Desk Guide
for Doctors on
Management of Tuberculosis

National Tuberculosis Control Program
Ministry Of National Health Services, Regulations & Coordination
Government of Pakistan
www.ntp.gov.pk
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Identifying TB Presumptive in People with Cough

Try to provide privacy and courtesy; with only one client in the room,

- Greet the patient
- Ask the name
- Ask about the health problem

IF THE PATIENT COMPLAINS OF COUGH then ask:

How long have you been coughing? If More or less than 2 weeks, then ask:

- Has he/she recently had a cough before this?
- If yes, ask for how long?

What other symptoms does he/she have?

- Does he/she cough up sputum? What color? Is it stained with blood?
- Does he/she has fever, if yes, for how long, is it more by day or night?
- How is his/her weight and appetite?

Does any of close contact/family member suffer (has suffered) from TB?

He/she is taking any drugs? Check which drugs and how long taken

Does he/she smoke tobacco? If so; since how long?

Does he/she suffering from COPD/HIV/ Diabetes? If so; since how long?

Examination - look and listen for these signs:

- Count the pulse
- Take the temperature
- Listen with a stethoscope, asks the patient to breathe deeply.

DECIDE THE LIKELY PROBLEM (S), ADVICE AND TREAT ACCORDINGLY:

Presumptive TB if any of these present:

- Cough more than 2 weeks, or
- Cough less than 2 weeks or of uncertain duration, PLUS either;
  - Blood stained sputum or fever at night or weight loss, or
  - Previous TB in the patient, in family or other close contact

☞ Explain importance of sputum exams and send* for 2 smear
RISK ASSESSMENT:

✓ Presumptive TB case at risk of having drug resistant tuberculosis (history of previous treatment, DR contact, new cases who failed to convert negative at the end of intensive phase)

✓ Presumptive TB case who is vulnerable to have severe form of tuberculosis (HIV +ive, other immune-suppressed conditions, any other serious illness and hospitalization).

✓ Children and adults with difficulty in expectorating sputum

*Sending a Patient for Sputum Smears:

☐ Explain the method of sputum collection and send the patient to laboratory.
   Emphasize the importance of morning sputum.
DIAGNOSING A TB PATIENT (at BMU/ TB care facilities):
All TB presumptive cases are diagnosed and prescribed at the BMU/ TB care facility.

- Risk assessment for DR-TB should be done for every presumptive case of TB
- The patient visits the laboratory and get his/ her two sputum’s examined, in case of no risk of DR-TB (in case of risk of DRTB, send sputum/patient for X-pert testing)

Decide - Sputum Positive or Negative Pulmonary TB:
- If one or two sputum smears are positive
  - Declare: sputum positive pulmonary TB
- If both sputum smears are found negative
  - Give antibiotic for 7 days, clinically assess after 7 days, send for X ray (if required)
  - If patient found still ill after taking a full course of antibiotics, and X-rays consistent with active pulmonary TB
  - Declare: sputum negative pulmonary TB
- If patient found still ill after taking a full course of antibiotics and X-rays are not consistent with active pulmonary TB
  - Refer the patient to hospital medical or pulmonary specialist or district physician

Classify the Disease: Pulmonary or Extra-pulmonary
Decide the Type of Pulmonary TB Patient:
- Decide the “patient type” on basis of history* of TB drug intake in past:

<table>
<thead>
<tr>
<th>*History of drug intake</th>
<th>Smear result now</th>
<th>Type of patient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never taken Anti-TB drugs in past</td>
<td>Smear positive</td>
<td>New case</td>
</tr>
<tr>
<td>Taken Anti-TB drugs for less than 4 weeks in past and not registered with the Program.</td>
<td>Smear negative</td>
<td></td>
</tr>
</tbody>
</table>

[ 6 ]
<table>
<thead>
<tr>
<th>Taken full course of TB treatment in past and declared cured or treatment completed.</th>
<th>Smear positive</th>
<th>Relapse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taken TB drugs and transferred from another TB Register</td>
<td>-</td>
<td>Transferred-in</td>
</tr>
<tr>
<td>Are those who have previously been treated for TB and whose treatment failed at the end of their most recent course of treatment</td>
<td>Smear positive</td>
<td>Treatment After Failure</td>
</tr>
<tr>
<td>Have previously been treated for TB and were declared lost to follow-up at the end of their most recent course of treatment</td>
<td>Smear positive</td>
<td>Treatment after loss to follow-up</td>
</tr>
<tr>
<td>Taken drugs for a certain period then interrupted for 2/or more consecutive months</td>
<td>Smear Negative</td>
<td>Others</td>
</tr>
<tr>
<td>Taken drug for more than 4 weeks from outside Program, pulmonary or extra-pulmonary TB patient, Previous treatment outcome unknown.</td>
<td>Smear positive</td>
<td>Others$^{1}$ Positive</td>
</tr>
<tr>
<td></td>
<td>Smear negative</td>
<td>Others$^{1}$ Negative</td>
</tr>
</tbody>
</table>

$^{1}$ **Others.** Smear-negative pulmonary and extra-pulmonary cases may also be relapse, failures, and returns after default or chronic cases. This should, however, be a rare event, supported by pathological or bacteriological evidence (culture).
CATEGORIZATION OF TB PATIENT

Decide the Treatment Category:
TB patients are put into one of 2 treatment categories on the basis of smear results, disease classification and type of patient.

<table>
<thead>
<tr>
<th>Disease classification</th>
<th>Based on Site</th>
<th>Based on treatment history</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pulmonary</td>
<td>New</td>
<td>Previously treated:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Relapse</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Rx. after failure</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Rx. after default</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Other (s⁺ only)</td>
</tr>
<tr>
<td>Pulmonary or Extra-pulmonary</td>
<td>New &amp; Others (S⁻ Only)</td>
<td></td>
</tr>
</tbody>
</table>

PREScribing DRUGS AND EXPLAINING TREATMENT TO:

- **Prescribe** regimen according to new (Cat-I) and previously treated for (Cat-II) 
- Calculate dosage of each drug, according to the patient weight (page 4)
- Fill in the technical part of treatment card (TB01),
- **Inform** the patient that:
  ✓ He/she is suffering from tuberculosis.
  ✓ Tuberculosis is a curable disease.
  ✓ All TB medicines are free throughout your treatment.
  ✓ He/she must take TB tablets at least for 6 months (new case) and 8 months (previously treated re-treatment) under supervision of Treatment Supporter observation (If you don’t complete, the duration will exceed)

2 Transport sputum to Gene Xpert site for DST
✓ His/her treatment will last until.......... (say which month it will finish)
➢ Ask if he/she has any queries/concerns? If yes, respond.
☞ Send the patient to DOTS Facilitator at the BMU/ TB care facility.

**Ascertain** history of TB drug intake in the past by Asking: **Ever taken?**
✓ TB treatment, if yes, for how long? (also verify records if possible)
✓ Streptomycin (powder/dry) injections, if yes, for what? For how long?
✓ Tablets which make urine color red (show if possible), if yes, for what?
   for how long?

Lost to follow up with H/o TB treatment for more than 4 weeks in the past.
### Table 1:
New Case of TB (Cat-I): Dosages with fixed-dose combinations in Adults

<table>
<thead>
<tr>
<th>Patient body weight (kg)</th>
<th>Initial intensive phase daily (2 months)</th>
<th>Continuation Phase daily (4 months)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HRZE (H 75mg + R 150 mg + Z 400mg + E 275mg)</td>
<td>HR (H 75mg + R 150mg)</td>
</tr>
<tr>
<td>30-39</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>40-55</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>&gt;55</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

**H** = Isoniazid  **R** = Rifampicin  **Z** = Pyrazinamide  **E** = Ethambutal

### Table 2:
Previously Treated (Cat-II): Dosages with Fixed-dose combinations in adults

<table>
<thead>
<tr>
<th>Patient body weight (kg.)</th>
<th>Intensive phase-daily (3 months)</th>
<th>Continuation phase-daily (5 months)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HRZE (H 75mg + R 150mg + Z 400mg + E 275mg)</td>
<td>Streptomycin(^4) (750mg.) (Only for initial 2 months of intensive phase)</td>
</tr>
<tr>
<td>30 - 39</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>40 - 55</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>&gt; 55</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

**H** = Isoniazid  **R** = Rifampicin  **Z** = Pyrazinamide  **E** = Ethambutal  **S** = Streptomycin

\(^3\) If HR (H 75mg + R 150mg) is not available, then use HR (H 150mg + R 300mg)

\(^4\) Streptomycin should not be given to pregnant women

\(^5\) If HRE (H 75mg + R 150mg + E 275mg) is not available, then use separate HR (H75mg + R150 mg) + E (E 400 mg)
REGISTERING & EDUCATING TB PATIENT (at BMU/ TB care facility)

- Ask and record full address of patient and contact person details in TB01.
- Identify and record the treatment center in TB01 (usually patients prefer the diagnostic center i.e. BMU/ TB care facility as their treatment center)
- Fill in TB02, by transferring data from TB01 and also recording the next date for sputum examination.
- Fill in the first part of TB Register (TB03), by transferring data from TB01.
- Transfer district TB number to TB01 and TB02
- Educate patient on disease and treatment (use key messages given below)
- Identify household contacts for further management (see opposite box)
- Ask if he/she has any queries/concerns? If yes, respond.
- Refer patient to the treatment center:
  - Arrange “DOT” for the patient, and give TB02.

Key Health Education Messages for a Patient:

- Free TB drugs will be provided at TB care facility. Show him the tablets and explain the number of each tablet to take daily.
- Do not get worried if your urine is orange, normal with these drugs
- Must report to treatment center, if any complaint with intake of drugs
- Cough spreads the tuberculosis.
- Cover your mouth only when you cough.
- Burn/bury/drain any sputum you’ve coughed out.
- TB is does not spread through dishes, plates, clothes, or sexual relations.
- Visit this center at completion of 2 month (new case) / or 3 month (previously treated) of treatment. Bring sputum for examination. Your progress will be assessed & further treatment will be advised accordingly.
MANAGING CONTACTS (OF TB PATIENTS)

MANAGING CONTACTS

- Households and close contacts of all index cases with pulmonary tuberculosis (by asking questions from patient regarding symptoms).
- Less than 5 years old, regardless of symptoms suggestive of tuberculosis
- Drug-resistant TB (DR-TB or extensive drug-resistant TB (XDR-TB) (proven or presumptive);
- People Living with HIV (PLHIV); or
- The contacts of sputum smear positive cases are screened for symptoms and referred to the BMU, as follows:

<table>
<thead>
<tr>
<th>Household Contact</th>
<th>Screening</th>
<th>Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult</td>
<td>Chest symptoms (cough &gt; 2 weeks or other TB symptoms)</td>
<td>Arrange sputum smears</td>
</tr>
<tr>
<td>Child</td>
<td>No TB symptoms Prior BCG? (0-5 years only)</td>
<td>Reassure Give BCG(if no prior BCG) Prescribe INH 5mg/kg for 6 months (prophylactic treatment)</td>
</tr>
<tr>
<td></td>
<td>With TB symptoms H/o cough, or fever, or weight loss</td>
<td>Refer to Specialist</td>
</tr>
<tr>
<td>Child breast fed by smear positive mother</td>
<td>-</td>
<td>✓ Treat mother ✓ Protect child with INH (5mg/kg) for 6 month ✓ Continue breast feed ✓ At completion of 6 months, give BCG if not already given.</td>
</tr>
</tbody>
</table>
MANAGING DOT

- DOT to every TB patient will be managed through his/her treatment supporter.
- The DOTS Facilitator will orient the treatment supporter for observing daily drug intake.

DOT and importance of continued treatment Say:
It is important that you take your drugs every day, for six (06) months - New case/eight (08) months – Previously treated.

- Six/eight month of taking tablets is a long time - but you must keep taking the tablets so that you get cured.
- Almost everyone forgets to take medicine especially when they are feeling well and back to work.
- It is recommended that a person should be selected as a treatment supporter who will encourage you and will be responsible to supervise you taking your tablets every day during complete duration of treatment. In this way you will not forget to take the tablets.
- The Treatment Supporter will continue to support you to complete the full six/eight month treatment course.
- Then you will get the right pills in the right dose for the right length of time - so that you will be cured.
- If there are any side effects of treatment your treatment supporter will take you to health care facility.
- That is why we advise you to choose a treatment supporter who will be responsible for your complete treatment course.

Help the Patient to Select the Best Treatment Supporter Say:

- You can decide who will be the best person to be your Treatment Supporter.
- Based on successfully treated TB patients it is suggested that the best person is:
  ✓ Someone who lives nearby, so you can meet daily
  ✓ Someone who is available nearly every day in the month
✓ Someone who is **concerned** that you can complete the treatment and get well
✓ Someone who is **reliable** and will watch you take the correct number of tablets every day

**Say; person with TB often choose - either:**
✓ Health facility, if this is nearby, OR
✓ A community health worker, such as lady health worker in the village. OR
✓ A family member
➢ **Ask:** Would you be able to visit the treatment center (identified) or a community health worker or meet with family member each day?
➢ **Agree** with the patient who should supervise, if none is feasible, then
➢ **Say** that you may choose a member from community who is concerned & reliable. If so, than health worker / supporter will see you each week
☐ If the patient choose to be supervised by community health worker or community volunteer
☐ Look at the list of treatment supporters already identified and placed in TB care facility. The treatment supporter will be responsible to identify LHW and other health workers living in the community who is nearby and acceptable to the patient.
  ➢ The Treatment Supporter/ community volunteer will come first to Health facility (BMU/Health facility) to discuss their role and collect drugs.
  ✓ The patient will fill the “request support”, and ask the patient to deliver it to the community health worker, also
  ✓ The patient will give his/her TB drugs, till agreed date of next meeting (maximum 3 day)
☐ If the Treatment Supporter is a community volunteer, then Inform the lady health worker, on her next visit to health facility to visit the volunteer/patient weekly to:
✓ monitor compliance by asking questions, reviewing supporter card (if available), and counting pills, and
✓ encourage/help patient to complete the treatment
➢ **Ask** the patient if he/she has any questions or concern?
➢ **Answer** these questions and discuss the concerns.
Preparing Treatment Supporter (community health worker or community volunteer):

Health workers already trained for observing the treatment will support the treatment at health facility.

➢ Ask do you accept to be a treatment supporter, if so then:

➢ Explain
  ✓ Importance of “support” to ensure that the patient gets cured
  ✓ Patient’s treatment using tablets (recognizing various tablets, number of tablets to be taken each day)
  ✓ How tablets should be collected from the BMU and stored (at patients home)
  ✓ Schedule and importance of follow-up visits to BMU at the end of months 2, 5 and 6th month for new case and at 3, 5 and 8th month for previously treated.

➢ Do:
  ✓ Demonstrate the steps for observing the drug intake (as given on Treatment Supporter Card).
  ✓ Prepare /give Treatment Support Card to Treatment Supporter.
  ✓ Show Supporter how to record drug intake on Card (using symbol)
  ✓ Let Supporter practice, give guidance to correct problem or omission.

➢ Explain what to do:

☐ If patient says he/she will not be able to contact Supporter for next one or more days
  ❇ Instruct and give medicine for requested number of days

☐ If patient missed for two days of treatment,
  ❇ Visit/ meet the patient, help to identify and solve the problems, and encourage him/her to complete the treatment.

☐ If patient does not agree to continue the treatment than:
  ❇ Must inform LHW/CHW or DOTS Facilitator.

☐ If any complaint with intake of drugs is noticed/experienced - then.
  ❇ Patient must report to BMU/ TB Care facility
  ➢ Give the first month’s supply of drugs.
FOLLOW-UP
TB PATIENT AT BMU/TB CARE FACILITY

Follow-Up Tb Patient at Bmu/Tb Care Facility & Management of Side Effects
During Intensive Phase-The treatment supporter will collect drugs, and during the Continuation phase either the patient / treatment supporter or both can collect drugs every month from BMU/TB Care facility*. It is mandatory that treatment supporter will be responsible for the intake of drugs to the patient under DOTS throughout the course of treatment.

At this visit:

- **Ascertain** the regularity of drug intake (review Support Card or interview)
- If yes: complement,   If no: ask why and help solving the problem  
- **At the end of** 2nd, 5th and 6th month for new case and 3rd, 5th and 8th month for previously treated case:
  - Visit the BMU/ TB Care facility for follow up sputum smear examination 2nd month for New case and 3rd month for previously treated case
- **Ask** if patient has any complaint indicating side effect, if yes, **Examine** then
- **Advise/Manage the patient according to the following guidelines:**

<table>
<thead>
<tr>
<th>Side effects:</th>
<th>Then Manage as follows:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Minor</strong></td>
<td></td>
</tr>
<tr>
<td>✓ Anorexia, nausea, abdominal pain</td>
<td>Continue anti-TB drugs and:</td>
</tr>
<tr>
<td></td>
<td>Give drugs last thing at night</td>
</tr>
<tr>
<td>✓ Joint pains</td>
<td>Aspirin</td>
</tr>
<tr>
<td>✓ Burning sensation in the feet</td>
<td>Pyridoxine 100 mg daily</td>
</tr>
<tr>
<td>✓ Itching of skin</td>
<td>Anti-histamine</td>
</tr>
<tr>
<td></td>
<td><strong>If no response refer to BMU/ TB Care facility</strong></td>
</tr>
</tbody>
</table>

[ 16 ]
Major
✓ Skin rash
✓ Deafness
✓ Dizziness (vertigo & nystagmus)
✓ Jaundice
✓ Visual impairment (other causes excluded)
✓ Shock, purpura, acute renal failure

Stop anti-TB drugs. Refer to a Specialist

(Color of urine may be orange/red then reassure the patient that this is normal for the drug)

- Enter the current and next date of appointment on TB02 & inform the patient.
- At completion of intensive phase, append the treatment Support Card to TB01.

### Starting continuation phase of treatment:

<table>
<thead>
<tr>
<th>Category of Patient</th>
<th>AFB smear examination</th>
<th>Management</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Month</td>
<td>Result</td>
</tr>
<tr>
<td>New Bacteriologically positive</td>
<td>0Month</td>
<td>Positive</td>
</tr>
<tr>
<td></td>
<td>End of 2Month</td>
<td>Negative</td>
</tr>
<tr>
<td></td>
<td>End of 5Month</td>
<td>Positive</td>
</tr>
<tr>
<td></td>
<td>End of 6Month</td>
<td>Negative</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Positive</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Negative</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Positive</td>
</tr>
<tr>
<td>New Bacteriologically Negative</td>
<td>0Month</td>
<td>Negative</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>--------</td>
<td>----------</td>
</tr>
<tr>
<td>End of 2Month</td>
<td>Negative</td>
<td>Start continuation phase treatment 4HR</td>
</tr>
<tr>
<td>Positive</td>
<td></td>
<td>Do X-pert test, if RR not detected, start continuation phase and continue the follow up as New case (Smear positive)</td>
</tr>
<tr>
<td>All retreatment cases after failure, lost to follow up or relapse</td>
<td>0Month</td>
<td>Positive</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>End of 3Month</td>
<td>Negative</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Positive</td>
</tr>
<tr>
<td></td>
<td>End of 5Month</td>
<td>Negative</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Positive</td>
</tr>
<tr>
<td></td>
<td>End of 8Month</td>
<td>Negative</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Positive</td>
</tr>
</tbody>
</table>

**Update** the data on TB01, TB02 & TB03 for every patient (i.e. sputum result in TB01, TB02, TB03; drug prescribed in TB01, TB02; and date of next sputum examination in TB02)
RETRIEVING OF TB PATIENT

The BMU/TB Care facility will help the treatment supporter during the process of retrieving a patient, who already delay his/her due contact with the health providers

IDENTIFY THE ABSENT PATIENT:

- In case of two days of drug intake interruption /gap (absence) by the patient under supervised treatment, he/she should be identified and action be taken by the treatment supporter.
- DOTS Facilitator will review every fortnight the TB01 of all under treatment patients, to identify any interruption/ gap (absence) of seven days or more in collection of drugs from treatment center.

RETRIEVE THE ABSENT PATIENT:

During supervised treatment:

- Under supervised treatment, if the patient missed two consecutive days of treatment - then
  ▷ Treatment Supporter should try to visit the patient and convince/help him/her to continue treatment without interruption.
- In case of Supporter’s inability to convince- then
  ▷ He/she must inform the next level of hierarchy (i.e. family member to inform community health worker and community health worker to inform DOTS Facilitator).

During the complete treatment course/duration:

The BMU/TB care facility DOTS Facilitator should be alerted if

- The patient (or his supporter/family member) fails to turn up within seven days or more of his/her scheduled visit to collect medicine
  ▷ DOTS Facilitator must identify (in time) the delay, and arrange for retrieval of the absent patient through one or more of the following ways:
    ✓ Coordinating with the community health worker in the area
    ✓ Contact through mobile phone
    ✓ Home visiting by a staff member of treatment center, where feasible
    ✓ Writing letter to patient, where deemed suitable and found feasible
    ✓ Other feasible way, as deemed suitable under local circumstances.
MANAGING TREATMENT, INTERRUPTION AND DECLARING TREATMENT OUTCOMES

Management of INTERRUPTED TREATMENT:

- Retrieve the past record (TB01 and/or TB02) of the patient -then
  - Look at the category in which patient was registered last time
  - Calculate the duration of treatment before interruption
  - Calculate the duration of interruption (current date - last due date)
- If less than 2 weeks – treatment center continues on existing treatment
- If more than 2 weeks – patient send to BMU / TB Care facility for decision
- At BMU / TB Care facility, decision is made according to guidelines given in the later section of desk guide

DECLARING TREATMENT OUTCOME:

- BMU / TB Care facility declares treatment outcome for registered TB patient on basis of TB01 data/comment, and record this in TB01, TB02 & TB03
- The TB01 for all those who have stopped the TB treatment will be gathered at the BMU / TB Care facility on quarterly basis.

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cured</td>
<td>A patient registered as smear-positive, has completed the duration of treatment, and becomes sputum smear negative at the end of treatment and on at least one previous occasion.</td>
</tr>
<tr>
<td>Treatment completed</td>
<td>A smear positive patient who has completed the duration of treatment and have at least one follow up smear negative results but none at the end of treatment due to any reason</td>
</tr>
<tr>
<td></td>
<td>Smear negative and extra pulmonary cases complete six months of treatment successfully</td>
</tr>
<tr>
<td>Treatment failure</td>
<td>A sputum smear positive patient who remains or becomes sputum smear positive at month five or later.</td>
</tr>
<tr>
<td>Died</td>
<td>A patient who dies for any reason during the course of treatment.</td>
</tr>
<tr>
<td>Lost to follow up</td>
<td>A patient whose treatment was interrupted for two consecutive months or more after registration</td>
</tr>
<tr>
<td>Not evaluated</td>
<td>A TB patient for whom, no treatment outcome is assigned (includes “Transfer out” to another treatment unit and whose treatment outcome is unknown).</td>
</tr>
</tbody>
</table>
Monthly review meeting BMU / TB Care facility:
- A monthly DOTS Review Meeting may be held at BMU / TB Care facility.
- The participants will include doctor, DOTS Facilitator and laboratory technician.
- The review is conducted in a form of participatory discussion.
- The monthly DOTS review may include all/any of the following areas:
  ✓ Laboratory functioning
  ✓ Categorization and prescription practices
  ✓ Monitoring the case finding, sputum conversion and treatment outcomes
  ✓ Contact screening and management
  ✓ DOT Management
  ✓ Follow-up of registered TB patients
  ✓ Patient compliance and lost to follow up tracing
  ✓ Record maintenance
  ✓ Availability of resources

Quarterly Recording and reporting tools AT BMU / TB Care facility:
- Each quarterly report: The case finding, sputum conversion and treatment outcomes reports (i.e. TB07, TB08, TB09 respectively) will be prepared by DOTS Facilitator with support/supervision of the doctor at BMU / TB Care facility and/or district coordinator.
# MANAGEMENT OF NEW TB PATIENT WITH INTERRUPTED TREATMENT

<table>
<thead>
<tr>
<th>Length of treatment</th>
<th>Length of interruption</th>
<th>Do a smear?</th>
<th>Result of smear</th>
<th>Do Xpert?</th>
<th>Result Xpert</th>
<th>Register again as</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 1 month</td>
<td>&lt; 2 weeks</td>
<td>No</td>
<td>-</td>
<td>No</td>
<td>-</td>
<td>-</td>
<td>Continue on same CAT I</td>
</tr>
<tr>
<td>2-8 weeks</td>
<td>No</td>
<td>-</td>
<td>No</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Start again on same CAT I</td>
</tr>
<tr>
<td>&gt; 8 weeks</td>
<td>Yes</td>
<td>Positive</td>
<td>Yes</td>
<td>MTB + RR – MTB + RR + MTB ND</td>
<td>Treatment after Loss to Follow-up⁶</td>
<td>Start CAT II Ref to PMDT</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Negative</td>
<td>Yes</td>
<td>MTB + RR – MTB + RR + MTB ND</td>
<td>Treatment after Loss to Follow-up</td>
<td>Start CAT II Ref to PMDT Send for culture Ref to Specialist</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt; 1 month</td>
<td>&lt; 2 weeks</td>
<td>NO</td>
<td>-</td>
<td>NO</td>
<td>-</td>
<td>-</td>
<td>Continue on same CAT I</td>
</tr>
<tr>
<td>2-8 weeks</td>
<td>Yes</td>
<td>Positive</td>
<td>YES</td>
<td>MTB + RR – MTB + RR + MTB ND</td>
<td>Start again on same CAT I Ref to PMDT</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Negative</td>
<td>Yes</td>
<td>MTB + RR – MTB + RR + MTB ND</td>
<td>Start again on same CAT I Ref to PMDT Send for Culture Ref to Specialist</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

⁶ Register first on smear result as treatment loss to follow up and send for Xpert
<table>
<thead>
<tr>
<th>&gt; 8 weeks</th>
<th>Yes</th>
<th>Positive</th>
<th>Yes</th>
<th>MTB + RR –</th>
<th>MTB + RR +</th>
<th>Treatment after Loss to follow-up</th>
<th>Start CAT II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative</td>
<td>Yes</td>
<td>MTB + RR –</td>
<td>MTB + RR +</td>
<td>MTB ND</td>
<td>Treatment after Loss to follow-up</td>
<td>Start CAT II</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ref to PMDT</td>
<td>Ref to PMDT Send for Culture Ref to Specialist</td>
<td></td>
</tr>
</tbody>
</table>

* A patient must complete all 60 doses of the initial intensive phase. For example, if a patient has to continue his previous treatment and he took one month of treatment (30 doses) before interrupting, he will have one more month (30 doses) of the intensive phase to take. He will then start the continuation phase of treatment.

** A patient who must “start again” will restart from the beginning.
### MANAGEMENT OF PREVIOUSLY TREATED TB PATIENT WITH INTERRUPTED TREATMENT

<table>
<thead>
<tr>
<th>Length of treatment</th>
<th>Length of interruption</th>
<th>Do a smear?</th>
<th>Result of smear</th>
<th>Do Xpert</th>
<th>Result of Xpert</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any Length of RX</td>
<td>&lt; 2 weeks</td>
<td>No</td>
<td>-</td>
<td>No</td>
<td>-</td>
<td>Continue on same CAT II</td>
</tr>
<tr>
<td></td>
<td>2-8 weeks</td>
<td>Yes</td>
<td>Positive</td>
<td>Yes</td>
<td>MTB + RR –</td>
<td>Ref to specialist</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>MTB + RR+</td>
<td>Ref to PMDT</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>MTB + RR –</td>
<td>Yes</td>
<td>MTB + RR+</td>
<td>Ref to specialist</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>MTB + RR+</td>
<td></td>
<td></td>
<td>Ref to PMDT</td>
</tr>
<tr>
<td></td>
<td>&gt; 8 weeks</td>
<td>Yes</td>
<td>Positive</td>
<td>Yes</td>
<td>MTB + RR –</td>
<td>Ref to specialist</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>MTB + RR+</td>
<td>Ref to PMDT</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>MTB + RR+</td>
<td></td>
<td></td>
<td>Ref to PMDT</td>
</tr>
</tbody>
</table>

* A patient must complete all 90 doses of the initial intensive phase
SOME KEY PROBLEMS TO CONSIDER IN PEOPLE WITH COUGH

**Decide the patient is very ill** if one or more of these are present?
- Impaired consciousness, agitation or lethargy
- Difficulty in breathing at rest or cannot talk in full sentences
- Pulse more than 125 in one minute
- Breathing more than 30 / minute adult (or 40 child age 5-13 years)
- Temperature more than 104°F
- BP systolic less than 90

If one or more present give emergency treatment and arrange urgent referral
(see below)

**Consider pneumonia if any of these are present:**
- Pleuritic chest pain, or fever, or coarse crepitations or
- Rapid breathing
- Give an antibiotic, arrange to see again in 5 days
- If symptoms persist consider TB, explain and send# for 3 smears

**Consider asthma attack if:**
- Audible wheeze, or auscultatory wheeze
- Give salbutamol or other asthma treatment and observe the response
  - Positive response suggests asthma,
  - Little or no change, suggest COPD as below.

**Consider exacerbation chronic obstructive pulmonary disease**
(COPD/ chronic bronchitis) if has been a smoker, and is:
- A recent increase in sputum or change in color to yellow or green,
- Give an appropriate antibiotic, suggest stop smoking and see in one week.
- If symptoms persist consider TB and send# for 3 sputum smears

**If You Assess an Adult Patient with Cough and Decide they are very Ill then Follow the Guidelines Below:**
- Immediately arrange urgent transfer to hospital or if available ask the doctor to see immediately
- Give oxygen if available
- If pain give paracetamol, and if fever cold sponging and paracetamol
If wheezy give inhaled or oral salbutamol and repeat this on the journey

Give other emergency treatment if the transfer time is long (e.g. more than 4 hrs):

If pneumonia suspected give first dose of available & appropriate IM antibiotic

If short of breath at rest, or very wheezy continue to give oxygen.

If severe wheezing or difficulty talking with breathlessness:

Give salbutamol by inhaler or nebuliser if available, and if wheezing continues repeat in 10 to 20 minutes, OR give as salbutamol injection 500 micro-gram (0.5mg) subcutaneous or IM (may be repeated in 4 hours)

Also give prednisolone 40mg orally or hydrocortisone 100mg IM

If wheeze continues with little response after the salbutamol, give aminophylline 250mg dilute in saline to 20mls given slowly IV over 20 minutes, OR

If wheeze continues- but not hypertensive or elderly - then give epinephrine (adrenaline) subcutaneously of 1:1000 (1 mg/ ml = 0.1% solution)

May repeat once every 30 minutes if no signs of toxicity.

Use a 1ml syringe to give subcutaneously

Dose by weight:

0.25 – 0.3 ml if weight 30 – 39 kg
0.25 – 0.4 ml if weight 40 – 49 kg
0.25 – 0.5 ml in an adult 50 or more kg
# TREATMENT REGIMEN FOR CHILDREN WITH TB

## Recommended Treatment Regimens for TB in Children

<table>
<thead>
<tr>
<th>TB diagnostic category</th>
<th>Anti-TB drug regimens&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Low HIV prevalence (and HIV-negative children) and low isoniazid resistance settings</strong>&lt;sup&gt;b&lt;/sup&gt;</td>
<td>Intensive phase</td>
</tr>
<tr>
<td>- Smear negative pulmonary TB</td>
<td>2HRZ</td>
</tr>
<tr>
<td>- Intrathoracic lymph node TB</td>
<td></td>
</tr>
<tr>
<td>- Tuberculosis peripheral lymphadenitis</td>
<td></td>
</tr>
<tr>
<td>- Extensive pulmonary disease</td>
<td>2HRZE</td>
</tr>
<tr>
<td>- Smear-positive pulmonary TB</td>
<td></td>
</tr>
<tr>
<td>- Severe forms of extra-pulmonary TB (other than tuberculous meningitis/ osteoarticular TB)</td>
<td></td>
</tr>
<tr>
<td>- Tuberculous meningitis and osteoarticular TB</td>
<td>2HRZE&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

<sup>a</sup> The standard code for anti-TB treatment regimens uses an abbreviation for each anti-TB drug: isoniazid (H), rifampicin (R), pyrazinamide (Z) and ethambutol (E). A regimen consists of two phases – the initial and continuation phases. The number at the front of each phase represents the duration of that phase in months. Example, 2HRZ: Duration of this phase is 2 months and drug treatment is daily (no subscript numbers after the abbreviations) with isoniazid, rifampicin and pyrazinamide.

<sup>b</sup> See “Definitions and distinctions” section WHO definitions of high and low prevalence of HIV and isoniazid resistance.

<sup>c</sup> The decision on the regimen for a child with tuberculous meningitis should be made by an experienced clinician. It is suggested that the patient be treated in a hospital.

The WHO has recommended very recently that Streptomycin should not be given to children as a first line of treatment.

<sup>H</sup>=Isoniazid, <sup>R</sup>=Rifampicin, <sup>Z</sup>=Pyrazinamide, <sup>E</sup>=Ethambutol
**Definitions:**

**Presumptive TB** refers to a patient who presents with symptoms or signs suggestive of TB.

**Bacteriologically confirmed TB case** is one from whom a biological specimen is positive by smear microscopy, culture or WHO Approved Rapid Diagnostic (WRD) such as X-pert MTB/RIF. **Clinically diagnosed TB case** is one who does not fulfill the criteria for bacteriological confirmation but has been diagnosed with active TB by a clinician or other medical practitioner who has decided to give the patient a full course of TB treatment. This definition includes cases diagnosed on the basis of X-ray abnormalities or suggestive histology and extra pulmonary cases without laboratory confirmation.

**Pulmonary tuberculosis (PTB)** refers to any bacteriologically confirmed or clinically diagnosed case of TB involving the lung parenchyma or the tracheobronchial tree. Miliary TB is classified as PTB because there are lesions in the lungs. Tuberculous intra-thoracic lymphadenopathy (mediastinal and/or hilar) or tuberculous pleural effusion, without radiographic abnormalities in the lungs, constitutes a case of extra-pulmonary TB. A patient with both pulmonary and extra-pulmonary TB should be classified as a case of PTB.

**Extra pulmonary tuberculosis (EPTB)** refers to any bacteriologically confirmed or clinically diagnosed case of TB involving organs other than the lungs, e.g. pleura, lymph nodes, abdomen, genitourinary tract, skin, joints and bones, meninges.

**New patients** have never been treated for TB or have taken anti-TB drugs for less than 1 month.

**Previously treated patients** have received 1 month or more of anti-TB drugs in the past.

**Bullet Key:**

- ➢ Main step: This refers to a point/area under consideration
- ✓ Sub-step: This refers to two or more points related to the main step above.
- ❏ Condition: This refers to conditionality (if) and usually followed by an action statement under that particular condition.
The “TB Desk-guide” has been developed up-dated by National TB Control Program Pakistan

The purpose of developing the “TB Desk-guide” is to ensure quality of community-based TB care-DOTS delivered in Pakistan. The “TB Desk-guide” follows the logical sequence of actual care delivery process, according to national and international (WHO) guidelines.

Two separate “TB Desk-guides” have been developed for doctors (English) and paramedics (Urdu). To facilitate effective use of TB Desk-guide in the care delivery process a four-day training package for doctors and a two-day training package for paramedic have been prepared.

For Further Information:

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Block E & F, EPI Building, Near National Institute of Health (NIHI)
(Prime Minister's National Health Complex), Park Road, Islamabad, Pakistan

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Email: ntpmanagerpak@ntp.gov.pk
Fax: + (92-51) 843-8081
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