Module for Senior Treatment Supervisors (STS)

Part 1: Ensuring Proper Treatment

Successful completion of the 'Module for Multi-purpose Workers' is a prerequisite for successful completion of this module.
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INTRODUCTION

Tuberculosis (TB) kills more adults in India than any other infectious disease. More than 1,000 people a day—one every minute—die of TB in our country.

Despite the existence of a National Tuberculosis Programme (NTP) since 1962, the treatment completion rate has been around 30% and the desired results have not been achieved. There is an over-dependence on X-rays for diagnosis. Treatment regimens used are often non-standard. Incomplete treatment is the norm rather than the exception.

The goal of the Revised National Tuberculosis Control Programme (RNTCP) is to cure at least 85% of New sputum smear-positive patients detected, and to detect at least 70% of all such patients but only after the desired cure rate has been achieved.

STRUCTURE OF THE REVISED NATIONAL TUBERCULOSIS CONTROL PROGRAMME (RNTCP)

A major organizational change in the RNTCP is the creation of a sub-district level. The sub-district consists of a designated Medical Officer-Tuberculosis Control (MO-TC) who is responsible for the tuberculosis work in the sub-district in addition to his other responsibilities. Another organizational change is the creation of two full-time supervisory staff at the sub-district level for tuberculosis work: a Senior Treatment Supervisor (STS) and a Senior Tuberculosis Laboratory Supervisor (STLS). This allows for systematic monitoring of the treatment outcome of every patient.

An additional structure of the RNTCP is the District Tuberculosis Control Society (DTCS). This society functions with the District Collector/Magistrate as Chairman, the District Tuberculosis Officer (DTO) as Member Secretary, and has governmental and non-governmental representatives. The DTCS is responsible for monitoring programme implementation, arranging necessary logistics such as transport, and procuring materials such as laboratory consumables.
As the STS, you are a part of the sub-district level. Each sub-district is a Tuberculosis Unit (TU). The core function of this unit is to maintain the Tuberculosis Register, from which Quarterly Reports are compiled. A list of the responsibilities of the STS is given in Annexure I.

You are personally responsible for ensuring that policies of the RNTCP are followed, and results of treatment and laboratory examinations are accurately and promptly recorded in the Quarterly Reports.

Sub-district

Staff from the District Tuberculosis Centre (DTC) will also function as a Tuberculosis Unit (TU) for one sub-district in the area surrounding the DTC. Specifically, the DTC Laboratory Technician and Treatment Organizer will carry out the functions of the sub-district supervisory team in their respective sub-district in addition to their functions as a microscopy and treatment centre. The functions of the STS, in coordination with the STLS and designated Medical Officer, are to:

- maintain a map of the area detailing all health facilities in the area, including government organizations and NGOs which specifically carry out TB activities, as well as the staff responsible for these activities (name, position and location)
- ensure a regular supply of drugs and other logistics facilitating their uninterrupted availability in all designated centres of the sub-district. Retrieve unfinished medicine boxes of patients who have died or defaulted (i.e. stopped treatment for two months or more continuously)
- establish liaison with private practitioners and NGOs providing TB services, facilitate referral and ensure registration and notification
- organize regular training and continuing education
- keep the Tuberculosis Register up-to-date
- ensure preparation and timely submission of Quarterly Reports on case detection, sputum conversion and treatment outcome, and on programme management
- make sure symptomatic patients are identified and referred for diagnosis.
Health Units

Health Units include rural and other hospitals, health centres and dispensaries within a sub-district.

Main responsibilities of the Medical Officer (MO) at this level are to:

- send all patients with cough for 3 weeks or more (or their sputum specimens) to designated microscopy centres for microscopy examination
- ensure that Directly Observed Treatment (DOT) is successfully implemented in all diagnosed cases
- ensure that defaulters are traced immediately and brought back to treatment
- update Tuberculosis Treatment Cards and other records regularly and make them available for the STS, MO-TC, District Tuberculosis Officer (DTO), and other supervisory staff when they visit the health unit
- facilitate follow-up sputum smear examinations
- trace and investigate contacts of smear-positive patients
- discharge, in cooperation with the designated Medical Officer of the sub-district or the DTO, all those patients who have completed their prescribed treatment regimen.

ENSURE IDENTIFICATION OF TUBERCULOSIS SUSPECTS

The Medical Officer (MO) at the health facility screens the patients and sends those who are suspected of having TB for sputum smear examination. Patients suspected of having pulmonary TB may also be referred by private practitioners to the government services for diagnosis and treatment.

Adult outpatients should be asked if they have cough for 3 weeks or more. All persons who have cough for 3 weeks duration or longer should have 3 sputum smear examinations for acid-fast bacilli (AFB). Sputum smear examination facility and anti-tuberculosis treatment are available free of charge at government facilities.

MESSAGE FOR HEALTH STAFF

Always suspect TB when adult patients complain of cough for 3 weeks or longer duration. Send them for 3 sputum smear examinations at the designated microscopy centre where these facilities are available free of cost.
Patients who are suspected of having extra-pulmonary TB, and patients who are contacts of sputum smear-positive patients, should have their sputum examined for AFB if they have any chest symptom suggestive of TB.

The patient receives sputum containers and instructions for bringing out sputum. He then provides the sputum samples which are examined in the microscopy 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—one spot specimen on the first day, the patient is given a sputum container to bring one early morning specimen the next day and another spot specimen is collected when he comes to deliver the second specimen.

TRANSPORT OF SPUTUM SPECIMENS

The health worker is responsible for making sure that after the sputum is collected, it is taken to the laboratory as soon as possible. Local arrangements should be made for transport of specimens to the microscopy centre and of the results of sputum smear examinations from the microscopy centre back to the treating physician. Guidelines for transport of sputum specimens are given in the Manual for Laboratory Technicians.

Sputum specimens should be examined by sputum smear microscopy not later than 1 week after they are collected.

Patients with two positive smear results are diagnosed as smear-positive cases. Based on their treatment history, they are further classified as New or previously-treated cases (Relapses, Failures, Treatment After Default cases) and appropriate treatment regimen is prescribed.

Patients with only one positive smear result are referred to the nearest X-ray facility. Of these, patients who have chest X-ray compatible with TB as diagnosed by an MO are considered to be suffering from TB and are registered as smear-positive cases.
Patients with three negative smear results are termed as smear-negative and are prescribed broad spectrum antibiotics for 1–2 weeks. If the symptoms persist, the patient is 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. Depending upon their clinical condition they will be classified as ‘seriously ill’ and ‘not seriously ill’ cases, and placed under appropriate treatment regimen. If the patient is put into the seriously ill category, reasons for the same should be mentioned in the Remarks column of the Tuberculosis Treatment Card and Tuberculosis Register.

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.

Extra-pulmonary TB cases will be diagnosed by physicians. Diagnostic procedures undertaken to arrive at the diagnosis must be mentioned in the Tuberculosis Treatment Card.

Unless the diagnostic algorithm given on page 6 is followed, a large proportion of the patients treated for tuberculosis on the basis of abnormal X-rays alone may actually not be suffering from tuberculosis and thus put on treatment which they do not require.

Every patient who has cough for 3 weeks or more, with or without other symptoms suggestive of tuberculosis, should have 3 sputum samples examined for AFB.

ENSURE PROPER TREATMENT OF PATIENTS

Before a patient begins chemotherapy, it is very important to find out from the patient whether he has previously taken drugs for tuberculosis and if so for how long. Treatment regimens differ in respect of type of drugs and the duration of treatment regimen for different categories. A patient who has never taken anti-tuberculosis drugs (or has taken these drugs for less than one month) will start on a different treatment regimen as compared to a patient who has taken anti-tuberculosis drugs in the past for one month or more.
## Diagnosis and Management

**COUGH FOR 3 WEEKS OR MORE**

- **3 Sputum smears**
  - **3 or 2 Positives**
    - **1 Positive**
      - X-ray
        - **TB**
          - Sputum-positive TB
            - Anti-TB Treatment
        - **Negative for TB**
          - Non-TB
      - **Negative for TB**
        - X-ray
          - **Negative for TB**
          - **TB**
          - Sputum-negative TB
            - Anti-TB Treatment
  - **3 Negatives**
    - Antibiotics 1–2 weeks
    - Symptoms persist

### Verify disease classification, type of patient, and category of treatment

Refer to Annexure II for information on definitions used in the RNTCP. Study these definitions carefully and ensure that they are strictly adhered to.

Treatment is given according to categories. These categories must be strictly adhered to. Please review carefully the table on page 7.

Thrice a week treatment is as effective as daily treatment provided you ensure that the patient swallows the drugs in the presence of a health worker as per the policy of Directly Observed Treatment (DOT).
### Category of Treatment

<table>
<thead>
<tr>
<th>Category of Treatment</th>
<th>Type of Patient</th>
<th>Regimen*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category I</td>
<td>New sputum smear-positive</td>
<td>2(HRZE)₃</td>
</tr>
<tr>
<td></td>
<td>Seriously ill sputum smear-negative</td>
<td>4(HR)₃</td>
</tr>
<tr>
<td></td>
<td>Seriously ill extra-pulmonary**</td>
<td></td>
</tr>
<tr>
<td>Category II</td>
<td>Sputum smear-positive Relapse***</td>
<td>2(HRZES)₃</td>
</tr>
<tr>
<td></td>
<td>Sputum smear-positive Failure***</td>
<td>1(HRZE)₃</td>
</tr>
<tr>
<td></td>
<td>Sputum smear-positive Treatment After Default</td>
<td>5(HRE)₃</td>
</tr>
<tr>
<td>Category III</td>
<td>Sputum smear-negative, not seriously ill</td>
<td>2(HRZ)₃</td>
</tr>
<tr>
<td></td>
<td>Extra-pulmonary, not seriously ill</td>
<td>4(HR)₃</td>
</tr>
</tbody>
</table>

* The number before the letters refers to the number of months of treatment. The subscript after the letters refers to the number of doses per week. H: Isoniazid (600 mg), R: Rifampicin (450 mg), Z: Pyrazinamide (1500 mg), E: Ethambutol (1200 mg), S: Streptomycin (750 mg). Patients who weigh more than 60 kg receive additional rifampicin 150 mg. Patients more than 50 years old and those who weigh less than 30 kg receive streptomycin 500 mg. Patients in categories I and II who have a positive sputum smear at the end of the initial intensive phase receive an additional month of intensive phase treatment.

** Examples of seriously ill extra-pulmonary TB cases are meningitis, disseminated TB, tuberculous pericarditis, peritonitis, bilateral or extensive pleurisy, spinal TB with neurological complications and intestinal and genito-urinary TB.

*** In rare and exceptional cases, patients who are sputum smear-negative or who have extra-pulmonary disease can have Relapse or Failure. This diagnosis in all such cases should always be made by an MO and should be supported by culture or histological evidence of current, active tuberculosis. In these cases, the patient should be categorized as ‘Other’ and given Category II treatment.

Each patient who begins treatment for tuberculosis must have a Tuberculosis Treatment Card. It is very important to ensure that during the intensive phase of treatment (which is 2 to 4 months of directly observed administration of drugs) patients are *swallowing every dose* of their medication under the direct observation of a health worker. To ensure proper drug administration, observe health workers administering drugs to the patients and speak directly with the patients to determine whether they have been receiving the correct number and type of drugs. After the patients swallow their drugs in the presence of a health functionary, those receiving streptomycin should be given the injections with *sterile syringes* and *needles*. 
Patients who are treated at the diagnostic health facility (PHC/CHC/DTC) will receive the first dose of medication on the day the Tuberculosis Treatment Card is prepared. Their houses should be visited by health staff for confirmation of address before commencement of treatment. This opportunity should also be used for screening of contacts and motivating the patient for taking the complete treatment regularly.

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

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 allopathic doctor at the place the patient agreed to for his DOT. If this 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.

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

Arrange for the treatment to be as convenient to the patient as possible. Patients should be administered their drugs from a health unit close to their home. During supervisory visits to the health units, review the Tuberculosis Treatment Cards to determine whether these patients are regularly coming to the health units to take their drugs. In selected cases visit the patients to ensure the authenticity of the information recorded in the Tuberculosis Treatment Cards. Make sure any patient who has stopped taking drugs is traced and brought back under treatment.

As part of your responsibilities in administering treatment, make sure that children under 6 years of age with a family member who is smear-
positive are evaluated for tuberculosis. If they do not have tuberculosis they should get **proper preventive treatment**. However, if they have tuberculosis, make sure they receive the appropriate treatment.

In rare cases, patients face problems with medicines prescribed in the RNTCP. The table below gives some symptoms which patients may experience, the drug that is most likely responsible for these symptoms, and the appropriate action that should be taken.

**SYMPTOM-BASED APPROACH TO EVALUATION OF POSSIBLE SIDE-EFFECTS OF ANTI-TUBERCULOSIS DRUGS USED IN THE RNTCP**

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Drug (abbreviation)</th>
<th>Action to be taken</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drowsiness</td>
<td>Isoniazid (H)</td>
<td>Reassure patient</td>
</tr>
<tr>
<td>Red-orange urine/tears</td>
<td>Rifampicin (R)</td>
<td>Reassure patient</td>
</tr>
<tr>
<td>Gastrointestinal upset</td>
<td>Any oral medication</td>
<td>Reassure patient&lt;br&gt;Give drugs with less water&lt;br&gt;Give drugs over a longer period of time&lt;br&gt;Do not give drugs on empty stomach&lt;br&gt;If above fails, consult MO regarding anti-emetic if appropriate</td>
</tr>
<tr>
<td>Burning in the hands and feet</td>
<td>Isoniazid (H)</td>
<td>Refer to MO who will give pyridoxine 100 mg/day until symptoms subside</td>
</tr>
<tr>
<td>Joint pains</td>
<td>Pyrazinamide (Z)</td>
<td>If severe, refer patient for evaluation</td>
</tr>
<tr>
<td>Impaired vision</td>
<td>Ethambutol (E)</td>
<td>STOP treatment, refer patient for evaluation</td>
</tr>
<tr>
<td>Ringing in the ears</td>
<td>Streptomycin (S)</td>
<td>STOP streptomycin, refer patient for evaluation</td>
</tr>
<tr>
<td>Loss of hearing</td>
<td>Streptomycin (S)</td>
<td>STOP streptomycin, refer patient for evaluation</td>
</tr>
<tr>
<td>Dizziness, loss of balance</td>
<td>Streptomycin (S)</td>
<td>STOP streptomycin, refer patient for evaluation</td>
</tr>
<tr>
<td>Jaundice</td>
<td>Isoniazid (H)</td>
<td>STOP treatment, refer patient for evaluation</td>
</tr>
<tr>
<td></td>
<td>Rifampicin (R)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pyrazinamide (Z)</td>
<td></td>
</tr>
</tbody>
</table>

In all cases of jaundice, anti-tuberculosis drugs should be stopped immediately and the patient referred for evaluation.
Patient flow

The MO of the Peripheral Health Institution (PHI) educates the patient about the disease. The MO also determines the DOTS centre which would be most convenient to the patient after discussing with him and arranges for his treatment there. The original Tuberculosis Treatment Card is maintained at the PHC or CHC where the patient was diagnosed as having tuberculosis.

At the centre where treatment is begun, the patient is given an Identity Card indicating name, address, sex, age, TB No. (when assigned), name of health centre, disease classification, date treatment started, type of patient, and category of treatment. The patient is supposed to bring the Identity Card during every visit to the health centre. The TB No. written thereon facilitates retrieval of his records. Treatment regimen and appointment dates are noted and at the end of treatment the MO indicates the outcome, signs and affixes his stamp.

If the patient is to be treated by a Peripheral Health Worker (PHW), a duplicate Tuberculosis Treatment Card will be prepared and given to the PHW to record the DOT. The MO of the PHI will give the patient’s medicine box for the entire duration of treatment to the PHW. The date when this medicine box is issued to the PHW will be duly recorded in a 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. He emphasizes the treatment schedule, importance of regular uninterrupted intake of drug, completion of the entire course of treatment, possible intolerance, etc. as well as the need for evaluation of symptomatic contacts and treatment of child contacts (if the patient is smear-positive). After this visit, treatment is commenced by the PHW (MPW, Anganwadi worker, Village Health Guide) or community volunteer. For drug administration the PHW and the patient mutually decide upon a convenient location. Medicines are delivered at the home of the patient only under exceptional circumstances when the patient is unable to collect it. In such situations the entry is encircled on the Tuberculosis 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. Where no government health worker can provide DOT, a community volunteer who is**
accessible, willing and acceptable to the patient and who can be accountable to the health system can do so. Possible community volunteers include Anganwadi workers, Dais, Panchayat leaders, religious leaders, and others. Family members may not give DOT, as it has been found that this arrangement is not reliably effective.

Action to be taken in case the patient interrupts treatment

Patients who miss a dose must be contacted and put back on treatment through home visits. This should be done by the health staff or community health worker no later than the day after the patient was due to come for treatment in the intensive phase, and within a week of the missed dose in the continuation phase. It is important to take action immediately after knowing that the patient missed a dose.

The health worker should discuss problems with the patient and find ways of preventing him from defaulting. He should convince the patient that cure depends on regular intake of drugs and convey the same message to his relatives so that they take an interest and ensure that the patient regularly takes his drug. The health worker should discuss with the patient where and what time he would prefer to take his treatment and all possible efforts should be made to adjust to the convenience of the patient. The patient should not be blamed. Try to understand his difficulties and then motivate accordingly. It is best to negotiate with the patient a plan for cure.

Manage treatment of pulmonary tuberculosis patients who interrupt treatment

If a patient does not take medication as scheduled in the intensive phase, he should be traced and given the medication on the next day. The medication for the following day is then given as scheduled. For example, if a patient is receiving directly observed treatment on Mondays, Wednesdays and Fridays, but does not take medication on Wednesday, then he should be found on Thursday and given medication. His next dose of medication should be administered on Friday, thus returning to the previous schedule.
If a patient completely misses any doses of medicine, these doses must be made up at the end of the scheduled period. The number of doses is given in the tables below.

**Phases and duration of treatment**

<table>
<thead>
<tr>
<th>Category</th>
<th>Duration (number of doses)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intensive phase</td>
<td>Continuation phase</td>
</tr>
<tr>
<td>CAT I</td>
<td>8 weeks (24 doses)</td>
<td>18 weeks (54 doses)</td>
</tr>
<tr>
<td>CAT II</td>
<td>12 weeks (36 doses)</td>
<td>22 weeks (66 doses)</td>
</tr>
<tr>
<td>CAT III</td>
<td>8 weeks (24 doses)</td>
<td>18 weeks (54 doses)</td>
</tr>
</tbody>
</table>

**Duration of treatment if sputum smear is positive at 2/3**’ months

<table>
<thead>
<tr>
<th>Category</th>
<th>Duration (number of doses)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intensive phase</td>
<td>Continuation phase</td>
</tr>
<tr>
<td>CAT I</td>
<td>12 weeks (36 doses)</td>
<td>18 weeks (54 doses)</td>
</tr>
<tr>
<td>CAT II</td>
<td>16 weeks (48 doses)</td>
<td>22 weeks (66 doses)</td>
</tr>
</tbody>
</table>

* CAT I—positive at 2 months  CAT II—positive at 3 months

For example, if a patient being treated under CAT I misses the 23rd dose of the intensive phase, but is given that dose on the following day, this would be recorded as follows:

April 22 ✓ 23 ✓ 24 ✓ S X S

If, on the other hand, the dose is missed and the patient does not report to the health facility the next day, then the dose is given on the next scheduled day, as follows:

April 22 ✓ 23 ✓ S ✓ 24 X S
In the same manner, if the patient misses a weekly drug collection in the continuation phase, the treatment is given and recorded as follows:

<table>
<thead>
<tr>
<th>April</th>
<th>17</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>18</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>S</td>
</tr>
<tr>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

During the continuation phase, if the patient is late by a single day for drug collection, the dose may be given and other doses taken as scheduled. If the patient is late by two days or more from the date on which he was scheduled to have the first directly observed dose of the weekly blister pack and collects drugs for the remainder of the week, the treatment is given and recorded as follows:

<table>
<thead>
<tr>
<th>April</th>
<th>16</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>17</th>
<th>18</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>S</td>
<td>X</td>
</tr>
<tr>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>S</td>
<td>X</td>
</tr>
</tbody>
</table>

Tuberculosis Treatment Cards should be arranged 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 Tuberculosis Treatment 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 Tuberculosis Treatment Cards of patients who do not present for treatment will be apparent on the same day, facilitating appropriate action for their retrieval.

Sometimes, a patient may stop taking his drugs. This can happen when a patient does not understand that he needs to take ALL his drugs for the full duration of treatment. When such a patient returns to the treatment unit, the health worker must get the patient back on treatment. The treatment prescribed depends on the type of patient, the duration of treatment, the duration of interruption of treatment, and whether he is smear-positive or smear-negative when he returns for treatment. Consult the MO-TC for management of such patients.

The reason any dose has been missed, and the actions taken to return the patient to treatment should be recorded in the Remarks column of the Tuberculosis Treatment Card. If the interruption of treatment is for 2 weeks or more, refer to the tables in Annexure III for management of the patient.
**RECORD RESULTS OF FOLLOW-UP SPUTUM SMEAR EXAMINATIONS**

For patients who had positive smears at the time of diagnosis, 2 sputum specimens are taken for follow-up sputum smear examinations at three specified intervals: at the end of the intensive phase, 2 months into the continuation phase, and at the end of treatment. Out of 2 sputum specimens examined if 1 is positive for AFB, the patient is smear-positive. If both specimens are positive for AFB, the highest number associated with the positive smear results (for example 3+) is written on the patient’s Tuberculosis Treatment Card next to the appropriate month. If both specimens are negative for AFB, the patient is smear-negative and **NEG** is recorded next to the appropriate month.

The schedule of follow-up sputum smear examinations is given in the table below:

<table>
<thead>
<tr>
<th>Schedule of follow-up sputum smear examinations</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Category of treatment</th>
<th>Pre-treatment smear</th>
<th>Test at month</th>
<th>IF: result is</th>
<th>THEN:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category I</td>
<td>+</td>
<td>2</td>
<td>−</td>
<td>Start continuation phase, test sputum again at 4 and 6 months‡</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>+</td>
<td>Continue intensive phase for one more month, test sputum again at 3, 5 and 7 months‡</td>
</tr>
<tr>
<td></td>
<td>−</td>
<td>2</td>
<td>−</td>
<td>Start continuation phase, test sputum again at 6 months‡</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>+</td>
<td>Continue intensive phase for one more month, test sputum again at 3, 5 and 7 months‡</td>
</tr>
<tr>
<td>Category II</td>
<td>+</td>
<td>3</td>
<td>−</td>
<td>Start continuation phase, test sputum again at 5 and 8 months</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>+</td>
<td>Continue intensive phase for one more month, test sputum again at 4, 6 and 9 months</td>
</tr>
<tr>
<td>Category III</td>
<td>−</td>
<td>2</td>
<td>−</td>
<td>Start continuation phase, test sputum again at 6 months‡</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>+</td>
<td>Re-register the patient and begin Category II treatment‡</td>
</tr>
</tbody>
</table>

‡ Any patient treated with Category I or Category III, who has a positive smear at 5, 6 or 7 months of treatment should be considered a Failure and started on Category II treatment afresh.

The most important follow-up of smear-positive cases are sputum smear examinations done at the end of 2 months (New smear-positive cases), at the end of 3 months (retreatment cases and New smear-positive cases who...
were smear-positive even at the end of 2 months), and at the completion of treatment. These results determine the conversion rate from smear-positive to smear-negative at the end of the intensive phase of treatment, and also indicate the cure rate.

The follow-up sputum smear examination done at the completion of treatment is essential to determine the cure rate.

A patient who is diagnosed as a New pulmonary smear-positive case will have his sputum examined at the end of 2 months. If the patient is smear-negative at the end of 2 months, the date, result and laboratory serial number of the sputum smear examination should be recorded next to Month 2 on the Tuberculosis Treatment Card.

If the patient is smear-positive at the end of 2 months, forward slashes (/) should be drawn on the Tuberculosis Treatment Card in the Date, Smear result and Lab No. columns next to Month 2. The date of the sputum smear examination should be recorded above the slash under the Date column. The highest number associated with the positive smear results (for example 2+) should be written above the slash under the Smear result column. The laboratory serial number should also be recorded above the slash under the Lab No. column. The initial intensive phase of drug treatment should continue for another 4 weeks. At the end of the additional 4 weeks of intensive phase (i.e. at the end of 3 months) two samples of sputum should be examined. The date, result and laboratory serial number of the sputum smear examination should be recorded below the forward slash under the appropriate columns. Sputum will then be examined at the beginning of Month 5, and at the end of treatment. The date, result and laboratory serial number of the highest grade sputum smear examination should be recorded in the same way.

<table>
<thead>
<tr>
<th>Month</th>
<th>Date</th>
<th>Lab No.</th>
<th>Smear result</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>2/3</td>
<td>17/3 16/4</td>
<td>164 234</td>
<td>1+ NEG</td>
<td>45 Kg</td>
</tr>
</tbody>
</table>
A patient who is diagnosed as a pulmonary smear-positive Relapse, Failure or Treatment After Default case will have his sputum examined at the end of 3 months of treatment.

If the patient is smear-positive at the end of 3 months, forward slashes (/) should be drawn on the Tuberculosis Treatment Card in the Date, Smear result and Lab No. columns. The date of the sputum smear examination should be recorded above the forward slash under the Date column. The highest number associated with the positive smear results (for example 1+) should be written above the slash under the Smear result column. The laboratory serial number should also be recorded above the slash under the Lab No. column. The initial intensive phase of drug treatment should continue for another 4 weeks. At the end of the additional 4 weeks of intensive phase (i.e. at the end of 4 months), a sputum smear should be examined. The date, sputum smear result and laboratory serial number of the sputum smear examination should be written below the forward slash under the appropriate columns.

A patient who is diagnosed as a pulmonary smear-negative case (not seriously ill) will have his sputum examined at the end of 2 months and at the end of treatment. The date, result and laboratory serial number of the sputum smear examination should be recorded next to Month 2 on the Tuberculosis Treatment Card. If a smear-negative patient is found to be smear-positive at the end of 2 months, refer the patient to an MO. If it is confirmed that his sputum is smear-positive, the MO will prescribe the retreatment regimen (Category II) and the patient will be re-registered as a Failure.

**RECORD DRUG ADMINISTRATION (INTENSIVE PHASE)**

The months when the patient will be administered drugs during the intensive phase are written under the Month column in the drug collection table at the bottom of the Tuberculosis Treatment Card. The appropriate day (1–31) is ticked (✓) after the drugs are administered to the patient on alternate days, thrice a week.
RECORD DRUG COLLECTION (CONTINUATION PHASE)

The months when the patient will be collecting his drugs during the continuation phase are written under the Month column in a table at the back of the Tuberculosis Treatment Card. An ‘X’ is entered on the day (1–31) the drugs were swallowed under direct observation. A line is drawn through the remaining days of the week to indicate that the drugs for the remaining period of the week have been given.

RECORD REMARKS

Any comment about the patient can be written in this space. Examples of types of remarks are:

- Reason for discontinuation of drug collection (for example patient transferred to another district)
- Efforts to trace patients who interrupted treatment
- Results of X-ray examination
- Tuberculin test result in children
- Histology report for extra-pulmonary cases (such as report on lymph node examination/biopsy)
- Names and treatment details of children under 6 years of age in contact with a smear-positive case who are prescribed preventive chemotherapy

Keep remarks short and legible.

FOLLOW-UP AFTER THE END OF TREATMENT

No follow-up is required for a patient who has completed treatment and has been declared cured. He should be advised to report only if symptoms suggestive of TB recur.
COMMUNICATE WITH PATIENTS

During your initial contact with a patient, discuss health education issues with him, and, if possible, with his family. Communicate health education messages including:

- the infectious nature of tuberculosis
- the treatment prescribed to cure him
- the type of drugs he will be taking
- importance of screening of symptomatic contacts of smear-positive cases
- the importance of directly observed treatment
- the necessity of sputum smear examinations during treatment
- completing the full course of prescribed treatment

You and the other staff should emphasize to the patient the necessity of direct observation of every dose of drugs taken during the intensive phase and the first dose of the weekly blister pack during the continuation phase. Also explain the importance of sputum smear examination at the end of 2(3) months and at the completion of treatment.

Reassure the patient that anti-TB drugs are generally safe. Counsel them that their urine and tears may turn orange-red as a result of one of the pills, but that this is harmless and normal and will stop when they stop taking the drugs. Explain that to ensure cure, they need to take medicines under direct observation.

Provide health education to patients during initial contact

During your first contact with a patient, which is usually when you register him, you will educate him regarding essential information about his disease. Make sure he feels comfortable enough to ask you whatever he does not understand. Keep in mind that the patient is probably very sick and might still be feeling disturbed about having the disease. Ask the patient essential questions throughout the discussion to make sure he understands what is being said. During later discussions with the patient, you will explain more detailed items.
The topics that you initially need to discuss with the patient are as follows:

● **What is tuberculosis?**
  Explain in simple terms that tuberculosis is caused by a bacteria, or germ, and affects any part of the patient’s body (for example tuberculosis of the lungs). Reassure the patient that if he takes the prescribed treatment for the complete period, tuberculosis is curable.

● **Treatment of tuberculosis**
  Explain general information about the patient’s treatment:
  – duration of treatment
  – frequency of his visits to the health unit for taking treatment
  – the place he will receive treatment
  – treatment is free of charge at government centres.

● **Necessity of directly observed intake of drugs**
  Explain the importance of having directly observed treatment. This means that the health worker watches the patient swallow all his drugs.

● **How tuberculosis spreads**
  Explain in simple terms that tuberculosis can spread when a patient coughs. People in close contact with the patient can become infected when they breathe in these germs (tubercle bacilli). Also explain how to prevent tuberculosis from spreading (for example, covering the mouth when coughing and sneezing, and avoiding spitting in public places).

● **Looking for symptoms of tuberculosis**
  Describe the following symptoms of tuberculosis of the lungs to the patient so that he can recognize whether a family member might be a tuberculosis suspect:
  – A cough which lasts for 3 weeks or more. Usually, a person also has one or more of the symptoms listed below:
  – weight loss
– tiredness
– fever especially with rise in temperature in the evenings
– night sweats
– chest pain
– shortness of breath
– loss of appetite
– coughing up blood-stained sputum

Patients will generally recall their own symptoms.

**Stress the importance of taking all family members who are exposed to the disease and have symptoms suggestive of tuberculosis (symptomatic contacts) to the nearest health unit for screening for tuberculosis.** In particular, all children under 6 years of age should be screened because they are at risk of developing severe forms of the disease.
ENSURE PROPER DRUG ADMINISTRATION

Periodically, during supervisory visits, look at a patient’s Tuberculosis Treatment Card to check the drugs he should be getting, and then observe the health workers administer these drugs. Health workers must give the patient the tablets according to what is written on his Tuberculosis Treatment Card. They must observe the drug intake to make sure that the patient has swallowed the drugs. After watching the patient swallow the drugs, streptomycin injections should be given to patients under Category II treatment regimen (except for pregnant women).

If the health worker does not properly administer the drugs, inform him about the proper procedure.

Since it is more likely that the health worker will properly administer drugs in your presence, another option is to meet with the patient in private to determine if he is receiving the correct number and type of drugs. To do this, refer to the patient’s Tuberculosis Treatment Card to check the drugs he should be taking. Then, in private, ask the patient to describe how he is receiving the drugs. If you cannot determine from the patient’s response whether the health worker is properly administering the drugs, ask the patient specific questions, such as:

- How many tablets are you receiving?
- What do the tablets look like?
- When are you given the tablets?
- How are you given the tablets?
- Do you have to pay for the medicines?

It is very important to make sure that each patient receives the correct number and type of drugs, especially during the intensive phase of treatment when the patient’s sputum should convert from smear-positive to smear-negative. There are many reasons why patients may not receive the correct number and types of drugs. Some of them are as follows:

- health workers may not have directly observed the intake of drugs
- health workers may have forgotten to give patients all their tablets or may have given them the wrong number of tablets
- injections may not have been given to patients who were prescribed streptomycin
health workers may not have given the tablets to the patients before the injection

health workers may have only given certain drugs to patients they like, for whatever reason

health workers may have made their patients pay for their drugs, and therefore, the patients without money did not receive all the prescribed drugs.

If you discover that some patients are not properly receiving their drugs, speak with the health worker who is responsible for administering the drugs. Stress the importance of patients receiving the correct number and types of drugs during the intensive phase of treatment so they can convert from smear-positive to smear-negative.

Another method of monitoring drug administration is to compare the stock of drugs available in the patient-wise boxes with the dosages given and marked in the Tuberculosis Treatment Card. Any observed variation should be looked into and remedial measures taken.

Health workers and others may be reluctant to provide directly observed treatment. Concerns raised and possible responses to them are provided in the table below.

<table>
<thead>
<tr>
<th>Concerns</th>
<th>Possible responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fear of infection with the tuberculosis bacteria</td>
<td>• Patients on treatment rapidly stop being infectious</td>
</tr>
<tr>
<td></td>
<td>• Without directly observed treatment, such patients will continue to be infectious</td>
</tr>
<tr>
<td></td>
<td>• Contracting tuberculosis infection generally requires prolonged, direct contact</td>
</tr>
<tr>
<td></td>
<td>with a smear-positive patient who is not on effective treatment*</td>
</tr>
</tbody>
</table>

* Risk of spread of infection depends on the level of infectiousness of the patient and the duration and intensity of contact. Most TB patients are not highly infectious and therefore contracting infection requires prolonged direct contact with a smear-positive patient who is not on effective treatment. Patients put on effective treatment rapidly become non-infectious and are not a risk to others. A patient on regular and effective treatment, particularly one on directly observed treatment, presents virtually no risk of infection. The highest risk is from patients who are undiagnosed and not on treatment.
Concerns | Possible responses
---|---
Too much work will interfere with other responsibilities | • Tuberculosis is one of the major killers  
• Tuberculosis treatment is effective  
• Curing TB patients is a top priority  
• Providing tuberculosis treatment will improve status and credibility of health workers in the community

Drugs will not be available | • In the RNTCP, drug supplies will be regular  
• Each patient has a patient-wise box with his full course of treatment in it

Similarly, multi-purpose health workers and others who provide directly observed treatment may find that patients are reluctant to come for direct observation of intake of drugs. Concerns which may be raised by patients, and possible responses are given in the table that follows. It is essential that DOTS facility should be convenient to the patient (e.g. a walkable distance from home or work). NGOs and peripheral health workers can provide DOTS effectively at a location which is convenient for the patient.

The most effective means of ensuring that patients participate in DOTS is to simply present this as *the way TB treatment is to be given*. Some patients may be unable to participate in DOT. Such patients may account for less than 5% of all smear-positive patients. All such patients should be given conventional chemotherapy as per guidelines.

Concerns | Possible responses
---|---
Takes too much time to come for treatment | • TB can be cured if you take medicine now, and you will not need to worry about it again.  
• The first phase is only 24 doses (36 for Category II patients), after which direct observation will be once a week.

Too many pills | • TB is caused by a strong germ. Many pills are needed to get rid of it completely.  
• This is one reason why coming here to take treatment is important.  
• There will be fewer pills after the first phase of treatment.
Concerns | Possible responses
--- | ---
Medicine causes sleepiness, nausea | ● This happens to some people who take these effective medicines. There is however no need to worry.
● The sleepiness and nausea will usually stop after a few days or weeks when you get accustomed to taking the medicine.

Not necessary to come for direct observation | ● By taking treatment under direct observation, any problem will be easily and quickly identified and brought to the attention of the MO.
● By taking treatment under direct observation, correct doses of all medications will be assured.
● In India and many other countries, this is the only way to take medicine that has been proven to cure almost all patients.

Medicine is not effective | ● These are the safest and most effective medicines available to treat TB anywhere in the world.
● Almost all patients who take their medicines as prescribed are cured.

**REVIEW TUBERCULOSIS TREATMENT CARDS**

During supervisory visits to the health units, review the front part of the Tuberculosis Treatment Cards for all patients in the intensive phase of treatment. Check whether a visit was made to the patient’s home to verify the address prior to starting treatment, or at most one week after the initiation of treatment. Verify that each patient came to the health unit to take his drugs at the correct times. If a patient did not come to take his drugs for one day, the box on that particular day of the Tuberculosis Treatment Card will be blank.

If the patient is to be treated by a PHW, a duplicate Tuberculosis Treatment Card will be prepared and given to the PHW to record the DOT. Verify that Tuberculosis Treatment Cards are being updated promptly.

If a patient on ambulatory treatment in the intensive phase has not taken his drugs for **two consecutive doses**, look at the back of the
PART 1: ENSURING PROPER TREATMENT

Tuberculosis Treatment Card. See if there are any remarks health workers might have written (in the Remarks section) to suggest why the patient has not taken his drugs. If there is no indication regarding the reasons for the patient’s absence, a health worker should go to the patient’s residence to trace this patient and get him back under treatment. If he cannot find the patient, he should locate the patient’s contact person whose name and address is listed on the patient’s Tuberculosis Treatment Card. The contact person might know where the patient is currently living.

After drug administration, health workers should look through all the Tuberculosis Treatment Cards of the patients who were due to come on that particular day and put aside any cards of patients who have not come for treatment. A health worker should trace these patients immediately and try to get them back under treatment.

Also, during the supervisory visits, review the back of the Tuberculosis Treatment Cards for all patients in the continuation phase of treatment. Verify that each patient came to the health unit to collect his drugs on time. If a box on the last row is blank, determine whether it has been one week since the patient was supposed to collect his drugs. If the patient is one week late in collecting his drugs, look for any remarks health workers might have written (in the Remarks section) indicating the reasons why the patient has not collected his drugs. A health worker should trace this patient if there is no indication of a reason for the patient’s absence.

ENSURE THAT HEALTH WORKERS USE STERILE SYRINGES AND NEEDLES

During supervisory visits to the hospitals and health units within your sub-district, make sure the health workers are using sterile needles and syringes. When health workers administer streptomycin injections during the intensive phase of treatment, they must always use sterile syringes and needles for each patient. Unsterile syringes and needles may transmit infection. If syringes and needles are not properly sterilized, the risk of transmission of the deadly HIV infection is high. In areas with high prevalence of HIV infection disposable needles and syringes should be used.
Health workers should already know why sterilization is important and how to sterilize their instruments. You must observe them to make sure that they follow the basic rules of sterilization.

ENSURE APPROPRIATE PREVENTIVE TREATMENT FOR CHILDREN

Children who have family members suffering from tuberculosis can most likely become infected. The infection may develop later into tuberculosis. Some children may develop a very serious disease and may die if they are not diagnosed and treated.

In children, tuberculosis is most severe for those under 6 years of age. Make sure that all children under 6 years of age who have a family member with smear-positive tuberculosis are screened for symptoms and receive either full treatment or preventive chemotherapy. The MO will determine whether treatment is required, and if so, the type of treatment to be given.
ANNEXURE I

Responsibilities of the Senior Treatment Supervisor (STS) in the Revised National Tuberculosis Control Programme (RNTCP)

- Ensure the quality of DOTS and achievement of programme objectives in the assigned area;
- Ensure effective case-detection and organize direct observation of treatment in the sub-district;
- Maintain the Tuberculosis Register, incorporating required information in respect of all cases diagnosed in the sub-district;
- Prepare Quarterly Reports on case-detection, sputum conversion, treatment outcome, and programme management and send them to the DTO after review and approval by MO-TC.
- Maintain a map of the area detailing all health facilities in the area, both government organizations and NGOs which specifically carry out TB activities, including the staff responsible for these TB activities (name, position and location);
- Supervise each PHC, CHC and hospital in the area at least once in a month, on a systematic basis;
- Ensure that patients are correctly classified; appropriate treatment indicated, provided and taken; laboratory tests carried out and treatment outcome indicated appropriately at the completion of treatment. This can be done by checking Tuberculosis Treatment Cards, comparing the Tuberculosis 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 interviewing patients at random. Any discrepancies found during checking should be brought to the notice of MO-TC/DTO.
- Ensure that all patients presenting with productive cough of 3 weeks or more duration undergo 3 sputum smear examinations for AFB;
- Provide continuous training to the staff of health facilities under his/her jurisdiction to carry out TB control-related activities;
- Establish liaison with private practitioners and NGOs who provide TB services to promote compliance with national norms, facilitate referral, and ensure registration and notification;

- If the STS is visiting without the STLS, collect information on all parameters of laboratory performance, cross-check whether all sputum smear-positive cases have been placed under treatment. Also, take necessary steps to trace initial defaulters and bring them back under treatment. Inform the MO in-charge and the STLS about any deficiencies observed in laboratory functioning;

- Undertake all such activities which are required to achieve the stipulated performance indicators;

- 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;

- Maintain a diary recording the details of field visits and feedback given on the observations made.
**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.
### ANNEXURE III

Management of patients who were **smear-negative** at diagnosis and who interrupt treatment

<table>
<thead>
<tr>
<th>Treatment received before interruption</th>
<th>Length of interruption</th>
<th>Do a sputum smear examination?</th>
<th>Result of sputum smear examination</th>
<th>Outcome</th>
<th>Re-registration</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Less than 1 month</strong></td>
<td>Less than 2 months</td>
<td>No</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>Resume treatment and complete all doses</td>
</tr>
<tr>
<td></td>
<td>2 months or more</td>
<td>Yes</td>
<td>Negative</td>
<td>—</td>
<td>—</td>
<td>Resume treatment</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Positive</td>
<td>Default</td>
<td>New</td>
<td>Begin CAT I afresh</td>
</tr>
<tr>
<td><strong>More than 1 month</strong></td>
<td>Less than 2 months</td>
<td>No</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>Resume treatment and complete all doses</td>
</tr>
<tr>
<td></td>
<td>More than 2 months</td>
<td>Yes</td>
<td>Negative</td>
<td>—</td>
<td>—</td>
<td>Resume treatment and complete all doses</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Positive</td>
<td>Default</td>
<td>Treatment After Default</td>
<td>Begin CAT II treatment afresh</td>
</tr>
</tbody>
</table>


Management of *New smear-positive* cases who interrupt treatment (Category I)

<table>
<thead>
<tr>
<th>Treatment received before interruption</th>
<th>Length of interruption</th>
<th>Do a sputum smear examination?</th>
<th>Result of sputum smear examination</th>
<th>Outcome</th>
<th>Re-registration</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Less than 1 month</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 2 weeks</td>
<td>No</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>Continue CAT I*</td>
</tr>
<tr>
<td>2–7 weeks</td>
<td>No</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>Start again on CAT I**</td>
</tr>
<tr>
<td>8 weeks or more</td>
<td>Yes</td>
<td>Positive</td>
<td>Default</td>
<td>New</td>
<td>—</td>
<td>Start again on CAT I**</td>
</tr>
<tr>
<td></td>
<td></td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>Continue CAT I*</td>
</tr>
<tr>
<td><strong>1–2 months</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 2 weeks</td>
<td>No</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>Continue CAT I*</td>
</tr>
<tr>
<td>2–7 weeks</td>
<td>Yes</td>
<td>Positive</td>
<td>—</td>
<td>—</td>
<td>1 extra month of intensive phase of CAT I</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>Continue CAT I*</td>
</tr>
<tr>
<td>8 weeks or more</td>
<td>Yes</td>
<td>Positive</td>
<td>Default</td>
<td>Treatment After Default</td>
<td>Start on CAT II**</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>Continue CAT I*</td>
</tr>
<tr>
<td><strong>More than 2 months</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 2 weeks</td>
<td>No</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>Continue CAT I*</td>
</tr>
<tr>
<td>2–7 weeks</td>
<td>Yes</td>
<td>Positive</td>
<td>Default*** Other</td>
<td>Start on CAT II**</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>Continue CAT I*</td>
</tr>
<tr>
<td>8 weeks or more</td>
<td>Yes</td>
<td>Positive</td>
<td>Default</td>
<td>Treatment After Default</td>
<td>Start on CAT II**</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>Continue CAT I*</td>
</tr>
</tbody>
</table>

* A patient must complete all 24 doses of the initial intensive phase. For example, if a patient has to continue his previous treatment and he took 1 month of treatment (12 doses) before interrupting, he will have to take 1 more month (12 doses) of the intensive phase treatment. He will then start the continuation phase of treatment.

** A patient who must 'start again' will restart treatment from the beginning.

*** Although this patient does not strictly fit the definition of default, default most closely describes the outcome of this patient, although at re-registration he should be categorized as ‘Other’.
Management of [retreatment smear-positive] cases who interrupt treatment (Category II)

<table>
<thead>
<tr>
<th>Treatment received before interruption</th>
<th>Length of interruption</th>
<th>Do a sputum smear examination?</th>
<th>Result of sputum smear examination</th>
<th>Outcome</th>
<th>Re-registration</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 1 month</td>
<td>Less than 2 weeks</td>
<td>No</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>Continue CAT II*</td>
</tr>
<tr>
<td></td>
<td>2–7 weeks</td>
<td>No</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>Start again on CAT II**</td>
</tr>
<tr>
<td></td>
<td>8 weeks or more</td>
<td>Yes</td>
<td>Positive</td>
<td>Default</td>
<td>Treatment After Default</td>
<td>Start again on CAT II**</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Negative</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>Continue CAT II*</td>
</tr>
<tr>
<td>1–2 months</td>
<td>Less than 2 weeks</td>
<td>No</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>Continue CAT II*</td>
</tr>
<tr>
<td></td>
<td>2–7 weeks</td>
<td>Yes</td>
<td>Positive</td>
<td>—</td>
<td>—</td>
<td>1 extra month of intensive phase of CAT II</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Negative</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>Continue CAT II*</td>
</tr>
<tr>
<td></td>
<td>8 weeks or more</td>
<td>Yes</td>
<td>Positive</td>
<td>Default</td>
<td>Treatment After Default</td>
<td>Start again on CAT II**</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Negative</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>Continue CAT II*</td>
</tr>
<tr>
<td>More than 2 months</td>
<td>Less than 2 weeks</td>
<td>No</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>Continue CAT II*</td>
</tr>
<tr>
<td></td>
<td>2–7 weeks</td>
<td>Yes</td>
<td>Positive</td>
<td>Default**</td>
<td>Other</td>
<td>Start again on CAT II</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Negative</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>Continue CAT II*</td>
</tr>
<tr>
<td></td>
<td>8 weeks or more</td>
<td>Yes</td>
<td>Positive</td>
<td>Default</td>
<td>Treatment After Default</td>
<td>Start again on CAT II</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Negative</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>Continue CAT II*</td>
</tr>
</tbody>
</table>

* A patient must complete all 36 doses of the initial intensive phase.

** Although this patient does not strictly fit the definition of default, default most closely describes the outcome of this patient, although at re-registration he should be categorized as ‘Other’.