

Management of Tuberculosis Training for Health Facility Staff

SECOND EDITION

Answer Sheets



World Health
Organization



K N C V



TUBERCULOSIS FOUNDATION

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Contents: Modules: A: Introduction - B: Detect Cases of TB - C: Treat TB Patients - D: Inform Patients about TB - E: Identify and Supervise Community TB Treatment Supporters - F: Manage Drugs and Supplies for TB - G: Ensure Continuation of TB Treatment - H: Monitor TB Case Detection and Treatment - I: TB Infection Control in your Health Facility - J: Field Exercise – Observe TB Management - K: Management of Tuberculosis – Reference Booklet - L: Facilitator Guide - M: Answer Sheets.

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**Management of Tuberculosis
Training for Health Facility Staff
Second Edition**

ANSWER SHEETS



TUBERCULOSIS FOUNDATION



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Management of Tuberculosis: Training for Health Facility Staff, 2nd ed.

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Answers to Exercise B

For answers to Questions 1, 2 and 3, see the completed *Register of TB Suspects* on the next page.

4. The next appropriate action that you should take for each TB suspect, based on laboratory results, is:

- **Anna Abouya:** Inform her that she does not have pulmonary TB and that no treatment is needed.
- **Nyore Lori:** He has one sputum smear-positive result and therefore has infectious pulmonary TB. He needs treatment for TB.
- **Kumante Waweru:** Follow up with the laboratory to find out what happened to this suspect's results.
- **Pooran Singh:** The sputum smear did not show pulmonary TB. However, he has other signs and symptoms compatible with TB (fever, night sweats, weight loss) that make him a TB suspect. Refer him to a clinician for assessment.

In addition, strongly recommend HIV testing to him, and explain that the results will be important in determining how to best treat him.

- **Esna Josephus:** Quickly inform the patient that she has smear-positive pulmonary TB and needs to begin treatment right away.

Year 2009

REGISTER OF TB SUSPECTS

Facility Veld Health Centre

**B: Detect Cases of TB
Answers to Exercise B, continued**

Date	TB Suspect Number	Name of TB Suspect	Age M F	Complete Address	Result of HIV test *	Date first sputum collected	Date sputum sent to laboratory	Date results received	Results of Sputum Examinations			TB Treatment Card Opened (record date)	Observations/ Clinician's Diagnosis
									1	2	3		
13 Nov	489	Anna Abanya	27	192 Market St. Apt 3, Veld	Neg	13/11	15/11	22/11	Neg	Neg			
13 Nov	490	Ngere Lori	40	Bomber House 200 Airport Rd Veld	Pos	13/11	15/11	22/11	Neg	7			
14 Nov	491	Kumante Waweru	31	21 Middle St, Raman	ND	14/11	19/11						
14 Nov	492	Pooran Singh	65	5 President St, Veld	ND	14/11	16/11	22/11	Neg	Neg			
14 Nov	493	Esna Josephus	21	77 Kingsway Park, Veld	Neg	14/11	16/11	22/11	++	++			

* (Pos) Positive; (Neg) Negative; (I) Discordant/Inconclusive; (ND) Not Done (unknown). Documented evidence of HIV test performed during or before TB treatment is reported here.

Answers to Exercise A

Case 1: Adesa Abkar

- a) Pulmonary
- b) New
- c) Low
- d) New patient regimen

Case 2: Marcus Marin

- a) Pulmonary
- b) Relapse
- c) Medium
- d) Retreatment regimen

Case 3: Raj Makena

- a) Pulmonary
- b) New
- c) Low
- d) Refer to a clinician for prescription of treatment, because Raj is HIV-positive and already on ART.

Case 4: Janu Nair

- a) Pulmonary
- b) Treatment after default
- c) High (Because he had to purchase the drugs, the treatment is presumed to have been of poor quality.)
- d) Refer to clinician for prescription of treatment because he is Treatment after default with high likelihood of MDR-TB. Treatment should be decided by a clinician.

Answers to Exercise B, Case 2

Tuberculosis Treatment Card District TB Register No. _____

Name: Marcus Marin **Disease site** (check one)

Sex: M F Date of registration in District TB Register: _____ Pulmonary Extrapulmonary, specify _____

Age: 33 Health facility: Cochar Health Centre **Type of patient** (check one)

Address: 131 Longstreet, Aruna

Name / address of treatment supporter (if applicable)
Shop Care Rx, 95 Market Street,

I. INITIAL PHASE - prescribed regimen and dosages

Regimen: New Retreatment **Referral by:**

Number of tablets per dose, doses per week, dosage of S:

(RHZE)	S	
4	1g	

Self-referral Community member

Public facility Private facility/provider:

Other, specify: _____

Cotrimoxazole	ARV	Other

Sputum smear microscopy

Month	Date	Lab No.	Result	Weight (kg)
0	30-8-09	489	++	56

TB/HIV

	Date	Result*
HIV test	4/9/09	neg
HIV test		
CPT start		
ART start		

* (Pos) Positive; (Neg) Negative; (I) Discordant/Inconclusive; (ND) Not Done/unknown

Tick appropriate box after the drugs have been administered

Daily intake observed: enter ✓. Periodic supply: enter X on day when drugs are collected and draw a horizontal line (—●) through number of days supplied. ∅ = drugs not taken

Day	Month																															Number doses this month	Total number doses given	Drugs given to supporter	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31			Date	Doses
Sept				✓																															

II. CONTINUATION PHASE

Number of tablets per dose, doses per week

(RH)	(RH) ² E ₃ (RHE)	Other
	4 + 6	

Daily intake observed: enter ✓. Periodic supply: enter X on day when drugs are collected and draw a horizontal line (—●) through number of days supplied. ∅ = drugs not taken

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

Chest X-ray (at start)

Date: _____

(-) Normal
(+) Abnormal
ND Not done

HIV care

Pre ART Register No. _____

CD4 result _____

ART eligibility (Y/N/Unknown) _____

Date eligibility assessed _____

ART Register No. _____

Comments: _____

Household contacts

First names and surnames	Age	Relationship to case	Date seen	Result
Anna Marin	28	wife		
Sanjida Marin	50	mother		
Mustaq Marin	2	son		
Tahneed Marin	2	son		
Solomon Marin	5	son		

Name and address of contact person: Anna Marin, 131 Longstreet, Aruna

Answers to Exercise B, Case 3

Tuberculosis Treatment Card

District TB Register No. _____

Name: Raj Makena

Sex: M F Date of registration in District TB Register: _____

Age: 28 Health facility: Cochar Health Centre

Address: 11 Market Place, Aruna

Disease site (check one)
 Pulmonary Extrapulmonary, specify _____

Type of patient (check one)
 New Treatment after default
 Relapse Treatment after failure
 Transfer in Other

Name / address of treatment supporter (if applicable) _____

I. INITIAL PHASE - prescribed regimen and dosages

Regimen: New Retreatment

Referral by:
 Self-referral
 Community member
 Public facility
 Private facility/provider
 Other, specify: _____

Number of tablets per dose, doses per week, dosage of S:

(RHZE)	S
3	

Cotrimoxazole 2 morning ARV evening 24T-3TC 24T-3TC, EFV Other _____

Sputum smear microscopy					Weight (kg)
Month	Date	Lab No.	Result		
0	36-8-09	560	+		53

TB/HIV		
	Date	Result*
HIV test	19-9-07	POS
HIV test		
CPT start	28-3-08	
ART start	28-3-08	

* (Pos) Positive; (Neg) Negative; (I) Discordant/Inconclusive; (ND) Not Done/Unknown

Tick appropriate box after the drugs have been administered

Daily intake observed: enter ✓. Periodic supply: enter X on day when drugs are collected and draw a horizontal line (—●) through number of days supplied. ∅ = drugs not taken

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Number doses this month	Total number doses given	Drugs given to supporter			
Month			✓																																	Date	Doses
Sept																																					

II. CONTINUATION PHASE

Number of tablets per dose, doses per week

(RH)	(RHE)	Other
3		

Daily intake observed: enter ✓. Periodic supply: enter X on day when drugs are collected and draw a horizontal line (—●) through number of days supplied. ∅ = drugs not taken

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

Chest X-ray (at start)
 Date: _____
 (-) Normal
 (+) Abnormal
 ND Not done

HIV care
 Pre ART Register No. _____
 CD4 result _____
 ART eligibility (Y/N/Unknown) _____
 Date eligibility assessed _____
 ART Register No. 322

Household contacts

First names and surnames	Age	Relationship to case	Date seen	Result
Salma Makena	29	wife		
Malig Makena	31	brother		
Qader Makena	9	nephew		

Treatment outcome
 Date of decision _____
 Cure
 Treatment completed
 Died
 Treatment failure
 Default
 Transfer out

Comments: 19/09 - Referred to Maduk Dist. Hosp. for TB treatment. 3/9 - Dr Thun prescribes Cat I.

Name and address of contact person: Sajiv Gondar, Circle Rd behind Government House, Aruna

Answers to Exercise C

Tuberculosis Treatment Card District TB Register No. 1261

Name: Raj Makena **Disease site** (check one)

Sex: M F Date of registration in District TB Register: 8 Oct 2009 Pulmonary Extrapulmonary, specify _____

Age: 28 Health facility: Cochar Health Centre **Type of patient** (check one)

Address: 11 Market Place, Aruna New Treatment after default

Relapse Treatment after failure

Transfer in Other

Name / address of treatment supporter (if applicable)

I. INITIAL PHASE - prescribed regimen and dosages **Referral by:**

Regimen: New Retreatment Self-referral

Community member

Public facility Private facility/provider:

Other, specify: _____

Number of tablets per dose, doses per week, dosage of S:

(RHZE)	S	
3	S	

Cotrimoxazole	ARV	Other
2	d4T-3TC d4T-3TC, EFV	

Sputum smear microscopy		Weight (kg)	
Month	Date	Lab No.	Result
0	30-8-09	560	+
2	5-11-09	622	neg

TB/HIV		
	Date	Result*
HIV test	19/9/07	pos
HIV test		
CPT start	28/3/08	
ART start	28/3/08	

* (Pos) Positive; (Neg) Negative; (!) Discordant/Inconclusive; (ND) Not Done/unknown

Tick appropriate box after the drugs have been administered

Daily intake observed: enter ✓. Periodic supply: enter X on day when drugs are collected and draw a horizontal line (—●) through number of days supplied. ∅ = drugs not taken

Day	Month																															Number doses this month	Total number doses given	Drugs given to supporter		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31			Date	Doses	
Sept			✓	✓	✓	✓	✓	✓	✓	—	✓	✓	✓	✓	✓	✓	—	✓	∅	∅	∅	✓	✓	✓	✓	✓	✓	✓	✓	✓	—	X	21	21		
Oct	✓	✓	✓	✓	✓	✓	✓	—	✓	✓	✓	✓	✓	✓	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	27	48		
Nov	✓	✓	✓	—	✓	✓	✓	✓	✓																								8	56		

II. CONTINUATION PHASE

Number of tablets per dose, doses per week

(RH) ³	(RHE)	Other
-------------------	-------	-------

Daily intake observed: enter ✓. Periodic supply: enter X on day when drugs are collected and draw a horizontal line (—●) through number of days supplied. ∅ = drugs not taken

Day	Month																															Number doses this month	Total number doses given		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31				
Nov														✓	—	✓	∅	✓	✓	—	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	—	X	10	10	
Dec		—	✓	∅	∅	∅	∅	—	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	—	✓	11	21
Jan																																			

Chest X-ray (at start)

Date: _____

(-) Normal
(+) Abnormal
ND Not done

HIV care

Pre ART Register No. _____

CD4 result _____

ART eligibility (Y/N/Unknown) _____

Date eligibility assessed _____

ART Register No. 322

Comments: 1/9/09 Referred to Maduk District Hosp for TB treatment plan (HIV pos). 3/9-Dr Thun prescribes new regimen. 21st Home visit; has been sick

Household contacts

First names and surnames	Age	Relationship to case	Date seen	Result
<u>Salma Makena</u>	<u>29</u>	<u>wife</u>	<u>10-9-09</u>	<u>neg</u>
<u>Maliq Makena</u>	<u>31</u>	<u>brother</u>		
<u>Qader Makena</u>	<u>9</u>	<u>nephew</u>		

Treatment outcome

Date of decision _____

Cure

Treatment completed

Died

Treatment failure

Default

Transfer out

Name and address of contact person: Sajiv Gonder, Circle Rd behind Government House, Aruna

Answers to Exercise D

PART I

Case 1: Adesa Abkar (New patient regimen)

She should have the next sputum smear examination in the last week of the third month of treatment.

Case 2: Marcus Marin (Retreatment regimen)

He is due for the next sputum smear examination in the last week of the eighth month of treatment (which is the end of his treatment).

Case 3: Raj Makena (New patient regimen)

He is due for the next sputum smear examination in the last week of the fifth month of treatment.

Case 4: Janu Nair (Retreatment regimen)

He is due for the next sputum smear examination in the last week of the fifth month of treatment, that is, approximately during the week of 1 April.

PART II

Case 1: Adesa Abkar (New patient regimen)

The health worker should consider this patient a treatment failure because the sputum smear examination after 5 months is positive. The appropriate action is to close the *TB Treatment Card*, record the outcome as “Treatment failure,” and collect sputum to send for culture and DST.

Prepare a new *TB Treatment Card*. On the new card, mark the “Type of patient” as “Treatment after failure.” Her likelihood of MDR-TB is high. Refer her to a clinician for an MDR-TB regimen.

Case 2: Marcus Marin (Retreatment regimen)

The health worker should have the patient continue treatment until all the tablets are gone. Because the sputum smear examination in the eighth month is negative, the treatment has worked well.

Case 3: Raj Makena (New patient regimen)

The health worker should have the patient complete continuation-phase treatment. Because the sputum smear examination at 5 months is negative, the treatment is working well.

He should get another sputum smear examination in the last week of the sixth month of treatment.

Case 4: Janu Nair (Retreatment regimen)

The appropriate action is to take continuation-phase treatment until it is completed. He should have another sputum smear examination in the last week of the eighth month of treatment.

Answers to Exercise E

Case 1: Adesa Abkar

Treatment outcome	
Date of decision:	<u>28-1-10</u>
Cure	<input type="checkbox"/>
Treatment completed	<input type="checkbox"/>
Died	<input type="checkbox"/>
Treatment failure	<input checked="" type="checkbox"/>
Default	<input type="checkbox"/>
Transfer out	<input type="checkbox"/>

Case 2: Marcus Marin

Treatment outcome	
Date of decision:	<u>9-5-10</u>
Cure	<input checked="" type="checkbox"/>
Treatment completed	<input type="checkbox"/>
Died	<input type="checkbox"/>
Treatment failure	<input type="checkbox"/>
Default	<input type="checkbox"/>
Transfer out	<input type="checkbox"/>

Case 3: Raj Makena

Treatment outcome	
Date of decision:	<u>5-3-10</u>
Cure	<input type="checkbox"/>
Treatment completed	<input checked="" type="checkbox"/>
Died	<input type="checkbox"/>
Treatment failure	<input type="checkbox"/>
Default	<input type="checkbox"/>
Transfer out	<input type="checkbox"/>

Raj's outcome is not "Cured" because he had no sputum smear examination in the last month of treatment.

Case 4: Janu Nair

Treatment outcome	
Date of decision:	<u>25-6-10</u>
Cure	<input type="checkbox"/>
Treatment completed	<input type="checkbox"/>
Died	<input type="checkbox"/>
Treatment failure	<input type="checkbox"/>
Default	<input checked="" type="checkbox"/>
Transfer out	<input type="checkbox"/>

Janu Nair seems to have defaulted. His last treatment was on 25 April. The health worker must wait 2 months to record this outcome, in case the patient comes back.

If, after 2 months (by 25 June), Mr Nair has not come back or been heard from, the outcome “Default” can be recorded. The date of decision would be 25 June.

Possible Answers to Exercise A

1. Possible questions about Mr Akhim's current knowledge of TB include:

What do you understand tuberculosis, or TB, to be?

What do you think causes TB? How is it spread?

Have you ever known anyone who had TB? What happened to that person?

What have you heard about curing TB?

2. Examples of important points for Mr Akhim include:

TB is caused by a germ.

TB spreads when an infected person coughs or sneezes, spraying TB germs into the air. Others may breathe these germs and become infected. Anyone can get TB.

TB can be cured with the right drug treatment. There is usually no need to stay in the hospital. You can live normally at home.

Other important messages are listed on pages 12–14 of the module, which you will read soon. The preceding points are especially important for Mr Akhim, given his wrong beliefs about TB and how it is spread.

Possible Answers to Exercise B

1. The participant should have listed two checking questions, such as:
 - *What age children should you bring in to be checked for TB?*
 - *What sign means that adults and older children should be brought to the health facility?*
 - *What is the reason that I am asking you to bring your family members to the health centre?*

2. The participant should have listed two checking questions such as:
 - *Why is it important to keep coming for treatment?*
 - *What might happen if you stop coming for treatment?*
 - *How much longer will you need to come for treatment? How often?*

Possible Answers to Exercise E

What would you say or do if....?	Possible answers:
A new patient wants to take the drugs unsupervised at home.	<p>Ask why the patient wants to take the drugs at home. If it is very inconvenient to come to the health facility, discuss possible community TB treatment supporters.</p> <p>Explain that it is a firm policy to insist on directly-observed treatment. It is the only way to obtain the drugs. It is important for a health worker to see the patient to make sure there no problems with side-effects, etc.</p>
The patient has missed 1 day of treatment.	Find out why the patient missed the dose. Attempt to solve any problems. Remind the patient of the need to take all of the doses for the prescribed time.
The patient does not want to have a sputum examination after 5 months of treatment.	Find out why. Explain the need for the examination. Explain that it is important to be sure that the medicines are working.
The patient says that her husband has a bad cough but does not have time to be tested for TB.	<p>Find out whether the patient has told her husband about her illness. Explain that it is important for him to be tested. He could have TB also; if so, he will spread TB to others and re-infect her.</p> <p>Offer to visit the husband and explain the need for testing.</p>
The patient is afraid to tell her family that she has TB.	<p>Find out why she is afraid. If she fears being turned out of her home, reassure her that, as long as she comes for treatment, her family does not have to know.</p> <p>Offer to talk with the family about TB if acceptable to the patient. Reassure the family that the patient will not be infectious after 2–3 weeks of treatment, as long as she continues treatment. Explain how TB is spread and how it can be prevented.</p>
A family member says that the TB patient cannot stay at home because the children will catch TB.	<p>Same as above, plus:</p> <p>If necessary, help the TB patient find a place to stay temporarily.</p>
The patient questions the need to use condoms since he does not have HIV.	Remind the patient that he could become infected with HIV at any time. He needs to use a condom to protect himself as well as others. If he becomes infected with HIV, it will be harder to be cured of TB.

Suggested Answers to Exercise C

- a) Yes, Mr Kumari has stopped giving treatment on Sundays.
- b) The patient has not gone out of town again.
- c) Yes. Even though today is 18 April, the treatment supporter has ticked the card through 22 April. It is wrong to tick the card before the treatment has been given.
- d) Ask Mr Kumari questions to find out if the drugs are really being given and why he ticked dates that are in the future. Tell Mr Kumari to never tick the card until after administering (directly observing) the treatment. This is very important.

Also talk to the patient to find out whether treatment is directly observed and whether the patient is really receiving treatment every day, as the card shows.

- e) Because, by April 22, Mrs Patel will have taken all 56 doses of the initial phase of treatment, she should then begin the continuation phase of treatment. The health worker should give Mr Kumari one month of the continuation-phase drugs. Since the regimen is 3 times weekly, that should be 12 doses of (RH), which is 36 (RH) tablets.

Answers to Exercise A

Tuberculosis Treatment Referral/Transfer

(Complete top part in triplicate)

Tick to indicate the reason for this referral or transfer:

Referral¹ to register and begin TB treatment Referral for special care² or Transfer³

Date of referral/ transfer 15 June 2009

Name/address of referring/transferring facility

From sending facility: Maturana Health Centre, M. Ghandi Rd, 274, Lakari Sending District Kalbit

To receiving facility: Samarkola Health Centre, Block 4, Nehru Place Receiving District Samarkola

Name of patient Tesfaye Jifar Age 32 Sex: M F

Address of patient (if moving, future address): Garan Du Street 137, Samarkola

Diagnosis: Pulmonary TB

(For Transfer) District TB Register No. 798 Date TB treatment started: 6 March 2009

TB Treatment Regimen:

New Retreatment

2(RHZE)/4(RH)₃

Other (CPT, ART etc):

Drugs patient is receiving (Rifampicin 150mg + Isoniazid 150mg)
3 tablets, 3 days per week

Remarks (e.g. side-effects observed): _____

Name / signature of person sending the patient R. Ali Moran

Documented evidence of HIV tests (and results) during or before TB treatment should be reported.

X **Return this part to facility that referred / transferred patient as soon as patient has reported.**

To be completed by facility receiving referred / transferred patient

District _____ Facility _____

District TB Register No. _____ Name of patient _____

The above patient reported at this facility on _____ (date)

Name / signature of person receiving the patient _____

¹ **Referral** is the process of moving a TB patient prior to registration in a **District TB Register** for the purpose of start of treatment (treatment closer to patient's home). The district receiving a "referred" patient is responsible to inform the facility sending the patient about the care provided.

² **Referral for special care** is indicated when the patient is very sick or has major side effects and is referred to a clinician or hospital for special care. When discharged, the patient should return to the original health facility to continue TB treatment.

³ **Transfer** is the process of moving between 2 districts a TB patient registered in a **District TB Register** to continue his treatment in another area with a different **District TB Register**. The district 'transferring-out' a patient is responsible to report the treatment outcome, after getting the information from the district completing the treatment. The district receiving a patient 'transferred-in' is responsible for informing the district sending the patient 1) of the arrival of the patient and 2) at the end of the treatment, of the treatment outcome.

Answers to Exercise A, Questions 1–4

1. Contact the Samarkola Health Centre to find out if Mr Jifar has reported for treatment. If not, give the health centre any contact information that you have.
2. Contact the Smarkola Health Centre towards the end of September, when Mr Jifar's treatment should be completed. Reasoning:

According to his *TB Treatment Card*, Mr Jifar started the continuation phase in mid-May (13 May 2009). Mr Jifar should have completed his 4 months of the continuation phase in mid-September, but he will not finish until the end of September since he missed 2 weeks of doses after his move.

3. "Treatment completed" is the outcome.
4. On the back of the original *TB Treatment Card*, the outcome "transfer out" and the date 17 June should be marked out. The date 1 October 2009 should be recorded, and the box for "treatment completed" should be ticked.

Answers to Exercise B

Worksheet 1: Data on TB case detection

Circle the previous quarter: 1 2 3 4 of year: 2009

Record the dates included in the previous quarter: 1-1-09 – 31-3-09

1a. *3000*

1b. *150*

1c. *140*

1d. *14*

Answers to Exercise C

Worksheet 2: Data on HIV testing and HIV status

Circle the previous quarter: 1 2 3 4 of year: 2009

Record the dates included in the previous quarter: 1-1-09 – 31-3-09

2b. 20

2c. 20

2d. 8

2e. 7

Answers to Exercise D

Worksheet 3: Data on TB treatment

Part A – Conversion (for the quarter that ended 3 months ago)

Circle the quarter that ended 3 months ago: 1 2 3 **4** of year: 2008

Record the dates in that quarter: 1 Oct '08 – 31 Dec '08

3a. } *Already done; 9 treatment cards found for smear-positive cases*
 3b. } *put on treatment in 4th quarter of 2008*

3c. *The participant should have noticed that one case (John Masinda) was not new but was a relapse. Thus, John Masinda's card should be "put back in the files" and not counted in the next step.*

3d. 8

3e. 6

Part B – Treatment outcomes (for the quarter that ended 12 months ago)

Circle the quarter that ended 12 months ago: **1** 2 3 4 of year: 2008

Record the dates in that quarter: 1 Jan '08 – 31 Mar '08

3f. 10

Number of cases with each outcome:

3g. 4 Cure

3h. 2 Treatment completed

3i. 2 Default

3j. 0 Treatment failure

3k. 1 Died

3l. 1 Transfer out

Summary Worksheet A: Indicators to monitor TB case detection and HIV testing

To monitor:	Measure these indicators:	Record time frame: ^a	How to calculate (numerator / denominator) ^b	$\frac{x}{y}$	Calculate and record result (%) here:
TB case detection <i>(using data from Register of TB Suspects, compiled on Worksheet 1)</i>	Proportion of outpatients aged 15 years and over who were identified as TB suspects	previous quarter: 1st quarter, 2009	$\frac{\text{Number TB suspects identified (1b)}}{\text{Total outpatients aged 15 years and over (1a)}}$	$\frac{150}{3000}$	5%
	Proportion of TB suspects whose sputum was examined for TB		$\frac{\text{Number TB suspects whose sputum was examined (1c)}}{\text{Number TB suspects identified (1b)}}$	$\frac{140}{150}$	93%
	Proportion of TB suspects tested who were sputum smear-positive		$\frac{\text{Number smear-positive cases detected (1d)}}{\text{Number TB suspects whose sputum was examined (1c)}}$	$\frac{14}{140}$	10%
HIV testing and status <i>(Using data from TB Treatment Cards, compiled on Worksheet 2)</i>	Proportion of all TB patients who were tested for HIV before or during TB treatment		$\frac{\text{Number of TB patients tested for HIV (2c)}}{\text{Number of TB patients (2b)}}$	$\frac{20}{20}$	100%
	Proportion of all HIV-tested TB patients who are HIV positive		$\frac{\text{Number of HIV-positive TB patients (2d)}}{\text{Number of HIV-tested TB patients (2c)}}$	$\frac{8}{20}$	40%
	Proportion of all HIV-positive TB patients who are on CPT		$\frac{\text{Number of HIV-positive TB patients on CPT (2e)}}{\text{Number of HIV-positive TB patients (2d)}}$	$\frac{7}{8}$	87.5%

^a The time frame applies to the denominator. The persons in the numerator are part of this group.

^b Step numbers in parentheses tell where to find the numerator and denominator on Worksheet 1, 2 or 3.

Summary Worksheet B: Indicators to monitor TB treatment

To monitor:	Measure these indicators:	Record time frame: ^a	How to calculate (numerator / denominator) ^b	$\frac{x}{y}$	Calculate and record result (%) here:
TB treatment <i>(using data from Register of TB Suspects and TB Treatment Cards, compiled on Worksheet 3)</i>	Conversion rate: Proportion of new sputum smear-positive TB cases that converted at 2 or 3 months	quarter that ended 3 months ago: 4th quarter, 2008	Number new smear-positive cases that converted at 2 or 3 months (3e) Number new smear-positive cases put on treatment (3d)	$\frac{6}{8}$	75%
	Treatment outcomes: Proportion of new sputum smear-positive cases that:	quarter that ended 12 months ago: 1st quarter, 2008	Number new smear-positive cases cured (3g) Number new smear-positive cases put on treatment (3f)	$\frac{4}{10}$	40%
	– were cured		Number new smear-positive cases that completed treatment (3h) Number new smear-positive cases put on treatment (3f)	$\frac{2}{10}$	20%
	– completed treatment		Number new smear-positive cases that defaulted (3i) Number new smear-positive cases put on treatment (3f)	$\frac{2}{10}$	20%
	– defaulted		Number new smear-positive cases that failed treatment (3j) Number new smear-positive cases put on treatment (3f)	$\frac{0}{10}$	0%
	– were a treatment failure		Number new smear-positive cases that died (3k) Number new smear-positive cases put on treatment (3f)	$\frac{1}{10}$	10%
	– died		Number new smear-positive cases that transferred out (3l) Number new smear-positive cases put on treatment (3f)	$\frac{1}{10}$	10%
– transferred out					

^a The time frame applies to the denominator. The persons in the numerator are part of this group.

^b Step numbers in parentheses tell where to find the numerator and denominator on Worksheet 1, 2 or 3.

Answers to Exercise E, continued

Answers to questions in the module, pages 81–82:

- 3.
- a) 140 TB suspects had their sputum tested.
93% of TB suspects had their sputum tested.
 - b) 20 patients were tested for HIV.
40% of the TB patients tested are HIV-positive..
88% of the HIV-positive TB patients are on CPT.
 - c) In the quarter that ended 3 months ago, 8 new sputum smear-positive cases were put on treatment. Of these cases, 6 converted at 2 or 3 months. This means that 75% of the cases converted.
 - d) 10 new sputum smear-positive cases were put on treatment.
 - e) 4 cases of the 10 were cured.
That means that 40% (4/10) were cured.
 - f) 2 cases completed treatment.
That means that 20% (2/10) completed treatment.
 - g) 40% cured + 20% completed = 60% “treatment success”
 - h) 2 cases defaulted. That means 20% (2/10) defaulted.

Answers to Exercise F

Part A: Graph

Graph: The final points plotted should be 140 TB suspects tested and 14 sputum smear-positive cases detected.

1. The number of TB suspects tested has increased greatly (tripled).
The increase could be due to improvements in the following areas:
 - better identifying TB suspects among sick patients,
 - screening all adults attending the facility for cough of more than 2 weeks' duration,
 - collecting sputum samples from TB suspects,
 - being sure to send the sputum samples to the laboratory, and
 - obtaining and recording results of sputum examinations.
2. The number of sputum smear-positive cases detected has stayed about the same. The percentage of TB suspects tested who were smear-positive is now in the expected range (14 out of 140, or 10%). Formerly, although fewer TB suspects were tested, a much higher percentage were smear-positive, suggesting that sputum samples were only collected for patients who obviously appeared sick. Since the number of cases detected has not increased with the number of suspects tested, it is possible that health workers were doing a good job “guessing” who had TB.

Another possible explanation is that, by aggressive testing, the health centre is now finding almost all of the smear-positive TB cases in the community; if this is true, the number of cases detected each quarter is not likely to increase. However, cases are probably being detected earlier so that they are less likely to infect others.

Part B: Analysing indicators

1. The last row should show:
The proportion of all TB patients who were tested for HIV before or during TB treatment = 20 out of 20, or 100%
The proportion of all HIV-positive patients who are on CPT = 7 out of 8, or 88%.
 - a) Yes, it has reached 100%.
The training was successful.
 - b) It has not reached 100%, but it has reached the desired level, because the only case who is not on CPT was taken off it because of an allergy to co-trimoxazole.
 - c) It could decrease if supplies of co-trimoxazole were insufficient, or if new staff were not trained to provide CPT to HIV-positive TB patients.

2. The last row of the table should show that 6 out of 8 cases, or 75%, converted.
 - a) The conversion rate has increased.
Patient compliance and treatment practices are probably improving.
 - b) The conversion rate has not quite reached the desired level of at least 80%.
There may still be some problems with patient compliance or treatment practices.
3.
 - a) The proportion of cases cured is higher than the proportion that completed treatment. This suggests that follow-up sputum examinations are being done to prove cures. However, it is important to try harder to do follow-up examinations on all of the cases.
 - b) The proportion that completed treatment plus the proportion cured is 60%.
The proportion that defaulted is 20%.
 - c) 20% default is much higher than the desired percentage of less than 5%.
Improvements may be needed to ensure that patients do not default, and that outcomes are found for patients who transfer.

Investigate problems related to convenience of treatment and motivation of patients:

- Must TB patients wait to receive treatment?
- Are community treatment supporters used as needed?
- Do patients understand the importance of completing treatment even after they feel better?

Possible Answers to Exercise A

Panola Health Facility Infection Control Procedures

- ✓1. All health workers should wash their hands before and after each patient contact.
- ✓2. The waiting area for sick patients is moved to the outdoor breezeway.
3. The waiting room for well patients and non-infectious patients is still in the front room. The fan in the waiting room should ~~stay in front of the open window to blow fresh air into the room.~~ **be placed in a window to pull air out of the health facility and blow it to the outdoors.**
4. ~~Persons with HIV are asked to wear masks in the waiting area so that they won't catch TB or other infections.~~ Masks or tissues may be given to ~~others~~ **persons who cough who request them to protect themselves from infection to help prevent the spread of infection to others.**
- ✓5. The exhaust fans in the three examination rooms will be maintained in working order and should remain on during the day.
6. Keep all other windows ~~closed~~ **open** all day, and air out the facility at closing time.
7. Staff should ~~wear masks~~ **ensure good ventilation** in the room when giving directly-observed treatment to new TB patients.
8. TB suspects should be sent ~~to the toilet~~ **outdoors** to cough up sputum, not into the hall.
9. HIV-infected persons who **are household contacts of a TB patient and do not have TB** will be given IPT.
- ✓10. Dispose of all needles in the sharps container.

