patient), and that the patient has access to continuation of treatment and that the treatment is completed without interruption.

Proportion of failures

Failure of treatment is related to drug resistance and to irregular drug intake. An early indicator of failure is the conversion rate at 2-3 months after the start of treatment. When low conversion rates are observed, the supervisors should ensure that every dose of medication in the intensive phase of treatment and at least one dose per week in the continuation phase is given under direct observation, that the regimens are prescribed correctly and in particular that patients are properly categorized. Special care should be observed in categorizing a case as “new case” only if they have received treatment for less than a month or no treatment at all in the past.

Proportion of retreatments

Retreatments are the result of poorly organized programmes in the past. When a more effective strategy like the present revised strategy is first implemented, the proportion of retreatment cases (including Failures, Relapses and Treatments after Default) is usually high in comparison with the new cases. One of the results of a good treatment programme is to reduce retreatments and chronic cases, both by curing them with appropriate regimens and by curing new cases thereby preventing new failures, relapses and treatments after default. With these actions in a few years the proportion of retreatment cases will diminish and stabilize.

Proportion of deaths

The most common cause for high mortality on account of TB used to be late presentation of patients for diagnosis resulting in poor clinical condition. This situation was primarily a result of poor coverage of health services, difficult access of patients to bacteriological diagnostic facilities and treatment centres. As has happened in some parts of the world, with the increase in TB-HIV co-infection, mortality due to TB is expected to increase in India also. Although death is generally not due to TB itself but due to associated diseases, the end result is an increase in case fatality and a reduction of proportion of TB cases cured in the cohorts. It has been documented that DOTS prolongs life in HIV-infected TB patients.

8.4 Other indicators for monitoring the Tuberculosis Programme

Some of the information which can be obtained from the analysis of Quarterly Reports has already been indicated. Other data which can complement monitoring of the Tuberculosis Programme at the National/State level and influence control measures are:

(i) To measure the secular trend of transmission in the community and the Annual Risk of Infection in children. There are methods to analyse the data obtained which avoid most of the influence of BCG vaccination.

(ii) Once the Programme is stabilized, the proportion of smear-positives among adults with productive cough is an indirect indication of the prevalence of TB in the community.

(iii) The prevalence of drug resistance is an indicator of the problems to be expected to achieve cure, and also reflects the effectiveness of programme implementation.

(iv) Other indices such as:

- Delays in diagnosis of the patient at PHI and laboratory levels.
- The proportion of patients who first sought care in the government sector (should increase as effectiveness and reputation of government services improve).
- The proportion of patients diagnosed at the DTC (should decrease as effective diagnosis is done at peripheral institutions).
- The proportion of all new smear-positive patients placed on DOT (should be >90%).
- The proportion of "seriously ill" smear-negative patients given Category I treatment (should be <20% of total Category I).
- The proportion of DOT patients who collect >=80% of expected doses per month per DOT site, TU and district.
- Calculation of rates based on diagnosis, to estimate case coverage.

Training

9

Training activities under the Revised NTP

Training as per the new guidelines is an important component under the Revised NTP. The staff will be required to be trained as per the revised technical, operational and laboratory guidelines. The training will be undertaken at different levels. National and Central institutes like NTI Bangalore, TRC Madras, LRS Institute Delhi, NICD, AIIH&PH, selected medical colleges as well other institutes of eminence will undertake training for the State/Corporation level officers implementing Revised NTP, trainers from State TB Training and Demonstration Centres, teachers and researchers of the Medical Colleges and other institutes from all over the country.

State TB Demonstration and Training Centres will be adequately strengthened through teaching aids, laboratory equipment and manpower.

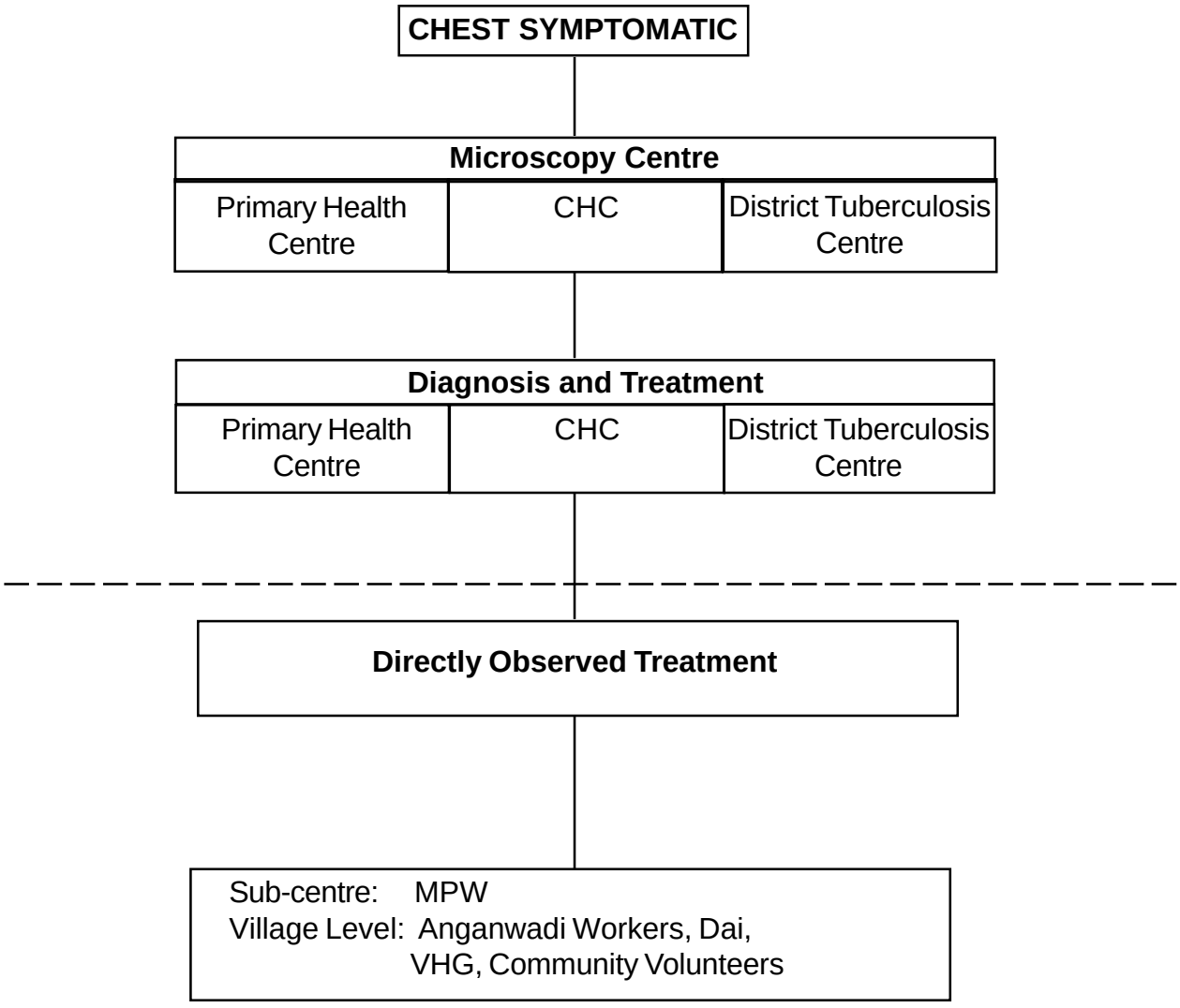
The operational staff to be trained and also the nature of the training they are required to be given, are as under:

Officials to be trained	*Duration of training*	*Methodology*	*Training institute*
State level Officers, DTOs	10 days	Workshop-cum-training using Training Module and Field Exercise	Central/State Training Institute
District Trainers, MO-TC	10 days	Workshop-cum-training using Training Module and Field Exercise	State/District Training Centre
MOs (PHC/CHC/ sub-district)	5 days	Training with Training Module and Field Exercise	State/District Training Centre
Laboratory Technicians	10 days	Training using Training Module/Practical Exercise	State/District Training Centre
STLS	5 days (After 10 day LT)	Training Module/Practical Exercise	Central/State Training Institute
STS, TOs, LHVs	6 days (After 2–3 day MPW)	Training Module/Practical Exercise	State/District Training Centre
MPHS/TB-HVs	3 days	Training Module	CHCs/Block PHC
MPWs	2 days	Training Module	CHCs/Block PHC

Annexures

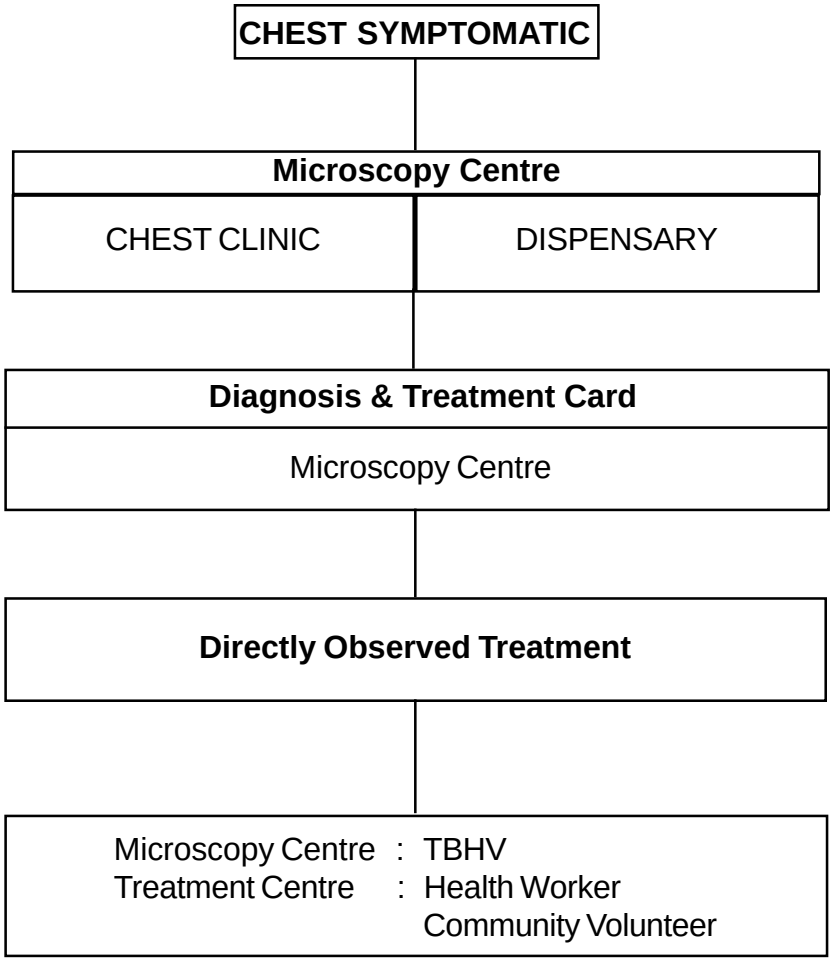
Annexure Ia

GENERAL MODEL



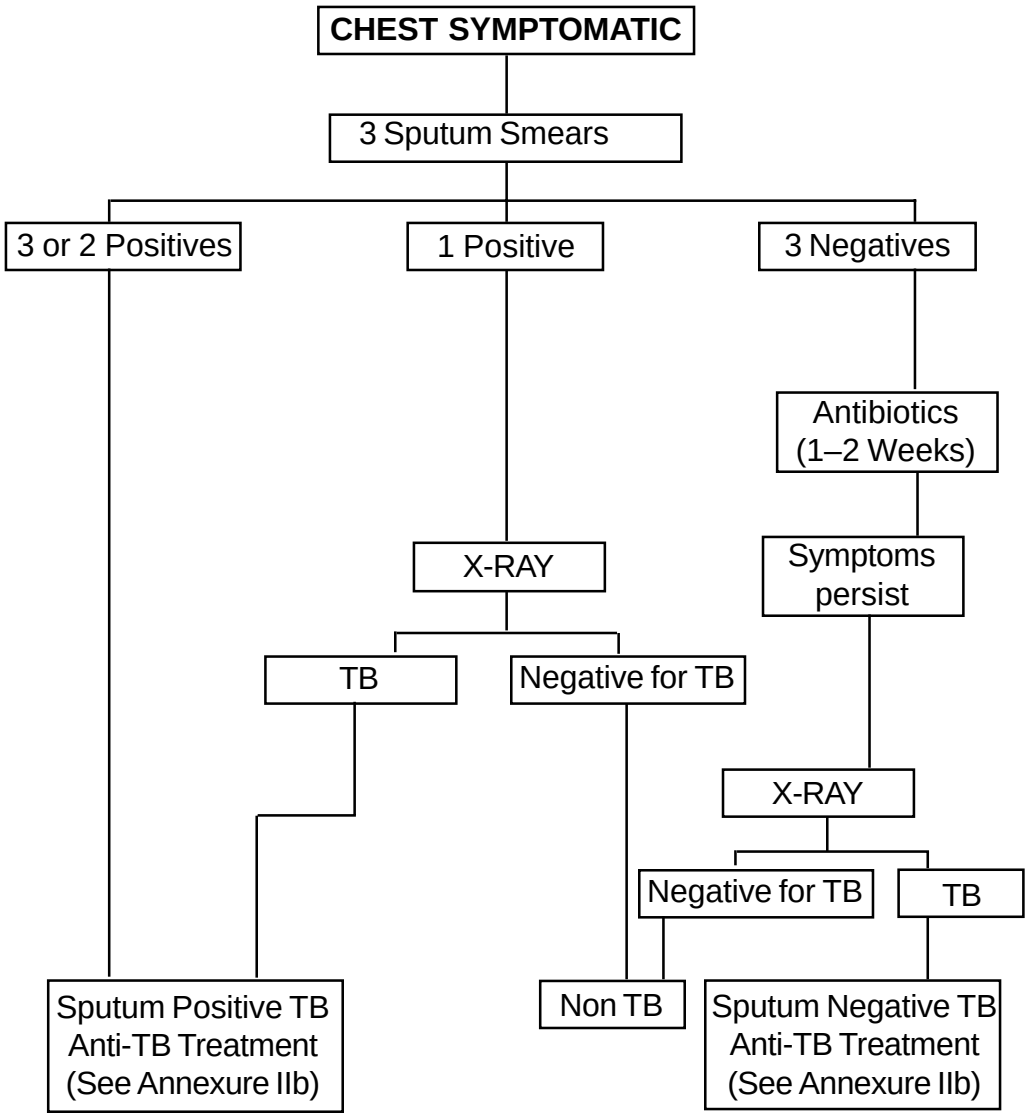
Annexure Ib

SPECIAL MODEL



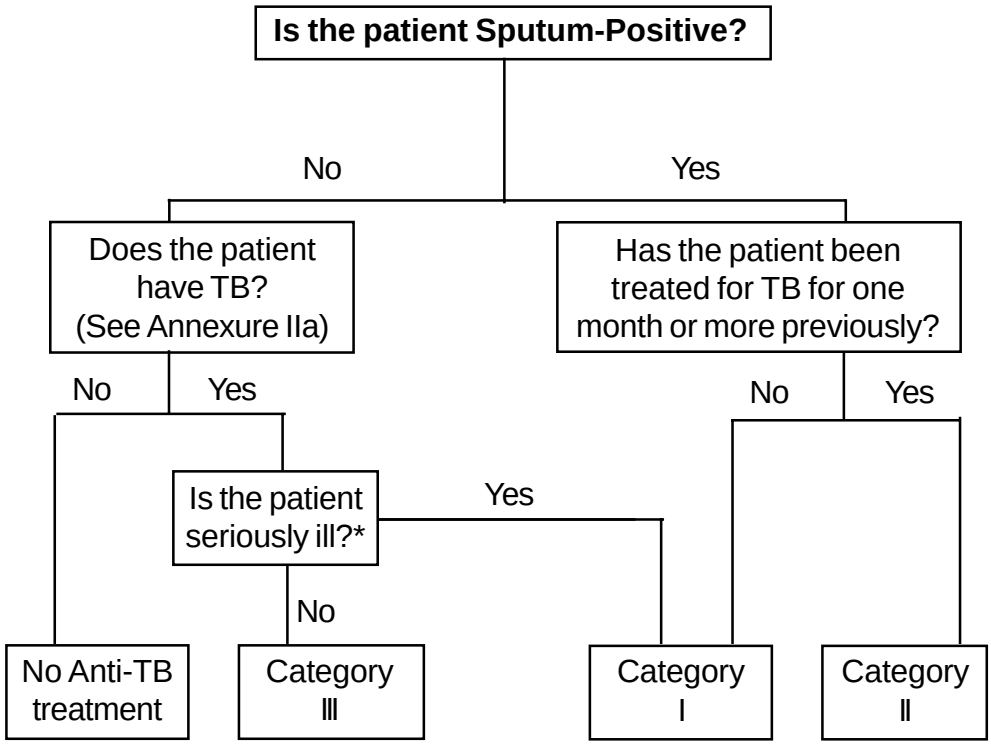
Annexure IIa

DIAGNOSIS AND MANAGEMENT



Annexure IIb

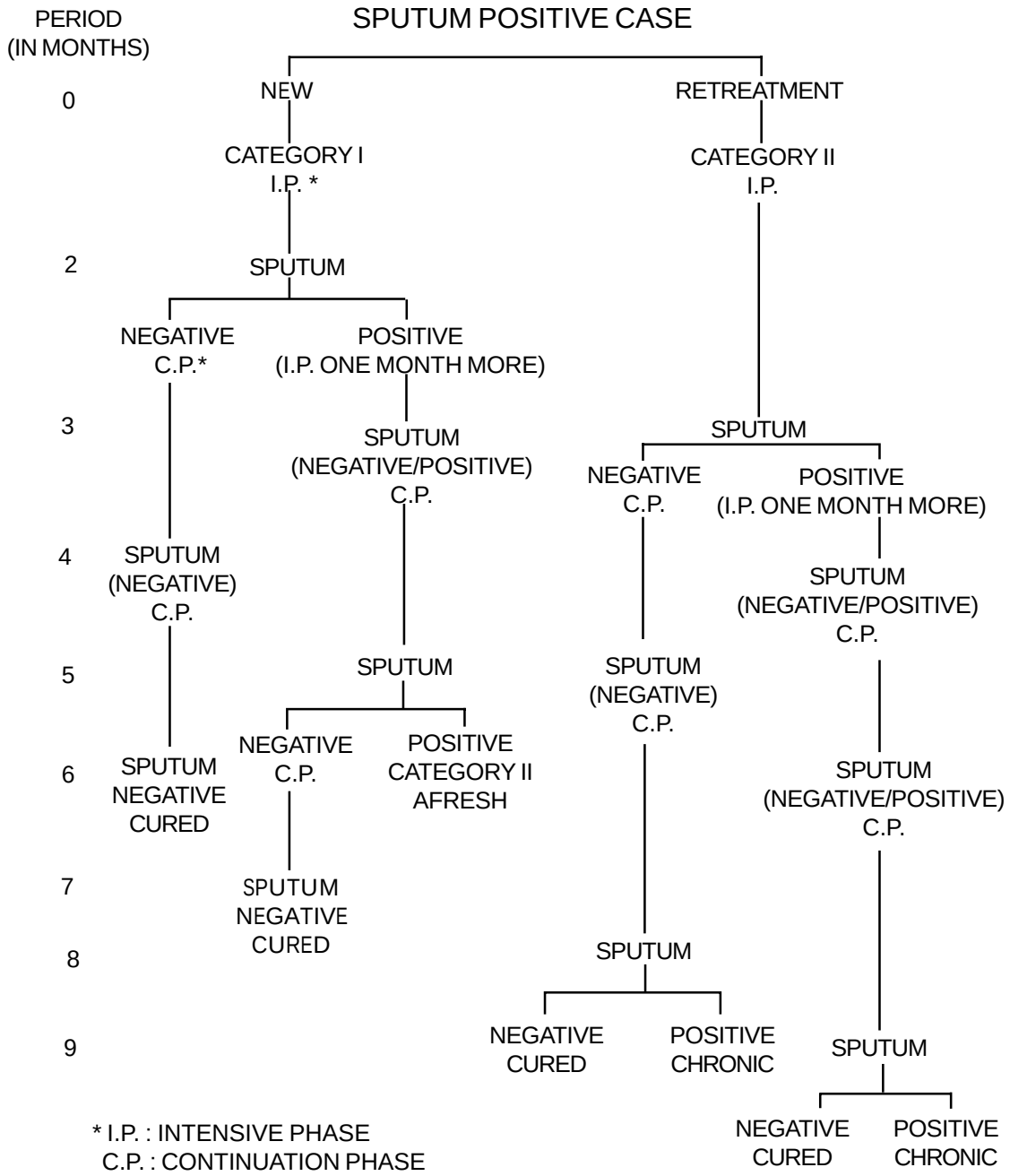
STANDARDISED TREATMENT OF TUBERCULOSIS



*Patients with extrapulmonary TB should receive Category III treatment unless they are seriously ill, in which case they should receive Category I treatment.

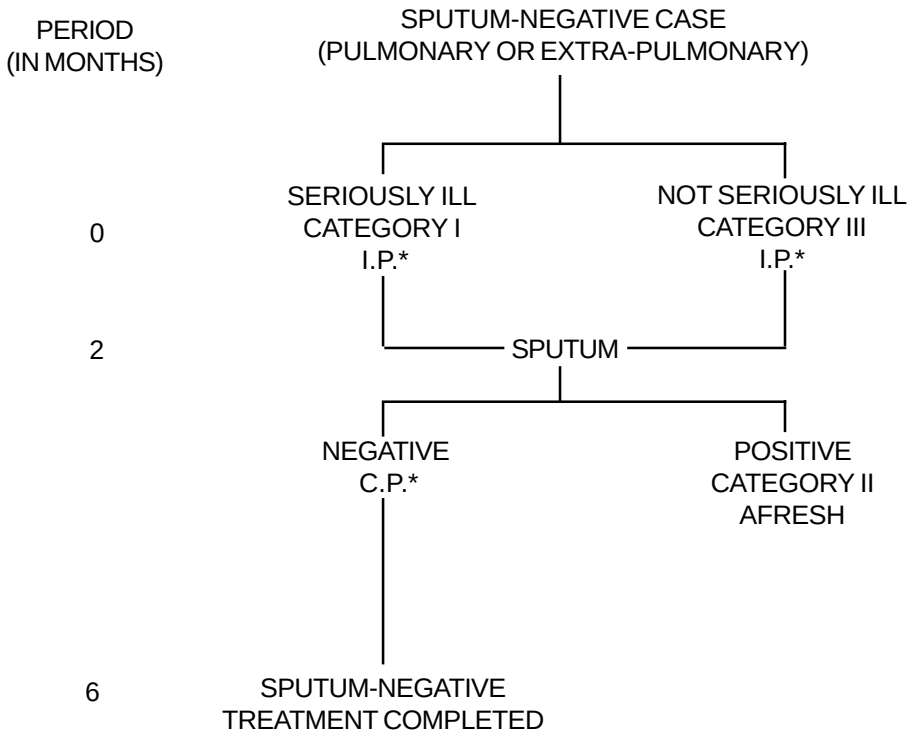
Annexure IIIa

TREATMENT AND FOLLOW-UP OF SMEAR-POSITIVE CASES



Annexure IIIb

TREATMENT AND FOLLOW-UP OF SMEAR-NEGATIVE CASES



* I.P. : INTENSIVE PHASE
C.P. : CONTINUATION PHASE

Annexure IV

FLOW OF PATIENTS

ACTIVITY	RESPONSIBLE SERVICE	RESPONSIBLE STAFF
1. Referral of symptomatic patients	All government health services as well as private physicians and community volunteers.	Health workers attending patients with symptoms. Medical officers and others at peripheral institutions. Private physicians and community volunteers.
2. Diagnosis	Government facility with microscope which has been designated as microscopy centre and is incorporated into laboratory network, including use of Laboratory Register and participation in quality control.	Laboratory technicians and medical officers at peripheral health services. Confirmation of smear-negative cases by designated MO at sub-district, chest clinic, DTC, or major hospital.
3. Directly observed administration of treatment	Most accessible government facility, including subcentres and any other facility providing this service.	Identified and trained health workers, multipurpose health worker or community volunteer.
4. Bacteriological monitoring	Facility providing direct administration of treatment; microscopy centre most accessible to patient.	The health worker responsible for providing treatment ensures the provision of sputa by the patient. Laboratory technician examines sputum.
5. Supervision	Sub-district team or supervisory team at chest clinic for every 500,000 population (Tuberculosis Unit).	The Senior Treatment Supervisor maintains the Treatment Register and is responsible for ensuring that symptomatics are examined, all diagnosed patients are correctly classified and registered, correct regimen is prescribed and is given by direct observation, patients receive regular treatment and results are reported. The Senior Tuberculosis Laboratory Supervisor is responsible for quality assurance of smear examination and correct record keeping in Laboratory Registers.

Annexure V

SUPERVISORY VISITS

Category of supervisor	Methodology of supervision	Number of supervisory visits
DTO/MO (DTC)	**Interview** MO-TC, MO I/C of PHC-CHC, STS, STLS and the person incharge of anti-TB drug storage. **Random interview** of patients and Block PHC area. Proportion of community leaders. **Inspection** of records of the TU, PHC and CHC, and stock of anti-TB drugs and laboratory consumables. **Random checking** of the microscopy centre and sub-centre.	To visit all TUs every month, all CHCs and Block PHCs in the district every quarter, one sub-centre from each Block PHC area and a proportion of tribal sub-centres every quarter.
MO-TC (Tuberculosis Unit)	**Interview** MO I/C BPHC/CHC/ PHC. **Random interview** of patients and community leaders. **Random checking** of the microscopy centre and sub-centre stock of anti-tuberculosis drugs and laboratory consumables.	To visit at least once every quarter all CHCs/BPHCs/PHCs, microscopy centres, and a proportion of sub-centres.
STS	**Interview** MPHS and MPWs at the PHC sub-centre. **Inspect** records, Tuberculosis Treatment Cards and Tuberculosis Laboratory Register. **Random interview** of patients.	To visit all PHCs and CHCs every month and all sub-centres every quarter.
STLS	**Inspect** all microscopy centres and laboratory records.	To visit all microscopy centres in the jurisdiction of the TU at least once a month.

Annexure VI

Technical and Managerial Indicators

Indicator	Value
Case Finding and Case Management	
Proportion of symptomatic patients who are smear-positive	8–12%
No. of smears taken from suspect cases	3
Percent smear-positives among new TB cases	50%
Proportion of new smear-positive patients found in the Laboratory Register being on treatment (in TB Register)	>95%
Proportion of new smear-positive cases placed on DOTS	>90%
Sputum conversion for new smear-positive TB cases at 3 months	>85%
DOT treatment given in initial phase	>90%
Percent of new smear-positive patients who are cured	>85%
Programme management	
TB supervisors and laboratory supervisors in place	>80%
Training activities according to plan	>75%
Registers, reports, etc. in place	100%
Number of supervisory visits done by the Central Unit	Every site at least twice
Number of supervisory visits by the STO	Every site quarterly
Number of supervisory visits by the District TB Officer (in districts)	Each Microscopy Unit quarterly
Adequate drugs and laboratory supplies, with stock at each level	>90%
Complete reports received within the quarter	>95%
Integration	
Process initiated to enhance integration with other programmes and other relevant institutions (NGOs)	

Annexure VII

Revised National Tuberculosis Control Programme
Eligibility Criteria for Districts

Initial Districts

1. District Societies established.

2. State/Corporation strengthened (STO/MO/support staff).

3. All categories of functional staff in position at the District Tuberculosis Centre (DTC) namely the District Tuberculosis Officer/Medical Officer, Laboratory Technician, Statistical Assistant and Treatment Organizer.

4. Additional staff to be recruited have been identified. The number per category should be specified.

5. Sites for Tuberculosis Units and Microscopy Centres identified.

6. Training plan for all categories ready with identification of training centres.

7. State trainers have been trained and visited demonstration areas.

8. Identification of supervisory staff (STS/STLS).

9. Identification of DOT providers.

Starting Service Delivery

1. The following levels of training should have been achieved:
   (a) All key staff at the District and sub-district level.
   (b) 80% of the Medical Officers from the general health services.
   (c) 80% of the Laboratory Technicians from the Microscopy Centres.
   (d) 50% of peripheral health staff (multipurpose health supervisors and multi-purpose workers.

2. Tuberculosis Units established at sub-district level with staff in position.

3. Logistics in place
   (a) Microscopes (may be monocular initially)
   (b) Drugs
   (c) Drug storage area/inventory system
   (d) Registers and formats

4. Key staff of the district and sub-district have visited demonstration sites.

5. At least 50% of the subcentres are ready for DOTS (centres identified, staff in position, etc.).

6. Plan of action for implementation of the strategy for tribal populations has been developed for tribal areas, if they exist in the district.

Criteria for Expansion of RNTCP

1. The proposed districts should fulfil all the criteria for Initial Districts.

2. Achievement in Initial Districts.
   (a) Ratio of sputum-positive/sputum-negative diagnosed cases at least 1:1.2
   (b) Sputum conversion at 3 months in new smear-positives at least 80% on the aggregate for two quarters.
   (c) Case-detection of new smear-positive patients at least 15/lakh population.

REVISED NATIONAL TUBERCULOSIS CONTROL PROGRAMME

Laboratory Form for Sputum Examination

Name of Health Centre: _____ Date: _____

Name of patient: _____ Age: _____ Sex: M ☐ F ☐

Complete address: _____

_____

Patient's TB No.*: _____

Source of specimen: ☐ Pulmonary

☐ Extra-pulmonary Site: _____

Reason for examination: ☐ Diagnosis

☐ Follow-up of chemotherapy*

Specimen Identification No.: _____ Date of sputum collection: _____

Specimen collector's name and signature _____

*Be sure to enter the TB No. for follow-up of patients on chemotherapy.

RESULTS (To be completed in the laboratory)

Lab Serial No: _____

Microscopy

Date	Specimen	Visual appearance (M, B, S)*	Results**	Positive (grading)			
				3+	2+	1+	Scanty
	1						
	2						
	3						

* M=Mucopurulent, B=Blood-stained, S=Saliva

** Write negative or positive

Date: _____ Examined by (signature): _____

The completed form (with results) should be sent to the Health Centre to record the results on the Treatment Card.

5/99

Tuberculosis Identity Card

Front

Revised National Tuberculosis Control Programme

IDENTITY CARD

Name: _____

Complete address: _____

_____

Sex: M ❑ F ❑ Age: _____ TB No: _____

Health Centre: _____

Disease Classification	Treatment started on
❑ Pulmonary ❑ Extra-pulmonary Site: _____	____ ____ ____ Date Month Year

Type of Patient	Category of Treatment
❑ New ❑ Relapse ❑ Transfer in ❑ Other ❑ Treatment after default (specify) _____	❑ Category I ❑ Category II ❑ Category III

Back

Treatment Regimen

Initial Intensive Phase	Continuation Phase
_____	_____
_____	_____
_____	_____
_____	_____

REMEMBER

1. Keep your card safely.
2. You can be cured if you follow your treatment regimen by taking the prescribed drugs as advised.
3. You may infect your near and dear ones if you do not take your medicines as advised.

Appointment dates

_____	_____
_____	_____
_____	_____
_____	_____

Treatment outcome: _____

Signature and stamp of MO:

REVISED NATIONAL TUBERCULOSIS CONTROL PROGRAMME

Treatment Card

State: _____ City/District: _____

Name: _____ Sex: M ❑ F ❑ Age: _____

Complete address: _____

_____

Name and address of Contact Person: _____

_____

Code district/subdistrict: _____

Patient TB No./year: _____

Health Unit: _____

Name of DOT provider: _____

Disease Classification

❑ Pulmonary

❑ Extra-pulmonary

Site: _____

Type of Patient

❑ New ❑ Relapse

❑ Transfer in ❑ Failure

❑ Treatment after default ❑ Other (specify) _____

I. INITIAL INTENSIVE PHASE—Prescribed regimen and dosages:

Tick (✓) the appropriate Category below.

Category I ❑

New case
(pulmonary smear-positive, seriously ill smear-negative, or seriously ill extra-pulmonary)

3 times/week: ☐☐☐☐

H R Z E

Category II ❑

Retreatment
(relapse, failure, treatment after default)

3 times/week: ☐☐☐☐☐

H R Z E S

Category III ❑

New case
(pulmonary smear-negative, not seriously ill; or extra-pulmonary, not seriously ill)

3 times/week: ☐☐☐

H R Z

Write number of tablets or dose of streptomycin in the boxes below.

H: Isoniazid R: Rifampicin Z: Pyrazinamide E: Ethambutol S: Streptomycin

Month	Date	Lab No.	Smear result	Weight
0				
2/3				
4/5/6				
6/7/8/9				

Tick (✓) appropriate date when the drugs have been swallowed under direct observation.

Month / Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

II. CONTINUATION PHASE

(see Guidelines)

II

Prescribed regimen and dosages

Category I ☐	Category II ☐	Category III ☐
New case (pulmonary smear-positive, seriously ill smear-negative, or seriously ill extra-pulmonary)	Retreatment (relapse, failure, treatment after default)	New case (pulmonary smear-negative, not seriously ill; or extra-pulmonary, not seriously ill)

Write number of tablets per dose in the boxes below.

3 times/week	3 times/week	3 times/week
H R	H R E	H R

Enter 'X' on date when the first dose of drugs has been swallowed under direct observation and draw a horizontal line (X ——→) to indicate the period during which medicines will be self-administered.

Month / Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

Remarks:

REVISED NATIONAL TUBERCULOSIS CONTROL PROGRAMME — NON-DOTS TREATMENT IN DOTS AREAS I

Treatment Card

State: _____ City/District: _____ Code district: _____

Name: _____ Patient TB No./year: _____

Complete address: _____ Health Unit: _____

Sex: M ☐ F ☐ Age: _____

Name and address of Contact Person: _____

_____

Disease Classification
- ☐ Pulmonary
- ☐ Extra-pulmonary
  Site: _____

Type of Patient
- ☐ New
- ☐ Relapse
- ☐ Transfer in
- ☐ Failure
- ☐ Treatment after default
- ☐ Other (specify) _____

I. INITIAL INTENSIVE PHASE—Prescribed regimen and dosages:

Tick (✓) the appropriate Regimen below.

- ☐ Regimen 1 [2HSE 10HE or 2HST 10HT]
- ☐ Regimen 2 [12HE or 12HT]

H: Isoniazid E: Ethambutol S: Streptomycin T: Thiacetazone

Month	Date	Lab No.	Smear result	Weight
0				
2				
5				
12				

Write C on date when the drugs were collected by the patient and draw a horizontal line (C——) to indicate the period for which medications were supplied for self-administration.

Month / Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

II. CONTINUATION PHASE

(see Guidelines)

II

☐ Regimen 1 [2HSE 10HE or 2HST 10HT]

☐ Regimen 2 [12HE or 12HT]

Write C on date when the drugs were collected by the patient and draw a horizontal line (C——) to indicate the period for which medications were supplied for self-administration.

Month / Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

Remarks:

5/00

REVISED NATIONAL TUBERCULOSIS CONTROL PROGRAMME

Transfer Form

(Fill in triplicate with carbon paper between the sheets. Send one copy to the Unit where the patient is referred, give one copy to the patient and retain one copy for records.)

Name of Transferring Unit: _____

Name of Unit to which patient is transferred (if known): _____

Name of patient: _____ Age: _____ Sex: M ☐ F ☐

Complete address: _____

_____

TB No.: _____ Date of starting treatment: _____

Disease Classification

☐ Pulmonary

☐ Extra-pulmonary

Site: _____

Category of Treatment

☐ Category I

☐ Category II

☐ Category III

Type of Patient

☐ New ☐ Relapse

☐ Transfer in ☐ Treatment after default

☐ Other (specify) _____

Most Recent Sputum Status

Date _____ Month _____ Year _____

☐ Positive ☐ Negative

Drugs the patient is receiving: _____

Remarks: _____

_____ Signature: _____

Date transferred _____ Designation: _____

For use by the District where the patient's treatment ended. Date of outcome: _____

Name of patient: _____

Old TB No.(given at transferring unit): _____ New TB No. (given at receiving unit): _____

Treatment outcome: ☐ Cured ☐ Treatment completed ☐ Died ☐ Failure ☐ Defaulted ☐ Transferred

Date: _____ Signature: _____

(At the end of treatment send this form to the TB Unit where the patient was registered.)

For use by the TB Unit where the patient has been transferred.

Name of patient: _____

Old TB No.(given at transferring unit): _____ New TB No. (given at receiving unit): _____

Age: _____ Sex: M ☐ F ☐ Date of transfer: _____

Name of TB Unit: _____ Area: _____

The above-named reported at this TB Unit on: _____

Signature: _____ Designation: _____ Date: _____

(Send this part back to the Transferring Unit as soon as the patient has reported and has been registered.)

REVISED NATIONAL TUBERCULOSIS CONTROL PROGRAMME

Mycobacteriology Culture/Sensitivity Test Form

(1) Name of *referring* Unit: _____ Name of Laboratory: _____

Send results to (address): _____

_____

Months of treatment taken: _____

Name of patient: _____ Patient's TB No.: _____

(PLEASE TICK)

(2) ☐ Category I (new case: pulmonary smear-positive, seriously ill smear-negative, or seriously ill extra-pulmonary)

☐ Category II (retreatment: relapse, failure, treatment after default)

☐ Category III (new case: pulmonary smear-negative, not seriously ill; or extra-pulmonary, not seriously ill)

☐ Other regimen (specify): _____

TREATMENT GIVEN	From date	To date
(H) Isoniazid		
(R) Rifampicin		
(Z) Pyrazinamide		
(E) Ethambutol		
(S) Streptomycin		
Other		

Date: _____ Medical Officer's name: _____

Prior sensitivity results and dates if known: _____

(3) Source of specimen if not sputum (specify): _____

Date of collection | | | | | 2 | 0 | | | (d d m m)

(4) **FOR LAB USE ONLY** Lab Serial No.: _____

Smear ☐ Positive (Grade: ☐ 3+ ☐ 2+ ☐ 1+ ☐ Scanty) ☐ Negative

Culture ☐ Positive ☐ Negative ☐ Contaminated ☐ Other

(5) **SENSITIVITY TESTS**

Drug	Sensitive	Resistant	Comments
(H) Isoniazid			
(R) Rifampicin			
(Z) Pyrazinamide			
(E) Ethambutol			
(S) Streptomycin			

Date: _____ Signature: _____

REVISED NATIONAL TUBERCULOSIS CONTROL PROGRAMME

Laboratory Register

Year _____

Lab Serial No.	Date	Name (in full)	Sex M / F	Age	Complete address (for new patients)	Name of Referring Health Centre	Reason for Examination*		Results			Signature	Remarks
							Diagnosis	Follow-up	1	2	3		

* If sputum is for diagnosis, put a tick (✓) mark in the space under "Diagnosis".
If sputum is for follow-up of patients on treatment, write the patient's TB No. in the space under "Follow-up".

REVISED NATIONAL TUBERCULOSIS CONTROL PROGRAMME

I

Tuberculosis Register

Quarter: _____ Year: _____

TB No.	Date of registration	Name (in full)	Sex M / F	Age	Complete address	Name of Treatment Centre	Date of starting treatment	Regimen/ Category	Disease class Pulm./ xpulm. /PEPI	Type of Patient					
										New case (N)	Relapse (R)	Trans-fer in (T)	Failure (F)	Treat-ment after default (D)	Other (O)

SUMMARY — RNTCP							
New smear-positive		Relapse		Smear-negative		Extra-pulmonary	
M	F	M	F	M	F	M	F

SUMMARY — Non-RNTCP							
New smear-positive		Relapse		Smear-negative		Extra-pulmonary	
M	F	M	F	M	F	M	F

REVISED NATIONAL TUBERCULOSIS CONTROL PROGRAMME

Tuberculosis Register

Sputum examination								Date when treatment was stopped						Remarks
Pretreatment		End of I.P.*		2 months in C.P.**		End of treatment		Cured	Treatment completed	Died	Failure	Defaulted	Transferred out	
Smear	Lab No.	Smear	Lab No.	Smear	Lab No.	Smear	Lab No.							

* I.P. Intensive Phase
** C.P. Continuation Phase

ANTOPAYMENTS

Type of patient	Cured	Treatment completed	Died	Failure	Defaulted	Transferred
New smear-positive						
New smear-negative						
New extra-pulmonary						
Relapse (smear-positive)						
Failure (smear-positive)						
Treatment After Default (smear-positive)						
Others treated with CAT II						

DEFINITIONS: THE REVISED NATIONAL TUBERCULOSIS CONTROL PROGRAMME

CASE DEFINITIONS

Pulmonary tuberculosis, Smear-positive

TB in a patient with at least 2 initial sputum smear examinations (direct smear microscopy) positive for AFB,

Or: TB in a patient with one sputum examination positive for AFB and radiographic abnormalities consistent with active pulmonary TB as determined by the treating MO,

Or: TB in a patient with one sputum specimen positive for AFB and culture positive for *M. tb.*

Pulmonary tuberculosis, Smear-negative

TB in a patient with symptoms suggestive of TB with at least 3 sputum examinations negative for AFB, and radiographic abnormalities consistent with active pulmonary TB as determined by a MO, followed by a decision to treat the patient with a full course of anti-tuberculosis therapy,

Or: Diagnosis based on positive culture but negative AFB sputum examinations.

Extra-pulmonary tuberculosis

TB of organs other than the lungs, such as the pleura (TB pleurisy), lymph nodes, abdomen, genito-urinary tract, skin, joints and bones, tubercular meningitis, tuberculoma of the brain, etc.

Diagnosis should be based on one culture-positive specimen from the extra-pulmonary site, or histological evidence, or strong clinical evidence consistent with active extra-pulmonary TB followed by a MO's decision to treat with a full course of anti-TB therapy.

Pleurisy is classified as extra-pulmonary TB.

A patient diagnosed with both pulmonary and extra-pulmonary TB should be classified as pulmonary TB.

TYPES OF CASES

New

A patient who has never had treatment for tuberculosis or has taken anti-tuberculosis drugs for less than one month.

Relapse

A patient declared cured of TB by a physician, but who reports back to the health service and is found to be bacteriologically positive.

Transferred in

A patient who has been received into a Tuberculosis Unit/District, after starting treatment in another unit where he has been recorded.

Treatment After Default

A patient who received anti-tuberculosis treatment for one month or more from any source and who returns to treatment after having defaulted, i.e. not taken anti-TB drugs consecutively for two months or more.

Failure

A smear-positive patient who is smear-positive at 5 months or more after starting treatment. Failure also includes a patient who was initially smear-negative but who becomes smear-positive during treatment.

Chronic

A patient who remains smear-positive after completing a retreatment regimen.

"Other"

Patients who do not fit into the above-mentioned categories. Reasons for putting a patient in this category must be specified.

TREATMENT OUTCOMES

Cured

Initially smear-positive patient who has completed treatment *and* had negative sputum smears, on at least two occasions, one of which was at completion of treatment.

Treatment completed

Sputum smear-positive case who has completed treatment, with negative smears at the end of the initial phase but none at the end of treatment.

Or: Sputum smear-negative TB patient who has received a full course of treatment and has not become smear-positive during or at the end of treatment.

Or: Extra-pulmonary TB patient who has received a full course of treatment and has not become smear-positive during or at the end of treatment.

Died

Patient who died during treatment, regardless of cause.

Failure

Smear-positive case who is smear-positive at 5 months or more after starting treatment. Also, a patient who was initially smear-negative but who became smear-positive during treatment.

Defaulted

A patient who, at any time after registration, has not taken anti-TB drugs for 2 months or more consecutively.

Transferred out

A patient who has been transferred to another Tuberculosis Unit/District and his/her treatment results are not known.

REVISED NATIONAL TUBERCULOSIS CONTROL PROGRAMME

Quarterly Report on New and Retreatment Cases of Tuberculosis

Patients registered during _____ quarter* of 20____

Name of area _____ No.# _____

Name of Reporter: _____

Signature: _____

Date of completion of this form

d	d	m	m	2	0		

Block 1: All patients registered in the quarter

Pulmonary tuberculosis							Extra-pulmonary tuberculosis		Total		
Smear-positive					Smear-negative						
New cases (1)			Relapses (2)		(3)		(4)		(5)		
M	F	Total	M	F	M	F	M	F	M	F	Total

Block 2: Smear-positive New cases only: from Column (1) above

Age-group (years)													Total		
0–14		15–24		25–34		35–44		45–54		55–64		65 and above				
M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	Total

Block 3: All patients started on treatment

Type of patient	Category I		Category II		Category III		Total RNTCP
	smear-positive	smear-negative extra-pulmonary	smear-positive	smear-negative	smear-negative	extra-pulmonary	
New							
Relapses							
Failures							
Treatment After Default							
Others							
Total							

* Note: Quarters: 1st quarter January, February, March; 2nd quarter April, May, June, 3rd quarter July, August, September; 4th quarter October, November, December

How to fill in the form

Block 1: New cases and relapses of tuberculosis registered during_____ quarter of (year)_____ *(Fill in the quarter and the year.)*

Column (1):	Smear-positive new cases		Patients with sputum smear-positive pulmonary tuberculosis who have never recieved anti-tuberculosis treatment or have recieved treatment for less than 4 weeks.
Column (2):	Smear-positive relapses		Patients with sputum smear-positive pulmonary tuberculosis who were declared cured by a Medical Officer but have now got the disease.
Column (3):	Smear-negative cases		Patients with pulmonary tuberculosis with 3 sputum samples negative for AFB, in whom the diagnosis of tuberculosis was made by means other than sputum micrscopy.
Column (4):	Extra-pulmonary tuberculosis		Patients with tuberculosis of organs other than the lungs.
Column (5):	Total	Males	Add all male patients in columns 1+2+3+4
		Females	Add all female patients in columns 1+2+3+4
		Total	Add all patients (males+females) in columns 1+2+3+4

Block 2: Smear-positive new cases: from Column (1) above.

In this block enter the patients already recorded in Block 1, Column (1) according to their sex and age group. If the exact age of the patient is not known at the time of his/her registration it should be estimated to the nearest 5 years (e.g. 15, 20, 25, etc.).

Block 3: This gives category-wise break up of treatment regimens for new patients (both smear-positive and smear-negative), relapses, failures, return to treatment after default (TAD), and patients who are classified as Others.

REVISED NATIONAL TUBERCULOSIS CONTROL PROGRAMME

Quarterly Report of Sputum Conversion of New Cases, Relapses and Failures

Patients registered during _____ quarter of 20_____

Name of area: _____

No._____

Name of Reporter: _____ Signature: _____

Date of completion of this form: | | | | | 2 | 0 | | |

d d m m

Complete this proforma for sputum smear-positive patients. The total number should be the same as in the Quarterly Report on New and Retreatment Cases of Tuberculosis.

Total number of new sputum-positive patients	Sputum at 2 months			Sputum at 3 months		
	Negative	Positive	N.A.	Negative	Positive	N.A.

Total number of smear-positive relapse patients	Sputum at 3 months		
	Negative	Positive	N.A.

Total number of smear-positive failure patients	Sputum at 3 months		
	Negative	Positive	N.A.

N.A. – Not available; sputum examination was not done.

REVISED NATIONAL TUBERCULOSIS CONTROL PROGRAMME

Quarterly Report on the Results of Treatment of Tuberculosis Patients Registered 12–15 Months Earlier

Name of area: _____ No: _____ Date of completion of this form: _____ 20 ____	Patients registered during _____ quarter of ____	Name of Reporter*: _____ Signature: _____

Patients reported during quarter**	Type of patient	Cured (1)	Treatment completed (2)	Died (3)	Failure (4)	Defaulted (5)	Transferred to another district (6)	Total number evaluated (sum of columns 1 to 6)
	NEW CASES Smear-positive							
	Smear-negative							
	Extra-pulmonary							
	Total							
	RETREATMENT CASES Smear-positive relapses							
	Smear-positive failures							
	Smear-positive Treatment After Default							
	Others treated with Category II							
	Total Category II							

* The Reporter is the Medical Officer responsible, not the person completing this form. This form includes patients on Category I, Category II and Category III treatment, both smear-positive and smear-negative. These totals should match those of the Quarterly Report on New and Retreatment cases for the quarter.

** Of these, _____ (number) were excluded from evaluation of chemotherapy for the following reasons:

REVISED NATIONAL TUBERCULOSIS CONTROL PROGRAMME

Monthly Report on Logistics and Microscopy

Peripheral Health Institution Level

Name of Peripheral Health Institution: _____

Month: _____ Year: _____

Medications

Item	Stock on first day of month	Stock received during month	Patients started on treatment during month	Stock on last day of month	Quantity requested
Category I patient-wise box					
Category II patient-wise box					
Category III patient-wise box					

Item	Stock on first day of month	Stock received during month	Consumption during month	Stock on last day of month	Quantity requested
Pouches for prolongation of the intensive phase					
INH 300 mg tablets					
INH 100 mg tablets					
Streptomycin 0.75 g vials					
Rifampicin 150 mg capsules					
Pyrazinamide 500 mg tablets					
Ethambutol 800 mg tablets					

Staff Position and Training

Category of staff	Sanctioned	In place	Trained in RNTCP
Medical Officer			
Laboratory Technician			
Pharmacist			
Multipurpose Health Worker			
Other			

The section below is to be completed by Microscopy Centres only

Consumables

Item	Stock on first day of month	Stock received during month	Consumption during month	Stock on last day of month	Quantity requested
Sputum containers (numbers)					
Slides (numbers)					
Carbol fuchsin (litres)					
Methylene blue (litres)					
Sulphuric acid (litres)					
Phenol (grams)					
Xylene (litres)					
Immersion oil (litres)					
Methylated spirit (litres) (if supplied)					

Microscopy Activities

(a)	Number of new adult outpatient visits in health facilities	
(b)	Out of (a), number of chest symptomatic **patients** whose sputum was examined for diagnosis	
(c)	Out of (b), number of smear-positive **patients** diagnosed	

Treatment initiation

(d)	Of the smear-positive patients diagnosed (c), the number who reside within the district	
(e)	Of the smear-positive patients diagnosed who reside within the district (d), number put on DOTS	
(f)	Of the smear-positive patients diagnosed who reside within the district (d), number put on treatment other than DOTS	
	Of these patients (f), number who were new smear-positive	

Number of **smear-negative** patients residing within the district put on treatment other than DOTS	
Number of **extra-pulmonary** patients residing within the district put on treatment other than DOTS	

Equipment

Item	Number	In working condition	Not in working condition
Monocular microscopes			
Binocular microscopes			

Name of officer reporting (in Capital Letters): _____

Signature: _____ Date: _____

REVISED NATIONAL TUBERCULOSIS CONTROL PROGRAMME

Quarterly Report on Programme Management and Logistics

Tuberculosis Unit (Subdistrict) Level (including Tuberculosis Unit at DTC)

Name of TB Unit: _____ Quarter: _____ Year: _____

The following reports are enclosed (Tick [✓] to indicate that report is enclosed)

- ☐ Quarterly Report on Case-Finding
- ☐ Quarterly Report on Sputum Conversion
- ☐ Quarterly Report on Treatment Outcomes

If any report is not enclosed, give reason: _____

Supervisory Activities

Type of Facility	Number in TU	Number of these visited at least once
BPHC		
CHC		
PHC		
Government Hospital		
TB Hospital/Sanitorium		
Microscopy Centre		
Treatment Centre		
Patient's Home		
Other: _____		

Microscopy Activities

(a)	Number of new adult outpatient visits in health facilities	
(b)	Out of (a), number of chest symptomatic **patients** whose sputum was examined for diagnosis	
(c)	Out of (b), number of **smear-positive patients** diagnosed	

Treatment Initiation

(d)	Of the smear-positive patients diagnosed (c), the number who reside within the district	
(e)	Of the smear-positive patients diagnosed who reside within the district (d), number put on DOTS	
(f)	Of the smear-positive patients diagnosed who reside within the district (d), number put on treatment other than DOTS	
	Of these patients (f), number who were new smear-positive	

Number of **smear-negative** patients residing within the district put on treatment other than DOTS	
Number of **extra-pulmonary** patients residing within the district put on treatment other than DOTS	

Laboratory Quality Control Network

Initial reading	Number of slides checked	Supervisor reading		Percentage of Discordance
		Number of positives	Number of negatives	
Postive slides		(a)	(b)	(b/[a+b]) *[false positives]*
Negative slides		(c)	(d)	(c/[c+d]) *[false negatives]*

Staff Position and Training
(Tick [✓] if in place or not during quarter)

Designated Medical Officer-TB ❑ Yes ❑ No Trained in RNTCP ❑ Yes ❑ No
Senior Treatment Supervisor (STS) ❑ Yes ❑ No Trained in RNTCP ❑ Yes ❑ No
Senior Tuberculosis Laboratory Supervisor (STLS) ❑ Yes ❑ No Trained in RNTCP ❑ Yes ❑ No

Category of staff	Sanctioned	In place	Trained in RNTCP in past quarter	Total trained in RNTCP
Medical Officer				
Microscopist				
Lady Health Visitor/Staff Nurse/ Health Assistant/ Multipurpose Health Supervisor				
Multipurpose Health Worker/ TB Health Visitor				
Anganwadi Worker				
Trained Dai				
Community Volunteer				

Medications

Item	Stock on first day of quarter	Stock received during quarter	Patients started on treatment during quarter	Stock on last day of quarter	Quantity requested
Category I patient-wise box					
Category II patient-wise box					
Category III patient-wise box					

Item	Stock on first day of quarter	Stock received during quarter	Consumption during quarter	Stock on last day of quarter	Quantity requested
Pouches for prolongation of the intensive phase					
INH 300 mg tablets					
INH 100 mg tablets					
Streptomycin 0.75 g vials					
Rifampicin 150 mg capsules					
Pyrazinamide 500 mg tablets					
Ethambutol 800 mg tablets					

Consumables

Item	Stock on first day of quarter	Stock received during quarter	Consumption during quarter	Stock on last day of quarter	Quantity requested
Sputum containers (numbers)					
Slides (numbers)					
Carbol fuchsin (litres)					
Methylene blue (litres)					
Sulphuric acid (litres)					
Phenol (grams)					
Xylene (litres)					
Immersion oil (litres)					
Methylated spirit (litres) (if supplied)					

Equipment

Item	Number	In working condition	Not in working condition
Monocular microscopes			
Binocular microscopes			

Name of officer reporting (in Capital Letters): _____

Signature: _____

Date: _____

REVISED NATIONAL TUBERCULOSIS CONTROL PROGRAMME

Quarterly Report on Programme Management and Logistics

District Level

Name of the District:_____ Quarter:_____

Number of Tuberculosis Units planned in the District: _____ Year:_____

Number of Tuberculosis Units operational in the District: _____

Total population of the District: _____

Population of the District covered by the RNTCP: _____

The following reports are enclosed (Tick [✓] to indicate that report is enclosed)

- ☐ Quarterly Report on Case-Finding (number of TB Units reporting*: _____)
- ☐ Quarterly Report on Sputum Conversion (number of TB Units reporting*: _____)
- ☐ Quarterly Report on Treatment Outcomes (number of TB Units reporting*: _____)

* If any TB Unit did not report, list name(s) and report(s): _____

_____

Supervisory Activities by the Staff of the DTC

Type of Unit	Number in the District	Number participating in the RNTCP	Number of these visited during quarter
TB Unit			
Government Hospital			
Sanitorium/TB Hospital			
PHC			
CHC			
BPHC			
Microscopy Centre			
Treatment Centre			
Patient's Home			
Other:_____			

Microscopy Activities (all Tuberculosis Units including the DTC)

(a)	Number of new adult outpatient visits in health facilities	
(b)	Out of (a), number of chest symptomatic **patients** whose sputum was examined for diagnosis	
(c)	Out of (b), number of smear-positive **patients** diagnosed	

Treatment Initiation (all Tuberculosis Units including the DTC)

(d)	Of the smear-positive patients diagnosed (c), the number who reside within the district	
(e)	Of the smear-positive patients diagnosed who reside within the district (d), number put on DOTS	
(f)	Of the smear-positive patients diagnosed who reside within the district (d), number put on treatment other than DOTS	
	Of these patients (f), number who were **new** smear-positive	

Number of **smear-negative** patients residing within the district put on treatment other than DOTS	
Number of **extra-pulmonary** patients residing within the district put on treatment other than DOTS	

Activities of Community Volunteers

Number of Community Volunteers engaged during quarter: _____

Number of Community Volunteers paid during quarter: _____

Total amount paid to Community Volunteers during quarter: Rs _____

A copy of this page should also be sent directly to the Director, State TB Training and Demonstration Centre (STDC) of your State

Laboratory Quality Control Network All Tuberculosis Units Combined (including DTC)

Initial reading	Number of slides checked	Supervisor reading		Percentage of Discordance
		Number of positives	Number of negatives	
Positive slides		(a)	(b)	(b/[a+b]) [*false positives*]
Negative slides		(c)	(d)	(c/[c+d]) [*false negatives*]

Staff Position and Training
(Tick (✓) if in place or not during quarter)

District Tuberculosis Officer in place ☐ Yes ☐ No Trained in RNTCP ☐ Yes ☐ No

Statistical Assistant in place ☐ Yes ☐ No Trained in RNTCP ☐ Yes ☐ No

Treatment Organizer in place ☐ Yes ☐ No Trained in RNTCP ☐ Yes ☐ No

Laboratory Technician in place ☐ Yes ☐ No Trained in RNTCP ☐ Yes ☐ No

Indicate numbers at all Tuberculosis Units and DTC combined

Category of staff	Sanctioned	In place	Trained in RNTCP in past quarter	Total trained in RNTCP
Medical Officer of the DTC				
Designated Medical Officer (TB) of the TB Unit				
Senior Treatment Supervisor (STS)				
Senior Tuberculosis Laboratory Supervisor (STLS)				
Laboratory Technician/ Microscopist				
Treatment Organizer				
Medical Officer (at BPHC/CHC/PHC/other)				
Pharmacist				
Lady Health Visitor				
Staff Nurse				
Health Assistant				
Multipurpose Health Supervisor				
Multipurpose Health Worker or equivalent				
TB Health Visitor				
Anganwadi Worker				
Trained Dai				
Community Volunteer	Not Applicable			

Medications

Item	Stock on first day of quarter	Stock received during quarter	Patients started on treatment during quarter	Stock on last day of quarter	Quantity requested
Category I patient-wise box					
Category II patient-wise box					
Category III patient-wise box					

Item	Stock on first day of quarter	Stock received during quarter	Consumption during quarter	Stock on last day of quarter	Quantity requested
Pouches for prolongation of the intensive phase					
INH 300 mg tablets					
INH 100 mg tablets					
Streptomycin 0.75 g vials					
Rifampicin 150 mg capsules					
Pyrazinamide 500 mg tablets					
Ethambutol 800 mg tablets					

Consumables

Item	Stock on first day of quarter	Stock received during quarter	Consumption during quarter	Stock on last day of quarter	Amount to be obtained
Sputum containers (numbers)					
Slides (numbers)					
Carbol fuchsin (grams)					
Methylene blue (grams)					
Sulphuric acid (litres)					
Phenol (grams)					
Xylene (litres)					
Immersion oil (litres)					
Methylated spirit (litres)					
X-ray film (rolls)					

Equipment in place

Item	Number	In working condition	Not in working condition
Monocular microscopes			
Binocular microscopes			
X-ray machine			
Photocopier			
Computer			
Air conditioner for drug storage area			
Overhead projector			
Jeep			
Two-/three-wheeler			

Name of officer reporting (in Capital Letters): _____

Signature: _____

Date: _____

REVISED NATIONAL TUBERCULOSIS CONTROL PROGRAMME

Quarterly Report on Programme Management

State Level

Name of State: _____ Quarter: _____

Year: _____

Number of Districts in the State: _____

Number of Districts in the State participating in RNTCP: _____

Total population of RNTCP Districts: _____

Population covered by RNTCP: _____

The following reports are enclosed (Tick [✓] to indicate that report is enclosed)

- ☐ Quarterly Report on Case-Finding (number of Districts reporting*: _____)
- ☐ Quarterly Report on Sputum Conversion (number of Districts reporting*: _____)
- ☐ Quarterly Report on Treatment Outcomes (number of Districts reporting*: _____)

*If any district did not submit all reports, list names of District(s) and report(s): _____

_____

Supervisory Activities by the State

Number of Districts participating in RNTCP	Number of Districts in the RNTCP visited during quarter	Name of Districts not visited (if any) and reason

Microscopy Activities (all Districts combined)

(a)	Number of new adult outpatient visits in health facilities	
(b)	Out of (a), number of chest symptomatic **patients** whose sputum was examined for diagnosis	
(c)	Out of (b), number of smear-positive **patients** diagnosed	

Treatment Initiation (all Districts combined)

(d)	Of the smear-positive patients diagnosed (c), the number who reside within the district	
(e)	Of the smear-positive patients diagnosed who reside within the district (d), number put on DOTS	
(f)	Of the smear-positive patients diagnosed who reside within the district (d), number put on treatment other than DOTS	
	Of these patients (f), number who were new smear-positive	

Number of **smear-negative** patients put on treatment other than DOTS	
Number of **extra-pulmonary** patients put on treatment other than DOTS	

Laboratory Quality Control Network

All Districts Combined

Initial reading	Number of slides checked	Supervisor reading		Percentage of Discordance
		Number of positives	Number of negatives	
Positive slides		(a)	(b)	(b/[a+b]) [false positives]
Negative slides		(c)	(d)	(c/[c+d]) [false negatives]

State Level Only

Initial reading	Number of slides checked	State level reading		Percentage of Discordance
		Number of positives	Number of negatives	
Positive slides		(a)	(b)	(b/[a+b]) [false positives]
Negative slides		(c)	(d)	(c/[c+d]) [false negatives]

Staff Position and Training during quarter (*training conducted by the STC/STDC or equivalent only*)

Full-time State Tuberculosis Officer in place ☐ Yes ☐ No Trained in RNTCP ☐ Yes ☐ No

Medical Officer State Headquarter in place ☐ Yes ☐ No Trained in RNTCP ☐ Yes ☐ No

Full-time Director, STDC ☐ Yes ☐ No Trained in RNTCP ☐ Yes ☐ No

Medical Officer, STDC ☐ Yes (No.___) ☐ No Trained in RNTCP ☐ Yes (No. ___) ☐ No

Category of staff	Sanctioned	In place	Trained in RNTCP in District or elsewhere in past quarter	Trained in RNTCP at STDC in past quarter	Total trained in RNTCP
District Tuberculosis Officer					
Medical Officer of the DTC					
Designated Medical Officer—TB/TB Unit					
Senior Treatment Supervisor (STS)					
Senior Tuberculosis Laboratory Supervisor (STLS)					
Laboratory Technician/ Microscopist					
Treatment Organizer					
Medical Officer (subdistrict/CHC/PHC/other)					
Pharmacist					
Lady Health Visitor					
Staff Nurse					
Health Assistant					
Multipurpose Health Supervisor					
Multipurpose Health Worker					
TB Health Visitor					
Anganwadi Worker					
Trained Dai					
Community Volunteer					

Equipment at State Headquarter and STDC

Item	Number	In working condition	Not in working condition
Binocular microscopes			
X-ray machine			
Fluorescent microscope			
Culture facility			
Sensitivity testing facility			
Photocopier			
Computer			
Facsimile machine			
Typewriter			
Air conditioners			
Overhead projector			
Minibus			
Jeep			
Two-/three-wheeler			

Name of officer reporting (in Capital Letters): _____

Signature: _____

Date: _____

Abbreviations Used

AFB	Acid-Fast Bacillus
AIDS	Acquired Immunodeficiency Syndrome
ANM	Ancillary Nurse Midwife
ARI	Annual risk of tuberculosis infection
BCG	Bacille Calmette-Guerin
CDHO	Chief District Health Officer
CHC	Community Health Centre
CHV	Community Health Volunteer
CP	Continuation phase of anti-TB treatment
DOT	Directly Observed Treatment
DOTS	Directly Observed Treatment with Short-Course Chemotherapy
DTC	District Tuberculosis Centre
DTO	District Tuberculosis Officer
E	Ethambutol
H	Isoniazid
HIV	Human Immunodeficiency Virus
IP	Intensive phase of anti-TB treatment
LHV	Lady Health Visitor
MO	Medical Officer
MO-TC	Medical Officer-Tuberculosis Control
MPHS	Multipurpose Health Supervisor
MPW	Multipurpose Worker
MSO	Medical Store Organisation

NGO	Non-Governmental Organization
NTP	National Tuberculosis Programme
OPD	Outpatient Department
PHC	Primary Health Centre
PHI	Peripheral Health Institution
PHW	Peripheral Health Worker
R	Rifampicin
RNTCP	Revised National Tuberculosis Control Programme
S	Streptomycin
SA	Statistical Assistant
STDC	State TB Training and Demonstration Centre
STLS	Senior Tuberculosis Laboratory Supervisor
STO	State Tuberculosis Officer
STS	Senior Treatment Supervisor
TB	Tuberculosis
TB-HV	Tuberculosis Health Visitor
TO	Treatment Organiser
TU	Tuberculosis Unit
VHG	Village Health Guide
Z	Pyrazinamide