NTP TRAINING MANUAL

NTP
Training Manual

January 2012

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Preface

The Revised Training Module took a little longer than was anticipated. The dynamic flow of new evidence based information to guide Management of Tuberculosis was so rapid that, the Module development group needed time to digest and weigh relevant portions of the new evidence, for adaptation into our Ghanaian specific context. For the first time civil society groups were invited to be part of the training manual task team.

This has been rewarding and very challenging, but the contributing experts and groups have very well executed the tasks involved.

The diagnosis, treatment and the public health approach to care is based on International Standards for Tuberculosis Care (ISTC). These standards have been improved with introduction of new case definitions, tools, diagnostics and approaches.

The National Tuberculosis Control Programme has left no stone unturned to ensure that health care providers have good access to evidence based information, new equipment of facilitate care and support to TB patient care.

These training modules will provide the update knowledge, information and skills for optimum health care delivery. The accompanying desk aide serves as a quick reference manual to all stakeholders to acquire requisite knowledge and skills to manage TB cases.

It is my hope that the training modules will be used in every basic health training institution, primary, secondary, tertiary in both private and public in the country.

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Acknowledgement

The Desk Aide, Training Modules and Workbook are revised editions of the first editions originally developed by Dr. Frank Bonsu, Ms Phoebe Balaguityime and supported by Professor John Walley of University of Leeds, UK, and a working group led by Professor Adukwei Hesse of University of Ghana Medical School and Prof. E.H. Frimpong of School of Medical Science, Kwame Nkrumah University of Science and Technology.

In the current Edition the following experts and technical groups made tremendous contributions and are gratefully acknowledged.

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CHAPTER ONE

INTRODUCTION TO THE COURSE

INTRODUCTION

Welcome to a TB Course that produces a "5 Star"* health worker. It has been organised by the National Tuberculosis Control Programme (NTP). All health workers that are, or will be involved with the management of Tuberculosis (TB) patients are being trained including clinicians, nurses, pharmacists, public health workers, laboratory technicians and others. The facilitators will include clinical doctors, health care managers such as Deputy Directors Public Health and Clinical Care, District Directors of Health Services and Regional and District TB Co-ordinators (RTC and DTC)

The aim of the DOTS programme is to provide a quality integrated TB service to people at all levels by means of standardised diagnosis, treatment and community-based care and support systems.

THE OBJECTIVE OF THE COURSE IS

- *To improve the knowledge, skills and attitudes necessary to fulfil the relevant roles/responsibilities of the health worker in the TB programme at all levels of the health care delivery system.*

You will learn all the relevant TB activities for you to be able to provide quality TB prevention, treatment and care. Of course, some of these activities will be familiar to some of you but to others they will be new.

COURSE MATERIALS AND METHODS

The course has been divided into 17 chapters and every health worker will be expected to study each chapter and concentrate on aspects relevant to their role e.g. doctors, nurses, laboratory personnel and TB co-ordinators play different roles in the implementation of the TB programme.

The manual contains the basic information needed to correctly fulfil your role in the TB programme. These chapters include group discussions, written exercises, role-plays and practice sessions dealing with actual cases. Consequently, by working through the book you will have the information needed to fulfil your role, as well as have the chance to practice the actual skills that will enable you to do the job. A separate workbook containing the exercises and other practical activities is also provided.

The course will take place over 3 or 4 days and will be led by specially trained course facilitators. Each participant will read through the text of the course book at his or her own speed. At certain times, the facilitator will bring the group together for activities such as discussions and role-plays. The facilitators will be available for you to raise questions and ask for clarification of any issue that you may not fully understand.

POST TRAINING ASSESEMENT

Please remember that post training assessment will be conducted 3, 6 and 12 months after this training. A team will follow up to review your work through either a questionnaire or one-on-one interview and observation to assess the quality of your work and the impact on TB care. The assessment will cover the completeness, and quality of documentation on those forms you are directly using, as well as your facility outputs.

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*A 5 star health worker combines clinical care of TB patients with community TB care using public health approach

THE CASE MANAGEMENT DESK-AIDE

The case management guidelines for Ghana have been prepared in the form of a desk-aide and each participant on this course has been issued a copy. This desk-aide is useful during training but also serves as an easy reference for use in your daily work. Copies will be available in every treatment and diagnostic centre.

Take a few minutes to look at your copy. Do not read each page in detail. Instead look through the pages to get an overall idea of the guidelines. The desk-aide follows the logical sequence of steps that must be carried out during the care of a person with TB, according to the national TB guidelines. It includes checklists of essential points and has been adapted to fit our local situation.

You will see that different pages in the guidelines are to be used by different health workers. This course will teach you in detail how to use various sections of the case management guidelines. We will also present a summary of the main points of the pages that you will not be using. It is important for each worker to be aware of the other stages in the care of a TB suspect and TB patient.

HOW IS THE DESK-AIDE ORGANISED?

The desk-aide follows step by step the process of delivering TB care, from the presenting symptoms to the cure or successful treatment complete. The topics of the desk-aide are:

1. Suspecting TB in People with Cough
2. Diagnosing TB in a Patient
3. TB/HIV Co-Infection
4. Categorising TB Patients
5. Prescribing Drugs for the TB Patient
6. Educating the Patients about TB/HIV – Health Worker
7. Helping the Patient Select Appropriate Treatment Supporter
8. The Role of the Treatment Supporter
9. Managing Household Contacts – Health Worker
10. Follow-up Visits – Health Worker
11. Follow-up at Diagnostic/ Treatment Centre – Clinician
12. Identification of Patients at Risk of Defaulting and Default Prevention
13. Managing Treatment Interruption
14. Declaring Treatment Outcome

AN EXPLANATION TO THE SYMBOLS USED IN THE DESK AIDE

Various symbols are used in the desk-aide. They are found next to certain statements and indicate the nature of that statement. The following box identifies the different symbols used

Symbols used in the case management desk-aide

Bullet Key:

- ➢ Main query or step – this refers to a point/area under consideration
- √ Sub query or sub step – this refers to 2 or more points related to a main point
- ☞ Recommended action to be taken
- ❑ Diagnosis or possible condition

For example from page 4 of the desk aide:

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

Suspect TB if any of these are present

- ➢ Cough 2 weeks or more, 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, family or other close contact

REQUEST FOR SPUTUM EXAMINATION

- ➢ Explain the importance of sputum examination
- ☞ Collect 2 sputum samples prefably within 24 hours and send them to the laboratory
- ☞ **Use the TB Screening Questionnaire to ask about a Cough**

This course is directly linked to the Desk Aide

During the course we will study different pages of the desk-aide and for easy reference the relevant section will be reproduced in the course book (as in the box preview). However, it is very important that we actually practice using the desk-aide. For this reason we would like you to use your actual desk-aide during the written exercises, role-plays practice session.

THE COURSE TIME TABLE

The table below gives an outline of the course timetable. The course has been divided into four sessions one on each day. These sessions will follow the stages of the care of a TB patient and the organisation of the TB programme.

CHAPTERS

Day 1

1. Introduction to a TB course
2. Introduction to WHO Stop TB Strategy and TB control
3. Preparing to take part in TB Control Programme
4. Identifying and investigating someone with possible TB

Day 2

5. Interpreting the results of investigations for pulmonary TB
6. Prescribing correct treatment regimen
7. Registering the TB patient
8. Educating the TB patient about TB/HIV and managing contacts
9. Educating the TB patient on Community Based TB treatment and choosing a treatment supporter

Day 3

10. Preparing the treatment supporter
11. Reviewing the patient at treatment centre
12. Reviewing the patient at month 2(3), 5 and 6(8)
13. Identifying and managing patients who interrupt treatment
14. Managing complicated cases

Day 4

15. Maintaining the TB register
16. Reporting in the TB programme.
17. Moving forward as a Team

BEFORE WE START…

In order to ensure that the course runs smoothly, we need to set some "house rules". We need to decide what behaviour is appropriate for our course. The basic "house rules" include:

- We observe time strictly i.e. we start the course on time enabling us to leave on time. This includes starting the actual day on time and returning promptly from breaks. The actual starting and finishing times for each day, and the breaks during the days, will be given to you by the facilitator of the course.
- We concentrate fully on the course. Interruptions during the training disturb not only the person being interrupted but also all the other participants on the course. For this reason participants will not be able to take messages during the course sessions, whether from visitors, or phone calls. Please therefore turn off your cell phones now.
- Recognition of having attended the course requires attendance at all sessions and participation at the end, in the course assessment session.
- Respect each other contribution and opinions

If you have further suggestions for additional "house rules" for this course then inform the facilitator during the group discussion that follows. Record any additional house rules below.

Additional "house rules" for this course:

KEY POINTS

Learning Objectives of the Course

After completing the course participants would have developed the knowledge, skills and attitudes necessary to fulfil the relevant roles and responsibilities of the health worker in the TB programme.

These actual activities will vary and depend on the roles and responsibilities of the health workers being trained.

What is important is that health workers are committed to putting into practice what they have learnt soon after the course.

CHAPTER TWO

INTRODUCTION TO WHO STOP TB STRATEGY AND TB CONTROL PROGRAMME

INTRODUCTION

In this session we will consider why we should be concerned about TB and discuss the STOP TB STRATEGY

LEARNING OBJECTIVES

At the end of this session participants should be able:

- To appreciate TB disease burden
- To understand STOP TB strategy
- To understand the organisation of the NTP

IMPORTANCE OF TB AS A PUBLIC HEALTH PROBLEM

The Global Picture

Tuberculosis (TB) is an old disease but one which health workers all over the world are finding harder and harder to control. The World Health Organization (WHO) in 1993 declared TB a global emergency in recognition of the growing importance of TB as a public health problem. In August 2005, TB was declared an African Emergency.
About one-third of the world's population is infected with Mycobacterium tuberculosis. Worldwide in 2010, there were about 8.8 million new cases of TB disease with 1.45 million deaths. *M. tuberculosis* kills more people than any other single infectious disease agent. Deaths from TB account for 25% of all avoidable deaths in developing countries. Some 95% of TB cases and 98% of TB deaths occur in developing countries. Of cases in developing countries, 75% are in the economically productive age group (15–50 years old).

HIV is fuelling the TB epidemic. In the year 2009, an estimated 11-13% of incident cases were HIV positive. Of people infected with both HIV and *M. tuberculosis,* over 50% will become sick with TB during their lifetime; 10% will become sick per year. Thus, the prevalence of HIV in a community has an important effect on the incidence of TB.

Without treatment and in the absence of HIV infection, 50% of patients with pulmonary TB will die within 5 years, and 25% will remain sick with chronic, infectious TB. Another 25% will spontaneously recover and be healthy (due to strong immune defences) but could become sick again at any time.

The National Picture

It is estimated that Ghana has 86 smear positive pulmonary TB cases per 100,000 population and 106 of all types of TB cases per 100,000 population per year (2011 Global TB Report). This means that with a population of about 24 million we should expect about 26,000 TB cases annually. However, only about 15,800[1] cases were reported in this country in 2011 of whom 50% were smear positive cases. The wide gap between the estimated incident cases and those notified to the NTP may be due to the following:

- Many people with TB do not report to health facilities
- Those who report to our health facilities are not diagnosed as having TB (missed diagnosis)
- Not all diagnosed cases at the health facilities are captured by our disease surveillance system
- Contact tracing and investigation not routinely conducted

[1]National Tuberculosis Control Programme M & E Report 2011

This training is to assist in improving TB case detection and treatment success in health facilities.The national trend of reported TB cases & treatment success for 2005 to 2010 is shown in Figures 1 & .2 below.

Fig.1 Trend of National Reported TB Cases – 2005 - 2010

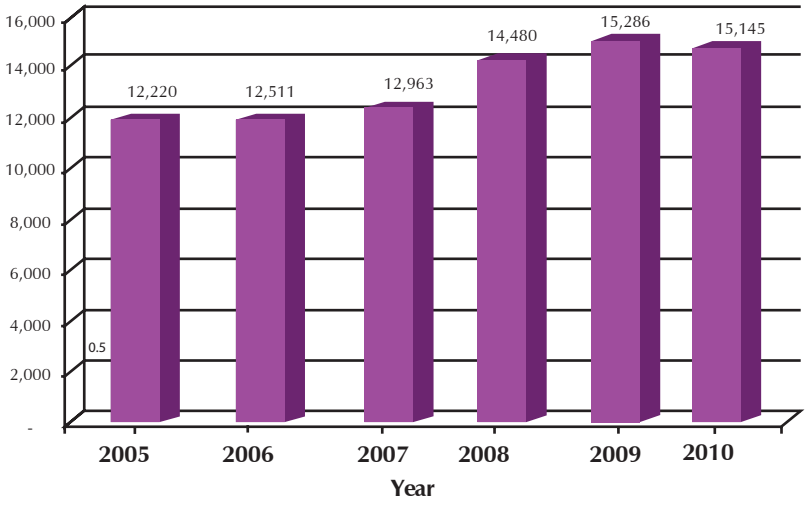
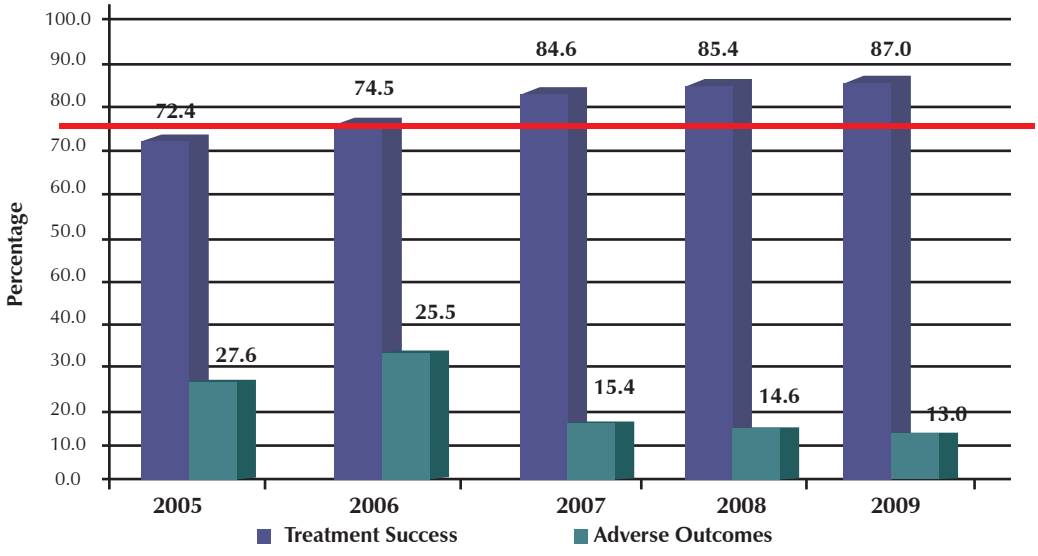


Fig. 2 Trend of National Treatment Success Rate



Most TB patients are adults in the economically productive age group and this adversely affects the national and family economy. Regional distribution trend of reported TB cases and notification is shown below in Tables 1 & 2.

Table 1: All forms of TB cases detected by year and region

All Forms TB Cases Detected By Year and Region											
YEAR	GAR	ASHANTI	EAST	WEST	CENTRAL	VOLTA	NORTH	UW	UE	BA	NATIONAL
2000	1,948	1,817	1,399	1,371	1,555	1,241	390	218	361	633	**10,933**
2001	1,920	1,954	1,688	1,696	1,616	1,259	442	394	323	581	**11,873**
2002	2,042	1,820	1,747	1,605	1,484	1,149	484	314	337	741	**11,723**
2003	2,000	2,260	1,719	1,674	1,412	1,231	383	197	358	662	**11,896**
2004	2,196	2,218	1,533	1,464	1,409	1,250	493	220	382	662	**11,827**
2005	2,412	2,268	1,749	1,716	1,361	1,175	381	225	345	588	**12,220**
2006	2,964	2,214	1,689	1,766	1,125	1,145	437	189	323	659	**12,511**
2007	2,722	2,328	1,704	1,761	1,302	1,102	550	189	524	781	**12,963**
2008	3,384	2,633	1,778	1,920	1,302	1,344	693	238	511	677	**14,480**
2009	3,495	2,596	1,953	1,918	1,578	1,569	550	254	500	873	**15,286**
2010	3,254	2,839	1,891	1,817	1,616	1,390	548	270	660	860	**15,145**

Table 2: TB case notification by region

Case Notification rates per 100,000 pop.											
YEAR	GAR	ASHANTI	EAST	WEST	CENTRAL	VOLTA	NORTH	UW	UE	BA	NATIONAL
1997	74	53	86	60	91	70	22	42	70	43	62
1998	65	54	91	79	105	74	25	45	44	40	63
1999	63	40	69	82	104	73	22	28	41	34	57
2000	67	50	67	72	98	76	22	38	39	35	58
2001	63	52	79	86	99	76	24	67	35	32	61
2002	65	47	81	79	89	68	25	53	36	39	59
2003	61	56	76	79	81	70	19	32	36	34	58
2004	64	53	67	67	80	70	24	35	39	33	57
2005	67	53	75	76	75	64	18	35	34	28	57
2006	79	50	72	75	61	62	20	29	32	31	57
2007	69	51	71	73	69	58	25	28	51	36	57
2008	83	55	74	77	68	70	31	35	49	30	63
2009	82	53	80	74	80	80	24	37	48	38	64
2010	73	56	76	68	81	70	23	39	62	37	62

NOTE: The Local Picture

The DTCs (District TB Coordinator) will now present to us the key points of the local situation; if possible showing

1. The trend of reported TB cases

2. The trend of TB treatment outcomes:
   We will discuss these treatment outcomes later in the training.

EXERCISE

Please note the names of the following key persons. Please fill out these names:

National TB Control Programme Manager…….....

Regional TB Control Coordinator (your region)…….....

Institutional TB Coordinator (your facility)…….....

CONTROL OF TB

Objectives of TB control:

- To reduce mortality and morbidity due to TB
- To reduce the transmission of infection until it no longer poses a threat to public health.
- To prevent the development of drug resistance.

Strategy for TB control

There is WHO Stop TB strategy for TB control. It has 6 components. These are:

1. Pursue high quality DOTS Expansion and Enhancement
2. Address TB/HIV, Multi Drug Resistant (MDR)-TB and other challenges
3. Contribute to health system strengthening
4. Engage all care providers
5. Empower people with TB, and communities
6. Enable and promote research

1. Pursue high quality DOTS Expansion and Enhancement

DOTS is the brand name of the internationally recommended strategy for TB control in response to the global TB emergency. It is a strategy that provides the most effective medicines to TB patients, ensures that they regularly take these medicines as prescribed and monitors their progress towards cure. DOTS has five key components:

- Sustained political commitment to increase human and financial resources and make TB control a nationwide priority integral to the national health system. Commitment to achieve TB control is important at all levels and by all health workers in addition to politicians. This is shown by making TB drugs freely available and by providing clear TB management guidelines. All in authority, including regional and district health directors, must prioritise TB care and make resources available for an effective control programme

- Access to quality-assured TB sputum microscopy for case detection among persons presenting with, or found through screening to have, symptoms of TB (most importantly, prolonged cough of two weeks or more);
- Standardized short-course chemotherapy for all cases of TB under proper case management conditions, including direct observation of treatment (DOT), that is, watching patients swallow tablets every day, and education and support to help the patients adhere to their treatment for the whole period of treatment.
- Uninterrupted supply of quality-assured drugs. The procurement system should make sure that the correct TB drugs are made available at the treatment centres at all times.
- Recording and reporting system enabling outcome assessment of all patients and assessment of overall programme performance. It is important to record the treatment and treatment outcome for each patient on their TB treatment card and the institutional TB register. This is used to monitor performance so we can see whether we are meeting the required programme targets. All health workers should be able to analyse data relevant to their level.

One of the most important components of DOTS is direct observation of treatment, which means that a health worker or other trained person must watch a patient take each dose. This supervision must continue every day throughout treatment. Direct observation is important to:

- Ensure that patients take the correct treatment regularly;
- Notice rapidly when a patient misses a dose, find out why, and solve the problem; and
- Monitor any problems that the patient may have with the disease, treatment, or other symptoms.

The DOTS strategy ensures cure and successful TB treatment completion and therefore prevents transmission of the disease. Other strategies are limited in effectiveness and are more expensive.

2. Address TB-HIV, MDR-TB, and the needs of poor and vulnerable populations

- Scale-up collaborative TB/HIV activities
- Scale-up prevention and management of multidrug-resistant TB (MDR-TB)
- Address the needs of TB contacts, and of poor and vulnerable populations. E.g. children

3. Contribute to health system strengthening based on primary health care

- Help improve health policies, human resource development, financing, supplies, service delivery and information
- Strengthen infection control in health services, other congregate settings and households
- Upgrade laboratory networks, and implement the Practical Approach to Lung Health (PAL)
- Adapt successful approaches from other fields and sectors, and foster action on the social determinants of health

4. Engage all care providers

- Involve all public, voluntary, corporate and private providers through Public-Private Mix (PPM) approaches
- Promote use of the International Standards for Tuberculosis Care (ISTC)

5. Empower people with TB, and communities through partnership

- Pursue advocacy, communication and social mobilization
- Foster community participation in TB care, prevention and health promotion
- Promote use of the Patients' Charter for Tuberculosis Care

6. Enable and promote research

- Conduct programme-based operational research
- Advocate for and participate in research to develop new diagnostics, drugs and vaccines

KEY POINTS

The elements of the TB "DOTS" are:

1. Sustained commitment to achieve TB control.
2. Diagnosis by sputum smear microscopy as the first line of investigation
3. Treatment with standardised treatment regimen with support to help patients achieve cure, including direct observation of treatment (DOT).
4. Uninterrupted supply of drugs
5. Monitoring of the programme with standardised recording and reporting system enabling outcome assessment for each patient.

TB Control in Ghana

The mandate of the National Tuberculosis Control Programme (NTP) is to provide leadership for the health sector response to fight tuberculosis in Ghana.

The Health Service is organized into a three-tiered administrative system: national, regional and district levels but is five tiered in terms of service delivery: national, regional, district, sub-district and Community Health Planning and Services (CHPS) zones. TB control is fully integrated into the health system.

The National TB Control Programme (NTP) was launched in 1994 and aims at reducing the transmission of the disease to a level where it is no longer a major public health problem.
The National TB Control Programme shares in the mission of the Global Stop TB partnerships.

Mission:

- Ensure that every TB patient has access to TB treatment and care
- Stop Transmission of TB
- Protect vulnerable populations from TB
- Reduce the social and economic toll that TB exerts on individuals, families, communities, and the nations

NTP :

Presently the NTP has an ambitious goal is to provide universal access to care for all TB patients and to achieve 100% case detection. These are implemented through the 6 Stop TB Strategies.

From 4% in 2002, the NTP has trained 7% of 42,000 public service providers in at least one TB component by 2008. Among those trained to ensure quality of care and programme implementation, there is high staff turnover due to transfers and attrition thereby creating training gaps for new personnel.

Table 3: PHC Staff available and needed for TB control countrywide, 2011

	Needed	Available	Trained
Total staff	30,000	42,000	3,147
Laboratory technicians	1,200	800	60
Programme Management staff (National)	24	15	10
Regional M&E focal points	10	0	-

The **outcome and impact** indicators of this **training** are geared towards supporting achieving the MDG goals and targets:

1. To accelerate on-going efforts to reduce TB prevalence rate from 172 per 100,000 population in 2005 to 100 per 100,000 population by 2015
2. To reduce TB case fatality rate from 9% in 2006 to 5% by 2015
3. To increase treatment success rate from 84% in 2007 to 90 % in 2015
4. To increase case detection rate to at least 70 % in 2015

EXERCISE

Think about your district case NOTIFICATION and treatment success.
Have the national targets been achieved?
How do your district compare with the national situation described above?
What are the particular issues and problems preventing the achievement of your district targets?
Consider how this course, and other actions following the course, will help to solve these problems.

HOW CAN WE IMPROVE THE SITUATION?

The situation will be improved generally but guided by the following principles.

1. Universal access to quality TB care and control services including DR-TB
2. Community systems strengthening and ownership to improve TB outcomes
3. Sustainability of interventions within programmatic and health systems context.
4. Equitable distribution, pro-poor with social and gender sensitivity TB services.
5. Public and private partnership (PPP)

THE COMMUNITY-BASED TB PROGRAMME (CB – DOTS)

The National Tuberculosis Programme (NTP) community-based TB programme (CB – DOTS), is based on a model that has been tested in different situations in different countries. It incorporates the current WHO recommendations and it is in consonance with the national policy on community based service delivery, which seeks to improve access and expand coverage (CHPS –community based health planning and services).

The main thrust of this concept is based on:

- Integrated community based TB care using CHPS as vehicle for delivery of services in collaboration with treatment supporters, community volunteers, NGO's, coordinated and supervise by CHO's and ultimately District TB coordinators.
- The use of standardised case management guidelines for care.

PROCESS OF COMMUNITY-BASED TB CARE

The identification, investigation, diagnosis, treatment, support and review of a person with TB will involve different health workers at different stages. These workers are not all based in one place. Some are based at health centres, others at diagnostic centres (facilities with a laboratory), and others are based in the community. CB-DOTS links these different health workers and facilities in an integrated and co-ordinated way. In this way, care is patient centred and is done:

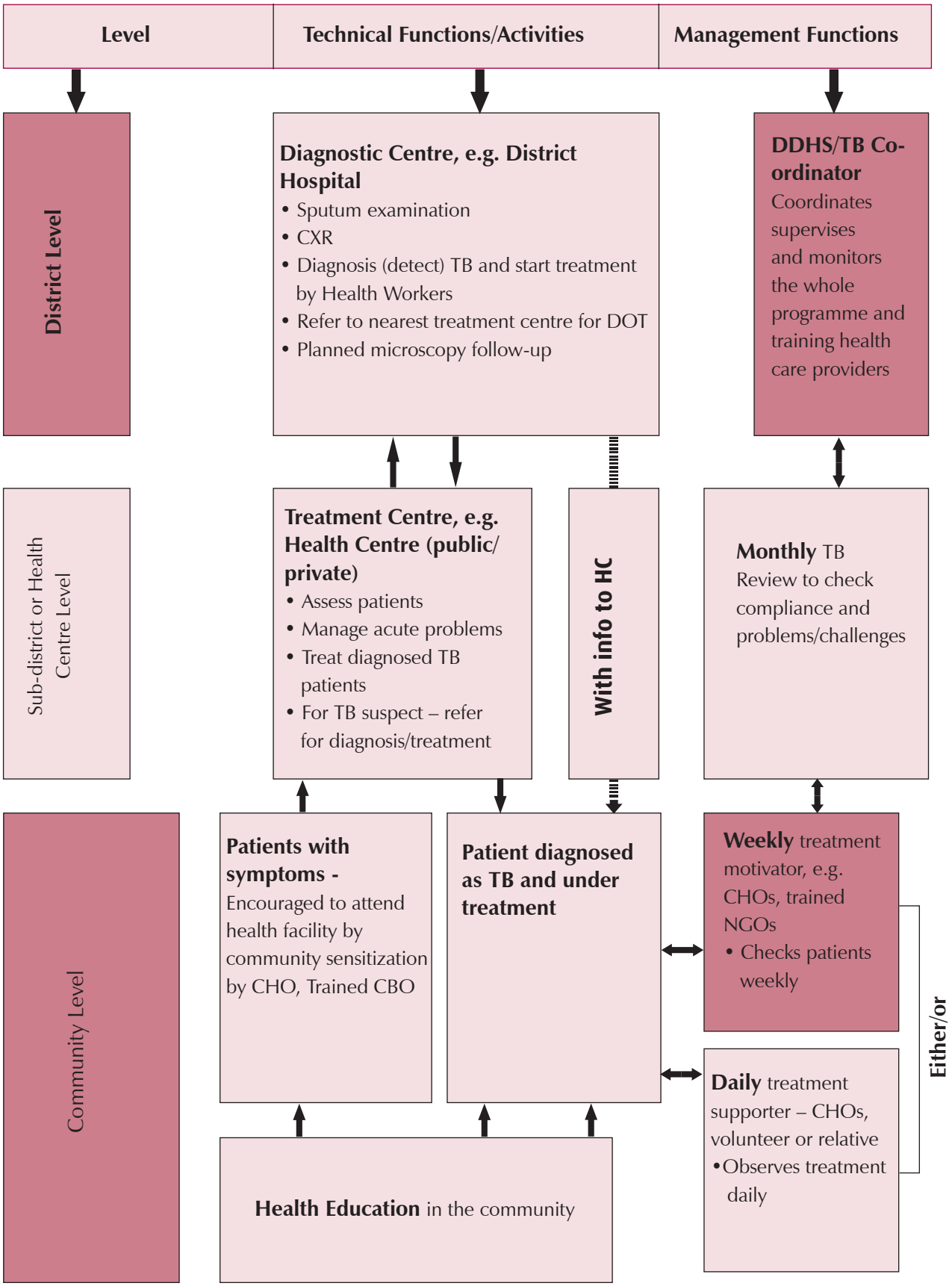
- In the most appropriate place convenient to the patient
- By the most appropriate person
- At the appropriate time.

Note that TB services are integrated into the general health service and are expected to receive support as any other programme in the health service.
Now let us look at the box on the following page which summarises the main roles of the various players in community TB programme.

AN OUTLINE OF THE DISTRICT COMMUNITY-BASED TB PROGRAMME

- All health facilities will work together to provide consistent and integrated care.
- Standard case management guidelines will ensure that everyone is using the same criteria for diagnosis, treatment and organising community based TB care/DOTS.
- Some health facilities are designated **diagnostic centres**. These are health facilities that have trained laboratory staff to accurately diagnose TB and authorise the correct treatment regimen. (e.g. district hospital, regional hospital, etc.)
- Some health facilities are designated **treatment centres**. These are health facilities that have trained nurses or paramedic staff that review patients every month, continue educating the patient and report any problems to the diagnostic centre. (e.g. health centre, mission clinic, etc)
- There is a **TB co-ordinator in each district** that is responsible for co-ordinating all TB activities in the district, collecting data for the TB programme and preparing quarterly reports.
- **Case management guidelines** will be used to maintain standard care
- Community-based volunteers, NGO's, health workers are designated **treatment supporters** who see the patient every day and watch them swallow their tablets. They support, encourage the patient and report problems to the treatment centre. (E.g. *community health officer* {*CHO*}). If there is no suitable *CHO* nearby, a member of a community based NGO or an environmental health worker may be trained for this. Alternatively a community volunteer or responsible family member may be trained as a treatment supporter and the patient may only have to visit the *CHO* every week. The patient will be given the option to choose his/her treatment supporter.
- Integrated care will be maintained by **improving communication** between the different levels of health care.

Fig. 3: District TB Control Programme



You will have seen from the above diagram that different health workers are responsible for certain activities in the TB control programme. In addition, different activities are located in different health facilities. The two main types of health facilities are the treatment centres and the diagnostic centres. It should be noted that diagnostic centres are usually also treatment centres and their roles is a combination of the two. *Their roles are summarised below.*

Activities based at the treatment centre

- √ Educate all clients on TB
- √ Triage and separate patients presenting with cough.
- √ Administer TB screening tool to suspects
- √ Introduce and maintain TB suspect register
- √ Arrange sputum collection and transportation to Diagnostic centres
- √ Ensure results are ready within 24 hours
- √ Refer all smear negative patients to clinicians
- √ Counsel and start treatment for all smear positive patients
- √ Refer to the nearest CHO if necessary
- √ Conduct home verification and contact tracing
- √ Supply TB drugs to community based service providers
- √ Review TB patients on monthly basis
- √ Maintain patient records
- √ Keep register of clients (Institutional register) and prepare treatment outcomes
- √ Refer people for follow up examinations at the diagnostic centre
- √ Identify and trace potential defaulters and inform the DTC.
- √ Maintain a sufficient stock of drugs and materials of the TB programme at the treatment center
- √ Educate on TB/ HIV
- √ Offer provider initiated HIV testing and counseling
- √ All TB/HIV patients should be registered with the HIV/ART clinic
- √ Report figures on HCW diagnosed with TB
- √ The patients should be offered the opportunity to identify treatment supporter

Activities based at the diagnostic centre

- √ Identify people who may have TB from patients attending the centre
- √ Arrange sputum examination for people suspected of having TB
- √ Review patients and their sputum results
- √ Diagnose, classify and categorise patients having TB
- √ Prescribe correct drugs to TB patients according to national guidelines
- √ Register TB patients in Institutional register
- √ Identify suitable treatment centre for the patient
- √ Provide observed treatment, or refer to community-based observed treatment.
- √ Review patients for smear examination at appropriate times(follow-up smear examination
- √ Support the treatment centres when difficulties arise with the management of patients
- √ Maintain patient records and TB register
- √ Maintain sufficient stock of TB medicines TB programme logistics and supplies at the diagnostic centre
- √ Prepare quarterly reports on case finding including/HIV information , and treatment outcome
- √ Educate on TB/HIV
- √ Education of TB infection control with emphasis on cough etiquette
- √ Conduct contact investigation for index TB cases

KEY POINTS

TB remains a major public health concern in Ghana. The HIV epidemic is one of the reasons that accounts for this observation.

Case notification is relatively low. A combined health facility and community based approach has the potential to increase the case detection and notification

DISTRICT TB CONTROL PROGRAMMES – Roles of the Health Care worker

Different health workers in the facilities and communities are responsible for certain activities in the TB programme as shown below.

FACILITY LEVEL

Diagnostic centre (hospital) – laboratory and Medical Officer's/Prescriber role:

a) Lab personnel send results to requesting Prescriber

b) In smear negative results seek MO judgement if TB

c) Counsel on HIV test and arrange HIV services

d) Where appropriate* temporarily admit, and

When ready for discharge:

- Fill transfer/ referral form
- Refer to nearest Treatment Centre

Treatment Centre (Health centre) – Trained Health worker's role:

(Whether or not in a laboratory)

a) Identify TB suspects (any health worker)

b) Send 2 sputum samples to laboratory

c) Interpret sputum smears. If:

i. 1 sputum positive treat as TB

ii. negative refer to M.O

d) Counsel on TB & offer CB-DOTS, and adherence counselling (Recommend HIV test if available)

e) Enter into institutional TB Register

f) Facilitate the choice of a treatment supporter

g) Orient patient and treatment supporter

h) Inform CHO (if available)

i) See the TB patient monthly

j) Review for adherence, side effects and re-supply drugs

*Admit if a new TB patient needs hospital DOTS.

Note: If diagnosed at a distant facility (e.g. the hospital without admission), TB patients are referred to their nearest health center. Here patients are educated and encouraged to select a treatment supporter. If there is likely to be a delay in this process, the patient can attend daily DOT until the treatment supporter is oriented and given drugs.

If they have been admitted and started treatment, e.g. because they were very ill, the patient and family member are oriented on community base DOTS. When TB patients improves he/she can be referred to the treatment centre and to attend daily for DOT until a treatment supporter has been identified and oriented.

COMMUNITY LEVEL CHO'S ROLE

The CHO may be chosen as treatment supporter

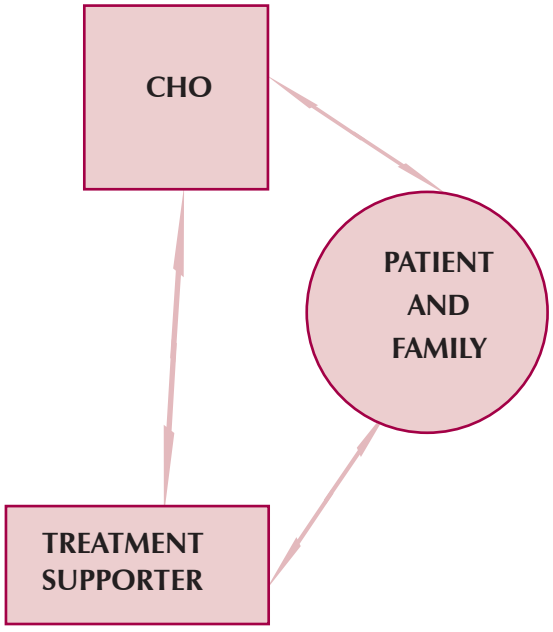
a) Refer people with cough >2 weeks to diagnostic centre

b) Educate community members

c) Visit treatment supporter and TB Patient

i review adherence to drugs

ii review for side effects



TREATMENT SUPPORTER'S ROLE

a) Direct observation of treatment

b) Mark the TB treatment card

c) Motivate patient

d) Send late attendees or inform treatment centre

e) Help to educate community members

Village health /surveillance volunteer's role

a. Educate community members on TB and DOTS and HIV

b. Identify and refer possible TB suspects

PREPARING TO TAKE PART IN THE TB CONTROL PROGRAMME

INTRODUCTION

As health workers, we interact with people and communicate with them. This we do in order to know their problems and help them.
In this chapter, we will briefly review our knowledge of tuberculosis and then we will be introduced to communication skills - how health workers, can improve communication with patients.

LEARNING OBJECTIVES

At the end of this session, participants should

- Have adequate knowledge about TB for their role as health workers in the TB control programme
- Have sufficient communication skills to improve communication with patients.
    - **Diagnostic centres.** These are health facilities that have trained laboratory staff to accurately diagnose TB and authorise the correct treatment regimen. (e.g. district hospital, regional hospital, etc.)
    - **Treatment centres.** These are health facilities that have trained nurses or paramedic staff that review patients every month, continue educating the patient and report any problems to the diagnostic centre. (e.g. health centre, mission clinic, etc)

PART 1: TUBERCULOSIS - A BRIEF REVIEW

WHAT IS TUBERCULOSIS (TB)?

Tuberculosis (TB) is an infectious disease caused by several species of Mycobacteria. In West Africa, the commonest types are ***Mycobacterium tuberculosis*** and ***Mycobacterium africanum***, usually written for short as M. tuberculosis and M. africanum. These organisms are also known as tubercle bacilli. Usually they affect the lungs, in which case the disease is called ***pulmonary TB.*** Pulmonary TB is the most common type of TB worldwide. If TB affects organs other than the lungs, such as lymph nodes, bones and joints, genito-urinary tract, meninges, pleura, or intestines, it is called extrapulmonary TB. Patients with ***extrapulmonary TB*** are usually not infectious.

HOW DOES TB SPREAD?

TB is transmitted from person to person by droplet infection through sneezing and coughing. The infection is transmitted when the other person breathes in these droplets containing TB bacilli. Once infected with M. tuberculosis, a person stays infected for life but this does not necessarily mean that the person is ill. Most people have strong immune system to overcome the infection. However, some people may develop symptoms of TB disease at any time. Among infected persons without HIV infection, only 1 in 10 (10%) will develop TB disease; most (90%) will remain healthy. The most important trigger for TB disease is weakening of the immune system. Patients with weakened immune systems, such as those with HIV infection, diabetes and malnutrition, are at greater risk of developing TB.

WHAT IS A CASE OF TB?

Definite Case of TB: A patient with ***Mycobacterium tuberculosis*** complex identified from a clinical specimen, either by culture or by newer method such as molecular line probe assay.
Or A patient with ***Mycobacterium tuberculosis*** complex identified with one or more initial sputum specimen positive for acid-fast bacilli(AFB)

Case of TB: A definite case of TB (as defined above) or one which health worker or clinician has diagnosed TB and decided to treat the patient with a full course of TB treatment
Case of pulmonary TB: A patient with TB disease involving the lung parenchyma.

TYPES OF TB

The site of the disease in the body defines the type of tuberculosis illness. Eighty percent of tuberculosis occurs in the actual lung tissue and is called pulmonary TB (PTB). In the other 20%, tuberculosis can be anywhere in the body, for example in the lymph nodes, the abdomen and in other tissues. This is known as extra pulmonary TB (EPTB).

Pulmonary Tuberculosis (PTB)

There are 2 types of PTB:

1. Sputum smear positive pulmonary tuberculosis (Sm+ PTB).
   This is a patient with AFB positive result in at least one sputum sample .

2. Sputum smear negative pulmonary tuberculosis (Sm- PTB).
   This is a patient with two sputum smears negative for mycobacterium on microscopy, but Chest X ray evidence consistent with active tuberculosis. In some cases even though sputum smears are negative for mycobacterium on microscopy, GeneXpert and culture are positive for mycobacterium tuberculosis.

WHAT ARE THE SYMPTOMS OF PULMONARY TB?

TB disease of the lungs may cause the following:

- Cough - this is the commonest symptom of pulmonary TB. It is usually of long duration (usually two weeks or more)
- Blood-stained sputum (also called haemoptysis)
- Chest pain
- Shortness of breath

The patient may also have general, systemic symptoms of TB

- Fever (often at night)
- Loss of appetite
- Weight loss
- Night sweats

KEY POINTS

People with sputum smear positive pulmonary TB are more infectious than people with sputum smear negative pulmonary TB

Without treatment people with sputum-smear positive TB have a higher mortality than people with sputum smear negative TB

Extra-pulmonary Tuberculosis

This is TB disease occurring anywhere other than the actual lung tissue. It includes TB inside the chest but outside the lung. This means that TB of the lymph nodes of the chest and TB of the pleura are classified as extra-pulmonary TB. There are many forms of extra pulmonary TB. These include:

Pleural	Meningeal	Intestinal
Bone	Glandular	Urogenital
Eye	Skin	

Extra-pulmonary TB is relatively more common in HIV positive patients than in HIV negative patients. Diagnosis of extra pulmonary TB is difficult and an experienced medical officer must confirm this as the correct diagnosis. If possible specimen for microscopy or culture should be obtained from the site

Extra-pulmonary TB is not infectious BUT many patients with extra-pulmonary TB may also have pulmonary TB. If so, they will be infectious. **Always check the sputum of a patient with extra-pulmonary TB for tubercle bacilli!**

KEY POINTS

Examine the sputum of all patients with extra-pulmonary TB for TB mycobacterium

If you diagnose pulmonary and extra pulmonary TB in the same patient (for example glandular TB and sputum smear positive pulmonary TB) then categorise as pulmonary TB.
If a patient has several extra-pulmonary sites e.g., Lymph and TB meningitis, the site presenting severe form of TB should be classified and in this case TB meningitis

WHAT ARE THE SYMPTOMS OF EXTRA-PULMONARY TB?

The patient with extra-pulmonary TB may also have the systemic symptoms of pulmonary TB (listed above) and in addition symptoms caused by the local effects of the TB which are:

- **Glandular TB**
  TB of the lymph glands causes enlarged, cold, painless matted glands. The glands are usually firm but later become soft and may discharge pus. Glandular TB is more common in children, and usually occurs in the neck, axial and groin glands.

- **Bone and Joint TB**
  This causes pain, restriction of movement, and swelling. Later pus may discharge through a hole in the skin. Spinal TB may cause acute angulated kyphosis. The commonest sites for bone and joint TB are the spine, hip and knee.

- **TB Meningitis**
  TB meningitis causes slow onset headache, fever, neck stiffness, mental confusion, fits, and drowsiness. TB meningitis is commonest in children aged 5 years and under.

- **Abdominal TB**
  The symptoms of abdominal TB are swelling of the abdomen, pain, fever, diarrhoea and weight loss. It may cause an abdominal mass and intestinal obstruction.

- **Laryngeal TB**
  The symptoms of laryngeal TB are a hoarse voice and severe pain in the throat. It is usually associated with pulmonary TB.

- **Genitourinary TB**
  This causes infertility in women. Renal TB causes painless haematuria, and repeated urinary tract infections.

HIV RELATED TB

TB is one of the infections that commonly occur in HIV infected people. Where HIV infection is common, HIV is causing an increase in TB cases. This is due to the immune deficiency allowing reactivation of latent TB or allowing re-infection. Up to 70% of patients with sputum smear-positive pulmonary TB are HIV-positive in some countries in sub-Saharan Africa. In Ghana the HIV prevalence among TB patients is 15% and it is also estimated that up to 30% of in-patient TB cases have co-infection with HIV.

The clinical picture of TB depends on the stage of HIV infection and the associated degree of immuno-deficiency. With relatively good immunity, TB in HIV infected is similar to that of non-HIV infected people with a high proportion of sputum positive pulmonary TB. With low levels of immunity a higher proportion of TB/HIV patients have smear negative pulmonary TB and extra pulmonary TB.

Diagnosis of smear negative TB in an HIV positive person is difficult because:

- The symptoms of TB are also common in HIV patients without TB, for example chronic cough, fever and weight loss.
- The chest X-ray signs may not be typical.

With low levels of immunity there is also a higher proportion of TB patients having extra-pulmonary TB. Extra pulmonary TB includes TB disseminated through the blood (bacteraemia), and also TB meningitis. ***M. tuberculosis*** is the most common cause of bacteraemia in febrile hospitalised HIV-infected patients.

Treatment of TB/ HIV

TB is curable in HIV positives just as for TB patients without HIV. There is however, a high mortality in TB patients with HIV co-infection. Some of these excess deaths are due to severe (disseminated) TB; others are due to other infections related to HIV. TB treatment for HIV positive patients is the same as those with HIV negative

HIV testing and Counselling in TB Patients

In Ghana, as in other settings of generalised HIV prevalence, all TB patients must be considered as possibly HIV infected. HIV positive TB patients are more likely to suffer from other common infections. These should be identified and treated early.

It is important to discuss with TB patients on the benefits of having an HIV test. This will help reduce the high death rates in HIV related TB. Offering provider initiated HIV Testing and counselling (HTC) has been shown to help people change their sexual behaviour, such as abstinence or regular use of condoms. HIV testing should therefore be offered to all TB patients as part of good medical practice.

If a TB patient is found to be HIV positive, they should be given co-trimoxazole prophylaxis. Co-trimoxazole reduces the risk of other infections, including malaria, and so reduces the death rate. All TB patients found to be HIV positive should be referred for HIV continuum of care including ART. As TB and HIV are so closely linked, there is need for close collaboration between the TB and the HIV/AIDS control programmes at all levels of the health care system.

KEY POINTS

"Two diseases one patient" - TB and HIV are two diseases, but which commonly affect the same patient.

When the immunity level drops due to HIV, smear negative pulmonary and extra pulmonary TB is more common.

Diagnosis of TB in an HIV positive person is difficult because:

- ***The symptoms of TB are also common in HIV patients without TB, for example chronic cough, fever and weight loss.***
- ***The chest X-ray findings may not be typical as HIV negative (Cavitation is rare in HIV positive persons).***

HIV related TB responds to TB treatment in the same way as non-HIV TB. However TB/ HIV patients are more likely to die early during the TB treatment. It is important to look for and treat other HIV related infections.

Discuss with the TB patient on the possibility of HIV co-infection and offer them an HIV test. If they are positive, counsel them to discuss with their partner(s) for them to also have the test and link them to the nearest HIV treatment centre. Counsel them on safe sex and the regular use of condoms. Explain the benefits of regularly taking co-trimoxazole prophylaxis. HIV positive TB patients should be registered with HIV/ART clinic.

WHY DO MOST TB PROGRAMMES CONCENTRATE ON DETECTING AND TREATING PULMONARY TB?

Although extra-pulmonary TB can cause severe, disabling and life threatening disease, many TB programmes concentrate upon detecting and treating pulmonary TB. This is because pulmonary TB is:

- Much more common and hence causes more morbidity (illness) and mortality (death) in society than extra-pulmonary TB
- Infectious and hence is the form of TB that spreads around the community:
- One cough produces 3,000 infected droplets and less than 10 mycobacterial bacilli may initiate a pulmonary infection.
- One person with SM+ PTB may infect 10 persons/year
- TB treatment rapidly renders sputum non-infectious.

Hence, focusing on pulmonary TB treats not only the individual patient but also tackles the TB epidemic by reducing the number of infectious cases and reduces the transmission of the disease.

For this reason this TB control programme course will focus primarily on detecting, diagnosing and treating pulmonary TB. However, the treatment regimens for extra-pulmonary cases will also be presented.

KEY POINTS

A person with untreated sputum positive pulmonary TB will infect, on average, 10 other people in a year.

The detection and treatment of pulmonary TB is a high priority for the TB programme.

Treating pulmonary TB helps reduce the transmission of TB and so reduce its public health impact.

PART 2: COMMUNICATION SKILLS

Imagine the following scene:

A health worker has been called to see a patient in the consulting room. The health worker is busy and impatient to get back to the ward rounds. He rushes in to the consulting room and starts talking to the patient without shutting the door, and greeting the patient. While asking questions, the health worker does not look at the patient but only at the records. He does not notice that the patient is very worried and almost tearful. During the consultation, many patients are wandering past the door looking in. Half way through the interview the telephone rings and the health worker talks on the phone for 5 minutes. After finishing on the phone the health worker looks at his watch, quickly writes a prescription, and leaves.

Without knowing what questions the health worker asked the patient we know that he has shown very poor communication skills! This has included:

- Lack of privacy
- Allowing interruptions
- Not looking at the patient
- Not explaining things to the patient
- Patient may not return to the health facility if symptoms persists

As health workers, you will have been taught how to take a medical history, and have personal experience of talking to patients about their symptoms. Unfortunately, most training teaches only the facts of history taking, and not the skills of how to actually take a good history. Often we do not realise how important communication is and how inadequate our communication skills really are!

This section of our course will consider the importance of communication skills. It is worth spending time looking at methods of improving communication because effective communication is important at different stages of the TB care process. A person is more likely to complete his treatment if he knows what the diagnosis is, understands why the treatment takes so long, and knows the dangers of stopping treatment early. We also know that the way these issues are discussed affects how well a patient understands these points. For these reasons we will study communication skills, and will refer to this section at later stages of the course.

WHY IS GOOD COMMUNICATION IMPORTANT?

Good communication is an essential part of quality care. When ill and seeking help from the health service many patients feel awkward and vulnerable. This can make them lose confidence and not be able to explain their problem well. In addition, many TB patients are poor and not well educated. They feel intimidated by the health worker and reluctant to question him or her if they do not understand.

If the quality of care provided by our health service is of a low standard they may turn to traditional healers or try to buy medicines from quack doctors and treat themselves. This can happen if the patient has difficulty talking to the staff. Similarly, patients may stop taking their treatment early if the health workers are rude and unsympathetic, as this behaviour will naturally make a patient reluctant to come back to the health facility for review. It is obvious from these examples how poor communication can contribute to poor control of TB.

Interviewing someone who may have TB requires good communication skills because they are often:

- Worried about the cause of TB and whether they can be treated
- Embarrassed by the social stigma of TB
- Afraid about confidentiality
- Worried about the attitude of the health worker
- Concerned about being overheard

A health worker with good communication skills will be able to help the patient overcome these barriers.

From the health worker's point of view good communication is also important as:

- Correct and complete information is vital for diagnosis
- Two-way communication with the patient is vital so that we know what the patient understands about his treatment and completes the whole treatment.
- Without good communication skills the health worker may miss information that may affect:
- Correct diagnosis
- Finding out whether the patient is a new or re-treatment case
- The choice of treatment supporter
- Compliance with treatment and cure

THE PRINCIPLES OF EFFECTIVE COMMUNICATION

There are 2 basic stages to effective communication.

1. The health worker must be open and receptive to the feelings and attitudes of the patient. Imagine a patient who is waiting to hear test results about a serious disease. An observant health worker will notice that the patient is anxious about the result and nervous in case other people hear the results.

2. The health worker must be able to make an appropriate response. In the above situation the appropriate response will be to ensure that the results are given in private and without interruption. The responsive health worker will say some words that acknowledge the patient's feelings. This is called showing empathy.

The health worker should be able to remember the feelings expressed by his or her patients and realise that other patients may be in a similar situation and have similar emotions. Indeed, when health workers are themselves ill, they often feel similar emotions.

TYPES OF QUESTIONS

The types of questions used by a health worker also affect how well he or she communicates. We will consider 3 types of questions:

Open questions: Open questions are ones where there are no fixed answers and the patient can therefore answer the question in his/her own way. Always start taking a history by using open questions and move onto more closed questions later. Examples: How do you feel? What do you understand TB to be?

Closed questions: Closed questions are phrased very specifically requiring the answer "yes" or "no". If closed questions are used at the beginning of an interview, patients tend to answer quickly without thinking and tend to say what they think you want to hear. However, closed questions are useful at the end of discussing a point in the history as they allow you to clarify what the patient has said earlier in response to open questions. Example: Do you cough?

Leading questions: These are questions phrased in a way that leads the patient to give a particular answer. They are to be avoided as they can result in misleading information. Example: You are still taking your drugs, aren't you?

Let us consider the use of different types of questions with relation to TB. The most important symptom of TB is a prolonged cough and any person who has been coughing for more than 2 weeks should be considered as possibly having TB. Careful, non-leading, questions about the duration of cough are particularly important.

For example if a patient complains of a "bad cough", you may ask an open question such as "tell me more about the cough". If the response does not give you the needed information, for example, the duration of cough, then ask a more specific question using another open question such as "how long have you had this cough?"

If this does not provide a clear answer, you may need to ask a closed question but with alternatives, such as "has this episode of cough been for a week or a month or longer?". Another way of offering alternatives would be to ask "did your cough start before or after…?" (Insert a locally appropriate event or date. A different event or date can be used depending on the time of year.)

Avoid asking closed questions, especially at the beginning of the consultation. If you ask a closed question, such as "have you been coughing for more than 2 weeks?", the patient may answer quickly without proper consideration and not give the correct yes or no answer

WRITTEN EXERCISE
Refer to page 1 of Workbook

COMMUNICATING W.E.L.L

A useful way of remembering some of these ideas is to remember the acronym: WELL.

W = Welcome your patient

- Ensure privacy and confidentiality
- Greet the patient in a friendly manner Offer him/her a seat
- Ask his/her name

E = Encourage your patient to talk

- Ask general questions "what is your problem", "what are you concerned about"
- Allow your patient to answer
- Nod, agree or say "tell me more about that" to help your patient explain
- Show empathy (I understand how you feel)

L = Look at your patient

- Make sure that your facial expression is warm and friendly
- Maintain eye contact with your patient as he/she speaks
- Observe his/her feelings, as well as his/her general medical condition

L = listen to your patient

- Listen carefully to what your patient has to say and do not interrupt him/her.
  Show the patient that you are interested in what he/she is saying by reflecting back what you have heard.
- That is, repeat what he/she has said in another way to clarify the answers.

By communicating well with people, we can improve a patient's understanding of his/her problem. With better understanding of his illness the patient is more likely to complete a full course of treatment and be cured.

Learning to communicate well is like learning any skill - it needs practice! During this course, we will practise these communication skills when we practise the various roles of the health worker in the TB programme. However, even after the course you will need to continue to practise these skills in your daily work.

KEY POINTS

In order to be effective, every health worker must have:

- basic understanding of TB illness
- good communication skills

CHAPTER FOUR

IDENTIFYING AND INVESTIGATING SOMEONE WITH POSSIBLE TB

INTRODUCTION

In this session we will consider the first activity a health worker will be involved in when caring for people with TB.

LEARNING OBJECTIVES

At the end of this session, participants should be able to:

- Correctly identify TB suspects amongst those who present themselves to the health service
- Manage and investigate such people correctly.

Tasks

In order to meet the above objectives, we will need to complete several tasks. These are:

1. Interviewing the patient to establish the presenting history and other important information
2. Examining the patient
3. Considering TB as a diagnosis
4. Recording patients' details in the register of suspected TB cases
5. Arranging for sputum examination
6. Completing the necessary forms
7. Transporting the sputum samples and sending to laboratory
8. Arranging for the patient to be seen with the results

These tasks are dealt with on page 3 of the TB desk-aide. Turn now to this page of your desk-aide and read it carefully.

TASK 1: INTERVIEWING THE PATIENT TO ESTABLISH THE HISTORY The page has been reproduced below for convenience.

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

- Greet, ask his/her name, and ask what the problem is?

If the patient complains of cough ask:

How long have you been coughing? As necessary, ask further questions to know if the cough has been present more or less than 2 weeks, e.g.:

- 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 colour? Is it stained with blood?
- Does he /she cough more and sweat a lot at night
- Does he/she have fever, if yes, for how long, is it more by day or night?
- How is his/her weight and appetite?

What drugs he/she is taking?Check which drugs and how long taken

Does he/she smoke? If so, for how long ?

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

Most patients with pulmonary TB present with a persistent cough starting soon after the onset of disease. However, cough is not specific to pulmonary TB. Cough is common in smokers and patients with acute upper or lower respiratory tract infections. Most acute respiratory infections resolve themselves within 2-3 weeks. Therefore a patient with persistent cough, lasting for 2 weeks or more identifies that person as a TB suspect. Such a person must have sputum sent for investigation by microscopy.

Patients having a cough for less than 2 weeks, or of uncertain duration, must also be considered as possibly having TB if they also have one or more of the following:

- Blood stained sputum
- Fever, usually at night
- Weight loss

OR

- A history of previous TB in the patient, household or other close contact.

TB patients may have other symptoms, such as chest pain, but these are also common in other diseases. Also we must not forget that TB can co-exist with other conditions. Patients with HIV may develop TB in addition to their chronic illness. It is important to discuss the possibility of HIV and recommend an HIV test. But this is usually done at the next consultation when the patient has been diagnosed with TB (or other HIV-related infection).

It is very important that sputum smear investigation is performed on any person who may be suspected of having TB. This is to ensure that we detect all infectious cases of TB.

The majority of people who present with cough of 2 weeks or more duration are later found not to have TB, but in fact may have pneumonia, asthma or Chronic Obstructive Pulmonary Disease (COPD, often called chronic bronchitis). For these reasons alternative diagnoses must be considered. Remember medical care must be provided for chest patients who are found not to have TB.

As we learnt in chapter 3 it can be difficult to obtain a clear history from the patient. We need to use the communication skills and technical knowledge to decide if a particular person should be investigated for TB.

**A TB screening tool is provided below to assist health care providers to screen for TB.
It will be available at OPD's.**

Fig. 4 TB Screening Questionaire

TB SCREENING QUESTIONNAIRE

NAME: ..... OPD. Folder No:.....

AGE: ..... SEX: M/F DATE: .....

SYMPTOM SCREEN

Do you have any of the following symptoms? (Please circle grade for response)

	Yes	No
Cough more than 2 weeks	2	0
Cough less than 2 weeks	1	0
Sputum production	2	0
Coughing up blood	2	0
Loss of weight in last 3 months	1	0
Drenching night sweats	1	0
Fever	1	0
Chest pain	1	0
History of contact with a TB case	1	0
History of smoking/Alcohol	1	0
Total Score:	☐	☐

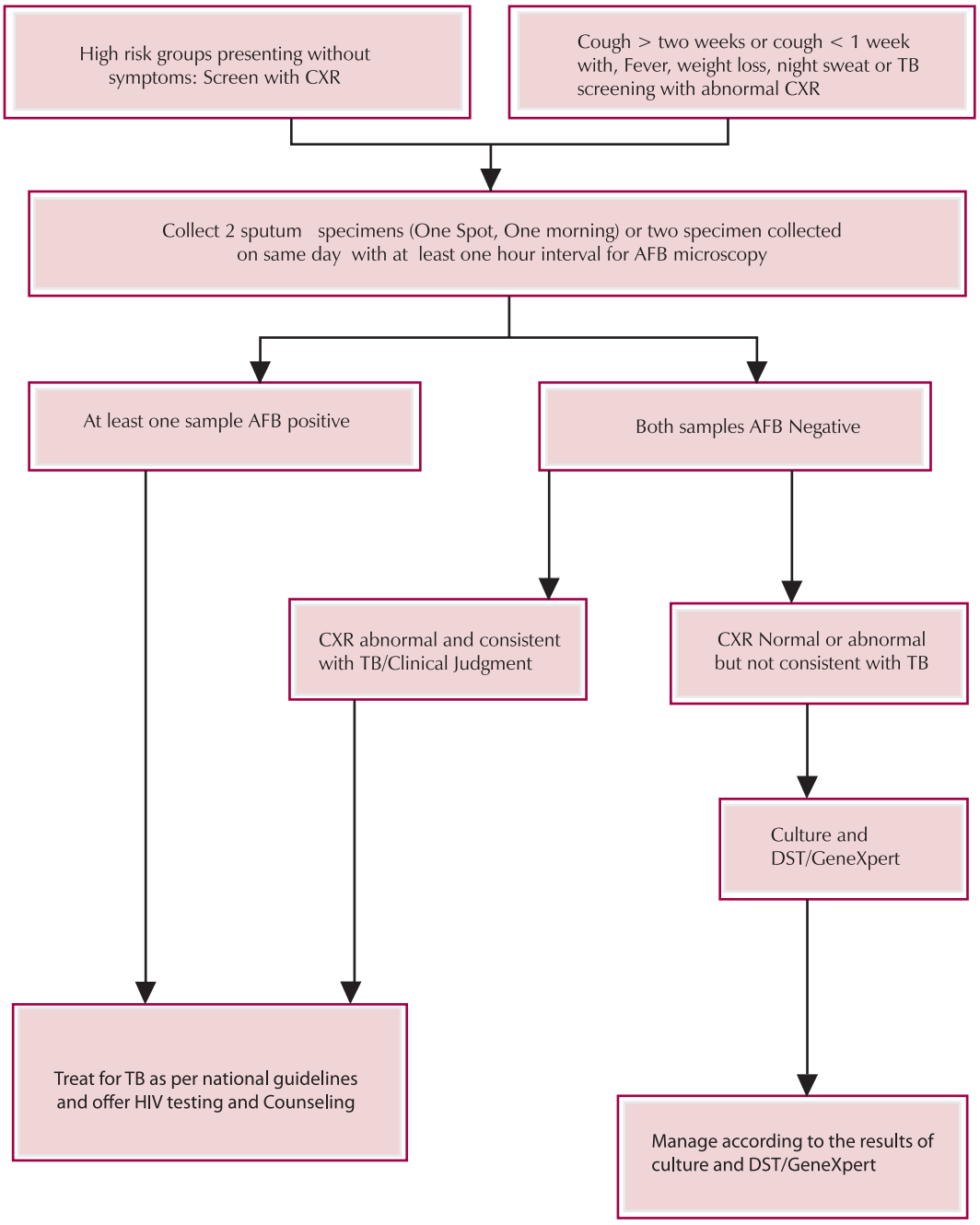
Consider Client as ELIGIBLE for testing IF:	Interpretation
Cough is for 2 weeks or more	**ELIGIBLE**
Cough is less than 2 weeks & score 3 or more on symptom screen	**ELIGIBLE**
Score of 4 or more on symptom screen	**ELIGIBLE**

CONCLUSION (Circle) **ELIGIBLE** **NON-ELIGIBLE**

REQUEST SPUTUM SMEAR MICROSCOPY FOR ALL ELIGIBLE

Possibly Collect 2 sputum specimens within 24 hours

Fig. 5 Algorithm for Pulmonary TB diagnosis



KEY POINTS

Always suspect TB in a patient with a persistent cough for 2 weeks or more with fever, weight loss and night sweat. In the case of HIV positive persons suspect TB if coughing for 24 hours or more.

Always send these patients for sputum investigation.

TASK 2: EXAMINING THE PATIENT

When assessing somebody who has chest symptoms, it is important to do a physical examination. However, in contrast to what many health workers believe, the contribution made by examination findings is much less than the contribution made by a carefully taken and thorough history. The history is often more valuable than the examination findings.

It is beyond the scope of this course to teach the techniques of physical examination. Fortunately, most health workers are familiar with these skills that, unlike communication skills, are taught well in basic training.

Instead we will focus on the particular findings that are important in assessing patients presenting with chest symptoms.

The section of the TB desk aide that deals with examination says:

Examination – look and listen for these signs:

- Good general clinical examination
- Count the pulse
- Take the temperature
- Count the respiratory rate
- Take the blood pressure
- Listen with stethoscope for wheezing or crepitations

A good clinical examination is important in order to spot other problems. In particular, where HIV prevalence is high, detection of problems such as candida and other HIV-related problems is important.

Let's take each of these in turn - the following criteria are used to indicate a seriously ill patient who needs emergency treatment:

- Count the pulse - rate of 125 per minute
- Take the temperature - 40 °C (104 °F)
- Count the respiratory rate

In an adult (over 12 years) (from page 16 of the IMAI acute care guide):

- Fast breathing is more than 20 per minute
- Very fast breathing is more than 30 per minute

In a child 5 – 12 years:

- Fast breathing is 30 per minute or more
- Very fast breathing is 40 breaths per minute or more

In a child 2 months to 5 years:

- Fast breathing is 40 per minute or more
- Very fast breathing is 50 breaths per minute or more

For a child under 2 months, see the IMCI chart book (if available)

A high respiratory rate will be present in pneumonia. The other part of examination, in a patient with cough, suggested is listening to the chest with a stethoscope, to hear if there are any wheezing or crepitations.

For very ill looking patients also take the BP.

- The blood pressure - systolic of less than 90, suggests shock/ heart failure, a patient needing urgent referral/ treatment.

TASK 3: CONSIDERING TB AS A DIAGNOSIS

Having taken a careful history and examined the patient, we are now ready to consider the differential diagnosis. In particular we are considering whether our patient should be considered as a person who needs investigation for TB or not.

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

Suspect TB if any of these present:

- Cough for 2 weeks or more, 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, family or other close contact
- Explain importance of sputum examination and collect and send 2 specimens

Some key problems to consider in patients with cough:

Decide the patient is severely ill if one or more of these are present:

- Impaired consciousness, agitation or lethargy
- Difficulty in breathing at rest or can not talk in full sentences
- Pulse more than 120 in one minute
- Breathing more than 30 / minute in an adult (or 40 per min in a child aged 5-12 years)
- Temperature more than 40°C
- BP systolic less than 90 mm Hg

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 2 samples for sputum 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 of chronic obstructive pulmonary disease (COPD/ chronic bronchitis) if patient has been a smoker and has:

- A recent increase in sputum or change in colour to yellow or green,

☞ Give an appropriate antibiotic, suggest stop smoking and see in one week.

☐ If symptoms persist consider TB, explain and send 2 samples for sputum smears

Little or no change, suggest COPD as below.

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/tepid 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/IV 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 (20 puffs in a row) or nebuliser (2.5-5 mg Salbutamol solution in 2ml saline) if available, and if wheezing continues repeat in 10 to 20 minutes OR give Salbutamol injection 500 microgram (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

More Written Exercises

TASK 4: RECORDING PATIENTS' DETAILS IN THE REGISTER OF SUSPECTED TB CASES

Whenever you identify a person as possibly suffering from TB you must enter the details into the Register of Suspected TB Cases or in the comments column of the outpatient attendance register, and send the sputum samples to the laboratory for examination. This register of suspected TB cases therefore should be a record of all the patients identified as possibly having TB at the Health facility. The register is particularly useful to monitor whether results of sputum examinations are returned to the Health facility from the laboratory or diagnostic centre. Be sure to write down the complete name and residential and traceable address so that the patient can be located if he/she does not return for the result, particularly when the microscopy is positive.

If you do not have a TB suspects register then write the details into an OPD book or register available.

TASK 5: ARRANGING FOR SPUTUM EXAMINATION

We have already discovered that the recommended first line investigation for a patient suspected of having pulmonary TB is sputum smear microscopy. We have learned that this is one of the 5 basic components of the strategy for TB recommended by the WHO and that this strategy forms the basis of the TB programme.

The importance of sputum examination

Sputum examination is the most specific, cost-effective and reliable test for the diagnosis of pulmonary TB. Sputum microscopy is available in the diagnostic centre(s) in most districts.
Sputum examination is important because if positive it confirms the diagnosis of (sputum positive) pulmonary TB. Further, sputum examination provides information on whether response to treatment is progressing well and at the end of treatment shows if they have been cured.

When to do sputum examinations

Sputum examinations should be done:

- In the assessment of any person who is suspected of having TB:
  - Coughing for 2 weeks or more
  - Coughing for less than 2 weeks, or of uncertain duration (24 hours for HIV positive patients) but also has blood stained sputum, fever especially at night, or weight loss.
  - Coughing for less than 2 weeks but also is a contact of a case of TB (especially smear positive) or he/she has had TB in the past
- Two (2) specimens of sputum must always be collected from a person suspected of having TB preferably within 24 hours.
  - Collect on the spot sample from the patient and the second sample an hour later
  - If you cannot collect the second sample in an hour then collect the next day early morning sample
- All pulmonary TB patients have a further single sputum smear examined (preferably early morning specimen):
  - At 2nd month after starting treatment and repeat at month 3, if results at month 2 is positive
  - At 5th month of treatment to ensure that the anti-TB medicines used during the continuation phase are working.
  - At 6th month or 8th months of re- treatment . This is to confirm that the patient has been cured.

The role of chest X-rays in TB diagnosis

- It is now recommended that chest X-ray should be used together with sputum smear microscopy in the early assessment of TB suspects.
- For all suspected cases of sputum smear negative pulmonary TB, a chest X-ray should be done. Where a digital chest X-ray is available this should be used.
- A chest X-ray is useful as a screening tool in certain high risk persons such as:
  - Prisoners
  - PLHIV
  - Diabetics
  - Other immune-suppressed patients, eg Transplants patients, alcoholics, leukaemia etc
  - Patients who had abnormal chest X-rays for other reasons
  - Persons suspected of having TB but not having cough
  - Children

New laboratory diagnostic methods

Molecular Testing

Gene Xpert technique is a highly sensitive and specific, automated, real-time molecular diagnostic test which uses state of the art DNA technology for rapid and simultaneous detection of Tuberculosis and rifampicin resistance (a reliable proxy for MDR-TB) in both HIV negative and positive individuals. The result is obtained in 100 minutes.

Culture types

Culture is the Gold standard for TB diagnosis

Solid Culture (Lowenstein-Jensen (LJ): Solid culture method are less expensive than liquid culture system, but results are invariably delayed due to slow growth of Mycobacteria.

Liquid Culture (Mycobacteria Growth Indicator Tube (MGIT): Liquid culture increases the case yield by about 10% over solid media and also reduces the delay in results to days rather than weeks. Liquid systems are however more prone to contamination as well as that the machines are sensitive to temperature fluctuation

What about tuberculin testing?

The tuberculin test is one in which purified protein derivatives (PPD) of BCG bacilli are injected into the dermis (skin) and the body's reaction (an induration) is measured. The tuberculin test does not measure immunity and by itself does not indicate the presence or the severity of tuberculosis. It only indicates exposure to infection. Tuberculin testing has a role in diagnosing TB in children and TB suspects in which other diagnostic tests were not helpful.

In Ghana, due to exposure to environmental mycobacteria, the tuberculin test may be positive in the absence of TB disease. Most Ghanaian adults (up to 60%) have a positive reaction in the absence of TB disease. A test is negative if the diameter of the swelling is less than 10 mm and positive if 10 mm or more. Suspect TB if the swelling is more than 15 mm in diameter with or without symptoms and if 10 mm or more in the presence of symptoms.

A negative tuberculin test does not exclude TB and may be found in situations in which immunity is suppressed, such as: HIV infection, malnutrition, over whelming TB, severe bacterial infections, cancers, and immunosuppressive drugs.

What about the ESR?

The ESR is a non-specific test for inflammation in the body and is increased in many illnesses including TB. For this reason it is not useful in the diagnosis and management of TB.

How do we organise sputum examination?

Sputum examination is the key investigation in TB. Health workers will need to explain to patients how to produce good sputum specimens.

The desk aide deals briefly with this. It is reproduced here.
The desk aide reminds us of the outline of the process. But how exactly do we "teach the patient how to produce a good sputum specimen"?

Sending a patient for sputum smear examinations

It is necessary to explain the importance of the sputum examinations to the patient. If the patient expects to have an X-ray he/she may feel that a sputum examination is an insufficient test. It is important to explain to the patient why sputum examinations are needed, and why 2 samples are required for the first examination. After you have done this you must explain exactly:

1. How to produce sputum.
2. Where the sputum samples should be produced.
3. Where they will be examined.
4. How they should be transported there.

Instruct the patient and supervise the first sputum collection. This must be done in the open or where there is good ventilation. Instruct the patient how to collect the early morning sputum at home when needed.
The patient must produce 2 specimens within 24 hours

- "On-the-spot 1" is the name given to the specimen first collected.
- "On–the-spot 2" is the name given to the specimen collected at least one hour after the first sample.
- If collection of the 2nd specimen could not be done then early morning specimen (this is the specimen produced by the patient immediately he/she wakes up the following day) should be collected

NB: ***For quality early morning specimen, instruct the patient to wash the mouth with water as soon as he/she wakes up and then cough sputum into the container. He/she should not use mouth wash, chewing stick/sponge or paste before the specimen is taken. This specimen is collected unsupervised.***

GUIDELINES FOR THE COLLECTION OF SPUTUM SPECIMENS

It is very important to collect a good sputum specimen and not saliva in order to make sure that any bacteria present are identified. If a poor quality specimen is examined, the bacteria may not be seen, the diagnosis may be missed and ultimately the correct treatment will not be given.

The following 7 steps will help you teach the patient how to produce a good sputum specimen.

STEP 1: LABEL THE SIDE OF THE SPUTUM CONTAINER

- Sputum specimen 1 or 2
- Patient's name
- Outpatient or unit number
- Age and sex
- Date of specimen collection/ Date of specimen collected

Sputum specimen
Kofi Ntodi ……
Outpatient or unit number:……..
Age:… 23 Sex: Male…….
Date of collection : 26-03-04……
Sample 1 ……

STEP 2: FILL IN THE TB LABORATORY FORM (TB05)

The person who is requesting the sputum examination should fill in the request form for sputum examination.

- Name of treatment centre:
- Patient's name
- Age and sex
- Patient's traceable address in full
- Contact Tel. Number
- Date of sample request
- Suspect or follow up specimen
- Suspect number (or District TB number – if it is a follow-up specimen)

STEP 3: FIND A SUITABLE SPACE IN WHICH TO COLLECT THE SPECIMEN

The specimen should be collected **outside** or in a well-ventilated space, away from other people.

- Do not collect the sputum where others are watching – provide privacy.
- Do not stand in front of the person who is producing the specimen but stand behind and to the side.
- Observe the wind direction and stand so that it is away from you .

STEP 4: EXPLAIN SPECIMEN COLLECTION

Explain the following steps slowly and fully by:

- Breathing deeply in and out and demonstrating a deep cough.
- Telling the patient he must produce sputum, not saliva.
- Encouraging the patient to **breathe deeply** and then **cough**

STEP 5: COLLECT THE SPECIMEN

Supervise the collection of sputum by

- Providing water for patient to rinse mouth first
- Giving the patient the container, without the lid. Hold the lid yourself.
- Asking the patient to **breathe deeply** and **cough.**
- Asking the patient to spit carefully into the container, and not to contaminate the outside and the mouth of the container.
- Giving the patient the lid immediately to fit on tightly.
- Checking that the lid is tight.
- Asking the patient to wash his/her hands and you also wash your hands.
- Recording on the patient's medical record that the sample has been taken.

STEP 6: STORE THE SPECIMEN *(where applicable)*

- Check that the lid of the container is tight
- Isolate each container in its own plastic bag if possible or wrap in newspaper
- Store in a cool place or in a fridge, if available
- Wash your hands

STEP 7: EXPLAIN TO THE PATIENT HOW TO TRANSPORT THE SPECIMEN

(In most cases health worker should arrange to transport the specimen, however in the few instance if the patient is taking the specimen to the laboratory (early morning specimen).

Explain to the patient that the container with the sputum must be delivered to the diagnostic centre by the next day.

- Explain to the patient the importance of being careful when taking the morning specimen at home. In doing so, the patient will reduce the risk of infecting other people in the home. The sputum container contains infectious material. It should, therefore, be kept in a safe place, far out of reach of children.
- Explain to the patient how to place the sputum container in a plastic bag provided and how to seal it. The specimen container must be held upright all the time.
- Explain exactly where and when the patient should go to hand in the specimen that day.

PRACTICE EXERCISES

INTRODUCTION TO PRACTICE EXERCISES

Not all health workers will be involved in the actual supervision of sputum sample production. It is very mportant that those health workers who will be performing this role have a chance to practice the task of helping a patient to produce sputum. We will now practice this task.

Obtaining an adequate sputum specimen is a fundamental aspect of the TB-DOTS programme. It is important that we spend some time practising how we can help someone produce a good specimen, in a safe way, by explaining the correct method to him/her.

For these practice exercises:

- We will work in pairs
- An introductory paragraph will set the scene. After reading the paragraph the members of each group will decide who is going to play the role of the health worker and who will play the role of the patient. It is important that during the course each person has the chance to try each role.
- Each participant will turn to the relevant page and prepare him or herself before starting the practice exercise.
- Each practice should last approximately 5 minutes.
- After the practice, the person playing the patient will say what they thought was clear or not clear about the instructions given by the person playing the role of the health worker.
- For the practice to be as effective as possible it is important for it to be as realistic as possible. If you are playing the role of the patient really try to behave and talk as if you have their character and worries.

KEY POINTS

REMEMBER

Sputum specimens must be handled with care. Specimens that contain TB bacilli are potentially infectious. However if the 7 steps described above are followed carefully, risk is minimal. These are repeated below:

The 7 steps for taking good sputum samples

STEP 1: Labet the sputum container

STEP 2: Fill in the sputum examination request form (TB05).

STEP 3: Find a suitable space in which to collect the specimen

STEP4: Explain specimen collection process

STEP 5: Collect the specimen

STEP 6: Store the specimen

STEP 7: Explain the appointment date (and if the patient is to transfer the specimen, what they should do).

TASK 6 - COMPLETING THE REQUEST FORM FOR SPUTUM EXAMINATION

This is the first of several TB forms that are used in the TB programme. CB-DOTS forms are standard based on our experience and WHO guidelines.

A sample of a request form for sputum examination that will be used in CB-DOTS is shown below. Look at this form carefully now.

Figure. 6: Sputum Examination Request Form

SPUTUM EXAMINATION REQUEST FORM, GHANA NTP TB05

Health facility: _____ Date ___/___/20____

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

Address of Patient & Tel (mobile): _____

_____ District _____

Reason for Examination: Diagnosis ☐ TB Suspect No: _____

OR

Follow-up ☐ Months on treatment: _____ Patient's District TB. No: _____

Specimen Identification No: _____ Number of Specimens sent with this form _____

Date of first Sputum collection: ___/ ____/20____

Signature_____ _____

Name of person who requests Examination

RESULTS (To be completed at Laboratory)

Lab. Specimen No.:_____

Visual appearance of specimen: Muco – purulent= a Blood stained = b Muco – Salivary = c Saliva = d

Date	Specimen	Appearance: write a, b, c, or d as indicated above	Result grading (tick √ appropriate boxes)				
			Negative	Scanty (1-9)	+	++	+++
	1						
	2						

Date: ___/____/20____ Examined by (signature) _____

TASK 7 – TRANSPORT SPUTUM SAMPLES TO DIAGNOSTIC CENTRE

The sputum samples should be transported, by the best local means, from all health facilities to the laboratory. The in-charge/TB focal person of each health facility should decide how the samples will be delivered and results promptly returned. The NTP recommends this approach, because many TB suspects find it difficult to go to laboratory for sputum examinations and patients are lost.

When you have all the two samples, pack the sputum containers in a transport box and enclose the respective request form for sputum examination. Send the samples as soon as possible. The samples should reach the diagnostic centre/ laboratory within 2 days. If the patient does not return to the health centre with the second sample within 48 hours, send the first sample to the lab anyway and if found positive, the suspect (TB) has TB, you then need to locate the patient to start treatment.
At the community level: A health care provider can assist in collection and transporting to the diagnostic centre or the nearest health facility.

Prepare a dispatch list (see the sample below) to accompany each transport box. The dispatch list should identify the sputum samples it contains.

Figure. 7: Sputum Sample Dispatch form

TB Sputum Samples Dispatch List

Health facility: _____

Contents: Total number of sputum containers: _____

TB Suspect Name	Specimen ID Numbers

Packed by Name: _____

Signature: _____ Date: _____

WRITTEN EXERCISE
Refer to page 10 of workbook.

KEY POINTS

Filling in the sputum request form correctly is an important step in the identification of people suffering from TB.

It is important to write the patient's actual physical address, but not the postal address. This is to enable the patient to be traced if the samples are sputum positive and the patient fails to return for the results.

Make sure you write clearly so that others can read the details on the form or in the notes

TASK 8 – THE RESULTS

Whenever we request an investigation to help with the diagnosis of a patient we must arrange where and when that patient will be seen for the results. We need to ensure that the patient understands these instructions:

- When they will get their results.
- Where they will get the results.
- Who will be giving them their results?

In the ideal situation the same health care worker will be able to see the patient's results, interpret and explain them to him or her. Unfortunately most of us are working in the real world in which it is usual for the patients to be seen by different health workers at different stages of their management. For this reason all health workers must make sure that they write correct notes and that these are written legibly.

WRITTEN EXERCISE
Refer to page 10 of workbook.

INTERPRETING THE RESULTS OF INVESTIGATIONS FOR PULMONARY TB

INTRODUCTION

In this session we are going to study how to interpret the results we have obtained from sputum smear investigation, chest X-ray, GeneXpert and sputum culture

LEARNING OBJECTIVE

At the end of this session participants should be able to

- Correctly interpret the results of investigations which have been requested for people with possible TB

These activities will be split into separate tasks:

1. Decide whether the patient has sputum smear positive TB or sputum smear negative TB
2. Refer clinically ill sputum smear negative patients for MO assessment.
3. Known Previously treated cases (return after default, relapse and failures) refer to MO
4. MO takes decision based on the result from chest X-ray and or GeneXpert and sputum culture
5. Decide whether the patient has pulmonary or extra-pulmonary TB
6. Record the results in the register of TB suspects

TASK 1: DECIDE WHETHER THE PATIENT HAS SPUTUM SMEAR POSITIVE TB OR SPUTUM SMEAR NEGATIVE TB

If one or both samples turn out to be positive, then the patient has smear positive TB. In very ill patients seen by MO, if both samples are negative, then the patient may have smear negative TB, especially if in addition the Chest X-ray shows any abnormality suggestive of TB.

TASK 2: REFER CLINICALLY ILL SPUTUM SMEAR NEGATIVES TO MO FOR ASSESSMENT

For other service providers, if the sputum smear is negative, and the patient is very sick and has signs and symptoms suggestive of TB then refer to clinician e.g. MO, MA, physician assistants. The clinician requests for a chest X-ray (digital if available), sputum for GeneXpert and sputum culture if necessary. These tests will help the clinician make a decision if TB.

TASK 3: REFER PREVIOUSLY TREATED TB PATIENTS TO CLINICIAN.

All previously treated patients such as relapses, return after default (previous lost to follow up), treatment failures, will need assessment by the clinician. He/she may decide to request for sputum GeneXpert, sputum culture and drug susceptibility and testing (DST) in order to decide on diagnosis and treatment. Some of these patients may have resistant TB and therefore need careful evaluation.

TASK 4: MO TAKES DECISION BASED ON THE RESULT FROM CHEST X-RAY AND / OR GENEXPERT AND SPUTUM CULTURE.

See algorithm for PulmonaryTB Diagnosis (page 33). The above mentioned tests are available to help the clinician take decisions in previously treated patients and other sputum negative or clinically ill patients. In an HIV negative patient where Chest x-ray is consistent with pulmonary TB, treat as TB per national guideline.

It is important to note that many HIV positive patients may have sputum negative smears and therefore should have mandatory chest x-ray (digital where available). For any observed abnormalities in such x-rays treat as TB.
Where there are no observed abnormalities on the chest x-ray in an HIV positive patient then the sputum GeneXpert is mandatory to completely rule out TB.

The Sputum GeneXpert analysis will help to confirm TB if present and also determine if there is rifampicin resistance.
If Sputum GeneXpert is positive and there is no resistance to rifampicin (GXP: TB+, Rif Res –ve) then register as smear negative pulmonary TB and treat per national guideline.

If Sputum GeneXpert is positive and there is resistance to rifampicin (GXP: TB+, Rif Res +ve) then send sputum specimen for Culture and DST and refer the patient to a clinician trained in MDR TB treatment. Results from the DST will be sent to the clinician when available

If Sputum GeneXpert is negative (GXP: TB -ve) but symptoms still persists in the patients, additional samples may be sent for further analysis such as culture and drug sensitivity testing for other bacteria.

TASK 5. DECIDE WHETHER THE PATIENT HAS PULMONARY OR EXTRA-PULMONARY TB

All patients suspected to have extra-pulmonary TB must also be investigated for pulmonary TB. They must have sputum smears examined if they cough and a chest x-ray done to rule out the possibility of co-existing pulmonary TB. If a patient is found to have both pulmonary and extra-pulmonary, he or she should be classified as a case of pulmonary TB.
For non-Clinicians if Patient has smear negative results please do not communicate that he/she does not have TB, refer to the clinician for further investigation

When a person is diagnosed with extra-pulmonary TB the main site in the body affected is noted. He or she will be started on TB treatment, and will be managed by the CB-DOTS programme in the same way as a case of pulmonary TB. The community-based supervision is the same.

TASK 6. RECORD THE RESULTS IN THE REGISTER OF TB SUSPECTS

Results from all investigations done for TB suspect and their interpretation should be recorded into the TB suspect register. Read the results from "(Results to be completed in Laboratory)" the request form for Sputum Examination. Find the patient's name in the Register of TB suspects. Record the results under "Results of Sputum Examinations" column. For each sample, record "NEG" for negative and "POS for the positive results (including scanty as positive).

In the lab register indicate in the remarks column the date the sputum results were collected
If the patient does not return to collect his/her sputum results within five days arrange for a following especially those with smear positive results

COMPLETED TB LABORATORY FORM

The ITC (institutional TB coordinator) must ensure TB laboratory results is entered into register of TB suspect (cough register) and institutional TB register. The ITC then decides on appropriate action.
When the laboratory worker carries out the sputum examination, he records the findings on the bottom of the Request form for Sputum Examination. See example below.

Figure. 8: Sputum Examination Request Form

SPUTUM EXAMINATION REQUEST FORM, GHANA NTP TB05

Health facility: _____ Date ___/___/20____

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

Address of Patient & Tel (mobile): _____

_____ District _____

Reason for Examination: Diagnosis ☐ TB Suspect No: _____

OR

Follow-up ☐ Months on treatment: _____ Patient's District TB. No: _____

Specimen Identification No: _____ Number of Specimens sent with this form _____

Date of first Sputum collection: ___/ ____/20____

Signature_____ _____

Name of person who requests Examination

RESULTS (To be completed at Laboratory)

Lab. Specimen No.:_____

Visual appearance of specimen: Muco – purulent= a Blood stained = b Muco – Salivary = c Saliva = d

Date	Specimen	Appearance: write a, b, c, or d as indicated above	Result grading (tick √ appropriate boxes)				
			Negative	Scanty (1-9)	+	++	+++
	1						
	2						

Date: ___/____/20____ Examined by (signature) _____

DIAGNOSING A TB SUSPECT:

Decide If Pulmonary TB (smear positive or negative):

- If one or more positive sputum smear
  - ➢ register as sputum smear positive
- If two smears were negative and patients has signs and symptoms consistent of TB
  - ➢ refer to clinician

If clinician suspect TB

- ➢ Request for chest X-ray (digital X-ray where available)

If X-ray changes are consistent with TB, and or HIV positive patient then

- ➢ Refer for GeneXpert where available else Treat as TB

If X-ray changes are not consistent with TB and patient is HIV negative

- ➢ MO treat according to other diagnosis

If GeneXpert is positive for TB, Rifampicin non Resistant

- ➢ Register as Smear negative pulmonary TB and treat

If GeneXpert is positive for TB, Rifampicin Resistant

- ➢ Send specimen for culture and DST
- ➢ Refer patient to clinician trained in management of MDR TB

WRITTEN EXERCISES

INTRODUCTION TO WRITTEN EXERCISES

The following exercises are designed to develop the skills we have been learning in this session. In particular they will enable you to practice your skills of interpreting the information you may receive from the sputum results of a patient to decide whether or not they have TB. For those that do have TB we will be able to practice using information from the history to decide on the type of TB and the correct treatment category.

It is best if you do these exercises individually. You will be able to discover your strengths and weaknesses when it comes to making a decision about the diagnosis of a patient. Write into your note books or onto the exercise sheets provided (separately from the chapter).

CHAPTER SIX

PRESCRIBING CORRECT TREATMENT REGIMEN

INTRODUCTION

In this chapter we will study how TB drugs are prescribed to the patient after diagnosis. Health care providers working within the TB programme need to understand the basic principles of prescribing for TB patients and in particular must know how to interpret the TB treatment prescription correctly.

LEARNING OBJECTIVE

At the end of this session, participants should be able to

- Assign patient to the correct regimen
- Prescribe correctly the appropriate treatment regimen.
- Correctly fill in the Treatment Card (TB01)

The activities that make up this task are:

1. Assigning patient to the correct patient group
2. Deciding upon the treatment regimen used for that treatment category
3. Checking for contraindications to the drugs in this treatment regimen, and follow the correct course of action if contraindicated
4. Calculating the doses of the drugs based on the patient's weight and estimating the patient body mass index (BMI)
5. Filling in the TB treatment card

TASK 1: ASSIGNING PATIENT TO THE CORRECT PATIENT GROUP *(Disease category)*

At the time of registration, you need to determine if the patient has previously received TB treatment and if so, the outcome (if known). If the patient has never had TB treatment or had taken TB treatment for less than one month, such a patient is considered to be a new patient.

A new patient may have positive or negative bacteriology and may have the disease at any anatomical site. eg New smear-positive PTB; new smear negative PTB, new extra-PTB)

If the patient has previously received TB treatment for one month or more such a patient is considered as a previously treated TB patient. A Previously treated TB patient may have positive or negative bacteriology and may have the disease at any anatomical site. Previously treated TB patients are further classified by the outcome of their most recent course of treatment. eg Relapse, Treatment after interruption and Treatment failure.

TASK 2: DECIDING ON THE TREATMENT REGIMEN TO BE USED

It is important that every patient is treated with the official standardised treatment regimen appropriate for his or her disease category. The chosen drug treatment regimen is very effective and can successfully treat almost all cases of TB if used in the right doses and for the right duration.

Duration of Treatment

It is very important that we give the patient the full course of treatment. The full course of treatment should last between 6 and 8 months. If the patient does not take the full course of treatment some of the TB bacteria will not be killed and the patient will not be cured. Patients who do not complete a set of prescribed treatment may develop drug resistant TB.

Please note that in this programme a month is made up of 4 weeks or 28 days. Thus, the intensive phase is either 2 months i.e. 8 weeks or 56 days, or 3 months i.e. 12 weeks or 84 days. The continuation phase is either 4 months i.e. 16 weeks or 112 days or 5 months i.e. 20 weeks or 140 days.

KEY POINT
Every TB patient must take the full course of treatment or they will not be cured and may develop drug resistant TB.

Phases of Treatment

Every treatment regimen has an initial intensive phase and a later continuation phase.

The initial intensive phase lasts for 2 or 3 months. The risk of drug resistance developing is higher during the early stages of treatment when there are more TB bacteria present. Three or more anti-TB drugs are therefore given to kill the TB bacteria rapidly. Once treatment is started patient is less infectious. The vast majority of patients become non-infectious and symptoms improve between 1 and 3 weeks. It is important to ensure that a system of community-based support is in place to ensure patients comply with their treatment during this phase.

The continuation phase lasts for 4 or 5 months. Fewer drugs are required to eliminate the remaining TB bacteria in this phase. Community-based patient support is still required to help people complete the whole of their TB treatment regimen. However, in the continuation phase this support may be less frequent, for example once a week.

TB Drugs and Codes

There are many TB drugs some of which are shown below with their codes (abbreviations). Each TB drug has a standard abbreviation (a single capital letter) which allows TB treatment regimens to be written in code or shorthand form.

These abbreviations are:

Code	Drug
H	Isoniazid
R	Rifampicin
Z	Pyrazinamide
S	Streptomycin
E	Ethambutol

Some of the drugs come in fixed combination formulation. Codes for these fixed drug combinations (FDC) are:

(HR) - Isoniazid+Rifampicin
(HRZ) - Isoniazid+Rifampicin+Pyrazinamide
(HRZE) - Isoniazid+Rifampicin+Pyrazinamide+Ethambutol

An example of a TB treatment regimen written as a code is:

2 (HRZE) / 4 (HR)

The code shows the 2 phases of TB treatment by writing information about intensive phase in front of a slash (/) and about continuation phase after the slash.

- A number before the letters indicates the duration of treatment in months – 2 months in this example
- Each drug is represented by its abbreviation letter. When these appear in brackets it indicates the drugs come as a combination tablet. When these appear out of brackets it indicates that single drug preparations are used.
- A number as a subscript after the drugs indicates that the doses are given intermittently, not daily. A subscript of 3 means give three times a week. If no subscript appears, then the drugs are given daily. In NTP all drugs are given daily.

In the example above, the Fixed Dose Combination (FDC) of Isoniazid, Rifampicn, Pyrazinamide and Ethambutol are taken for 2 months in the intensive phase and the FDC of Isoniazid and Rifampicn are taken 3 times a week for four months in the continuation phase.

Sometimes the intensive phase is itself divided into 2 parts with different regimens for each part of the intensive phase. Once again these parts are separated by a slash: For example: 2 (HRZE)S / 1(HRZE) / 5(HRE)

In this programme, five essential anti-TB drugs (Isoniazid, Rifampicin, Pyrazinamide, Ethambutol, and Streptomycin) are used. Their modes of action, doses and contraindications are given in the table below. At the present time these TB drugs are available in different strength. For example:

- Pyrazinamide and Ethambutol tablets are produced in single strength (i.e. 500mg and 400mg respectively).
- Isoniazid is available in 100mg and 300mg strengths.
- Rifampicin is available as a single tablet in three different strengths i.e. 150mg, 300mg and 450mg.

These drugs are formulated as single tablet or, as indicated earlier, in fixed combinations i.e. one tablet.

The NTP has introduced new FDC formulations. These FDCs come as "blister packs". These packs contain sheets of tablets held in rows by small plastic blisters. Each row contain the exact drugs in the exact doses needed to treat a TB patient for one day. There are different packets for the different treatment categories and for patients of different weights. It is thought that these blister packs will make it much easier for health care providers to dispense the TB drugs and for the patients to take their TB drugs.

In this course the case management desk-aide and exercises are based on a programme that has the following drugs available:

Adults

- Isoniazid 150mg and rifampicin 300mg combined tablet (HR)
- Rifampicin 150mg/Isoniazid 75mg/Ethambutol 275mg combined tablet (RHE)
- Rifampicin 150mg/Isoniazid 75mg/ Pyrazinamide 400mg/Ethambutol 275mg combined tablet (RHZE)
- Pyrazinamide 500mg tablet (Z)
- Ethambutol 400mg tablet (E)
- Streptomycin 1g (S)
- Isoniazid 100mg and 300mg (H)

Children

Rifampicin 60mg/Isoniazid 30mg/ Pyrazinamide 150mg Ethambutol 100mg.

TB Treatment Regimens

There are many possible combinations of TB drugs, however, the NTP has chosen a few regimens so as to standardize treatment. It is the responsibility of the health worker making the diagnosis to prescribe the correct standardised treatment regimen according to the category of the TB patient. The desk-aide (pages 14,15 and 16) contains a detailed table for the prescription of TB treatment regimens for each category of TB patient. Part of the table is repeated below

Table. 4: Recommended Treatment Regimen for TB Treatment Category

TB Treatment Category	TB Patients	TB Treatment Regimen	
		Initial Phase	Continuation Phase
		Daily (28 doses/month)	Daily (28 doses/month)
New	All New Cases (including New smear-positive; new smear negative PTB, concomitant HIV disease or extra-PTB)	2 (HRZE) = 56 doses of HRZE	4 (HR) = 112 doses of HR
Previously treated	Previously treated sputum smear-positive PTB: - Relapse - Treatment after interruption - Treatment failure.	2S (HRZE)/1 (HRZE) = 84 doses of HRZE +56 doses of S	5HRE =140 doses of HRE

NB: ***For Paediatric Management, Refer to Children treatment manual or desk aide for quick reference.***

As we have learnt in the previous chapter, there are two main patient groups for Tuberculosis. Each patient group has its own treatment regimen shown in the table. The table also shows the number of doses of each drug and drug combination in the two phases of treatment.

Table 5: Mode of Action and Recommended Dosage of Essential Anti-TB Medicines

Essential anti-TB drug (abbreviation)	Mode of action	Recommended Dosage		Preparations used in this programme	Contraindications
		Daily	3 times a week		
Isoniazid (H)	Bactericidal	4-6 mg/kg	8-12 mg/kg	100 mg or 300 mg tablets	
Rifampicin (R)	Bactericidal	8-12 mg/kg	8-12 mg/kg	150 mg or 300 mg tablets	
Pyrazinamide (Z)	Bactericidal	20-30 mg/kg	30-40 mg/kg	400 mg tablets	Liver disease
Streptomycin (S)	Bactericidal	12-18 mg/kg	12-18 mg/kg	Vial 1 g (IM)	Pregnancy. Caution in renal disease
Ethambutol (E)	Bacteriostatic	15-20 mg/kg	20-35 mg/kg	100 mg or 400 mg tablets	Caution in renal disease

Table 6: Possible Presentations of Fixed Drug Combinations

Fixed Drug Combinations	Presentations (combination tablets)	
	For daily administration	3 Times a week
Isoniazid + Rifampicin (HR)	(H 150 mg + R 300 mg), or (H 75 mg + R 150 mg), or (H 30 mg + R 60 mg)*	(H 150 mg + R 150 mg), or (H 60 mg + R 60 mg)*
Isoniazid + Ethambutol (HE)	(H 150 + E 400 mg)	NA
Isoniazid + Rifampicin + Pyrazinamide (HRZ)	(H 75 mg + R 150 mg + Z 400 mg), or (H 30 mg + R 60 mg + Z 150 mg)*	(H 150 mg + R 150 mg + Z 500 mg)
Isoniazid + Rifampicin + Pyrazinamide + Ethambutol (HRZE)	(H 75 mg + R 150 mg + Z 400 mg + E 275 mg)	

* for children

Drug Dosages

It is very important to treat TB with the correct dosage of recommended drugs. TB medicines are not effective if they are not given in the correct dosage and according to the weight group of the patient. If the dosage prescribed is less than the recommended dosage, the TB bacteria will not be killed and they may become resistant to the drugs. If the dose is higher than recommended, the drugs may cause severe toxic effects.

The prescribed dosages are based on 4 weight bands. For adults these are:

- 21-30kg
- 30 – 39kg
- 40 – 54kg
- 55kg and above

For children < 15 they are:

- 5-7Kg
- 8-14 kg
- 15-20kg
- 21-30kg (provide adult medicine dosage)

TASK 3: CHECKING FOR CONTRAINDICATIONS

Occasionally a patient or a group of patients will not be able to have the standardised treatment regimen as recommended by theTB programme, due to the presence of a contraindication to one or more of the drugs. There are some absolute contraindications to some TB drugs and the main groups of people to think of are:

- Pregnant women
- Children
- People with liver disease
- People with renal disease
- People with HIV

Pregnant women should not be given Streptomycin as it can cause permanent deafness in the baby. Patients with visual impairment should not be given Ethambutol as it can cause alteration to the vision, which may not be noticed or reported in these groups. They will also need reduced doses (as determined by weight). For this reason a separate treatment regimen has been established for the management of children up to the age of 15 years. Children may be given ethambutol. The health worker should assess any child on treatment to describe or communicate any visual changes. Streptomycin should not generally be given to children because of its effect on hearing. However, in severe forms of TB such as meningitis, streptomycin may be cautiously used.

People with liver disease should not be given Pyrazinamide, as it is the most likely anti-TB drug to cause liver problems. Most of the anti-TB drugs, such as rifampicin and isoniazid, however have effect on the liver.

It is beyond the scope of the general health worker to manage the treatment of TB in these complicated cases (See MDR-TB Guidelines). Instead it is the role of the general health workert o identify such patients and to refer them to the medical officer for advice and management.

KEY POINT

Remember to consider the presence of:

- Pregnancy
- Liver disease

TASK 4: CALCULATE THE CORRECT DOSES OF TB DRUGS

The dose of TB drugs, and hence the number of tablets, is different for patients of different weights. To simplify the drug prescription process, the TB programme use weight bands to prescribe TB treatment, rather than calculating the actual dose per kg for each patient as explained earlier in this chapter. All the patients that fall within a weight band will have the same numbers of tablets. In the past we have based the dose of TB drugs upon the pre-treatment weight. We will continue to do that. Patient's weight should be monitored each month, and dosages should be adjusted only if weight changes are significantly different from Pre-treatment weight (eg jumping into another weight band)
The number of drugs prescribed is determined by the category of the TB patient and phase of the treatment (intensive or continuation). The dosage (number of tablets) of each drug is determined by weight of the patient at the time of diagnosis.

KEY POINT
Always base the dose of TB drugs on the pre-treatment weight of the patient.
Only in rare instances adjust dosages if the patient's weight change is highly significant.

EXERCISE

Now turn to the desk-aide and look at the tables on pages 10 and 11. These tables help us to determine the doses of the drugs for each patient treatment group and the pre-treatment weight of the patient. To use these tables simply:

- Decide upon the correct table to use for your patient, based upon their patient treatment group Use the pre-treatment weight of the patient to select the correct row of the table.

- Move across the selected row and make a note of the drugs and doses ***(number of tablets)*** to be prescribed You will record this information in the TB treatment Card ***(TB01)***

TASK 5: FILL OUT THE TB TREATMENT CARD (TB01)

The TB treatment card is a record of all the details of a TB patient including his or her personal details, information about the diagnosis, classification and patient treatment group, nutritional and HIV status. The details of the treatment regimen and actual doses are recorded and a record is made of when doses are taken, and whether these are supervised or not.

This is the most important form as it contains all data which are copied to the other registers and forms. Information from the TB treatment card will be used to update the Institutional TB register whenever the patient is reviewed at the treatment centre. The District Coordinator (DTC) should also update the District TB register using the TB treatment card and the Institutional register.

TB treatment card (TB 01) is filled out for each patient diagnosed with TB. This card is kept at the health facility where the patient receives treatment.

A treatment supporter card is also completed for the same patient and given to the treatment supporter. Each TB treatment card is folded into three each fold having a front and a back page. We will study these separately. The front cover, inside front cover and the inside middle fold of the TB treatment card are reproduced on the following pages. The rest of the card contains space for clinical and other notes related to the patient. Many of the sections are self-explanatory. We will highlight only those sections that may be filled in incorrectly.

Chest X-ray:			HIV Counselling & TestingH				IV Care	
Not done			Offer Date	Accepted Y/N	Results	Date of post test Counselling	HIV Clinic Reg. No.	
Date ____/____/20___							Date of Registration	
Results	Suggestive						ART Start Date	
	Not Suggestive						ART Regimen	
	Other Disease		Co-trimoxazole prophylaxis Start date			__/___/20_	ARV Dose	
	Undefined							

Disease Classification

Pulmonary ☐ Extra Pulmonary ☐

Type of Patient

New ☐ Relapse ☐

Transfer in ☐ Failure ☐

Return of default ☐ Other ☐

Return after default Other(specify)

I. INITIAL PHASE – prescribed regimen and dosages:

Tick the appropriate category box and, using the dose schedule, indicate the daily number of tablets and dose of Streptomycin (mgs).

Adult			Weight: Children <15 yrs	Child<15 yrs New		Child<15 yrs Re-treatment				
Weight (kg)	HRZE (75/150/400/275)	S (mg)		RHZ (60/30/150 mg)	RH (60/60mg)	E (100mg)	s(1g)	RH (60/30mg)	RH (60/60mg)	E (100mg)
30-39	2	500	5-7 kg	1	1	1	500mg	1		1
40-54	3	750	8-14 kg	2	1	2	200mg	1		2
55kg & above	4	1000*	15-20 kg	3	2	3	280*mg	2		3
0.750mg if aged 60 years			21-30 kg	Paediatric Kit B: 2tabs HR (75/150/400/275) + 2tabs HR(60/60) + 1tab E(400mg)			400mg	Paediatric Kit B: 2tabs HR (75/150/400/275) + 2tabs HR(60/60) + 1tab E(400mg)		

H: isoniazid R:rifampicin Z: pyraiinamide E: ethambutol S: streptomycin
Body Mass Index: BMI = Body Weigt (Kg) heightxheight(m^2)

Treatment Monitoring				
Month	Weight (Kg	*BMI (kg/m2)*	*Sputum Smear*	Lab No
Month 0				
Month 2				
Month 3				
Month 4				

ADMINISTRATION OF DRUGS.Enter: √ =directly observed; "O" = drug not taken; "-" = self administered, "___"= medicine collected for CB-DOTS and draw line to indicate number of days supply given. On review of patient ID Card, update TB01 appropriately

DAY / MONTH	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	REMARKS	TOTAL Doses: Each month	TOTAL Doses: Given	Drugs given to supporter: Date	Drugs given to supporter: Doses

Please turn over for continuation phase

II. CONTINUATION PHASE - prescribed regimen and dosages:

Tick the appropriate category box and, using the dose schedule, indicate the daily number of tablets.

Adult			Weight: Children <15 yrs	Child<15 yrs New		Child<15 yrs Re-treatment		
Weight (kg)	HR 75/150mg	HRE 75/150/ 275mg		RH (60/30mg)	RH (60/60mg)	RH (60/30mg)	RH (60/30mg)	E (100mg)
			5-7 kg	1	1	1	1	1
30-39	2	2	8-14 kg	2	1	2	1	2
40-54	3	3	15-20 kg	3	2	3	2	3
55kg & above	4	4	21-30 kg	Paediatric Kit B: 2tabs HR (75/150) + 2tabs HR(606/60)		Paediatric Kit B: 2tabs HR (75/150) + 2tabs HR(606/60) + 1tab E(400mg)		

ARV Drugs	
Drugs	*Dose*

ADMINISTRATION OF DRUGS.Enter: √ =directly observed; "O" = drug not taken; "-" = self administered, "___"= medicine collected for CB-DOTS and draw line to indicate number of days supply given. On review of patient ID Card, update TB01 appropriately

DAY / MONTH	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	REMARKS	TOTAL Doses: Each month	TOTAL Doses: Given	Drugs given to supporter: Date	Drugs given to supporter: Doses
Months 5	Weight_____kgS								putum_____					Lab.No._____					BMI_____			Positive sputum smear at 5 months means Treatment FAILURE										
Months 6/8	Weight_____kg								Sputum_____L					ab.No._____B					MI_____			Negative sputum smear at 5 months means CURED										

Observations:

_____

_____

_____

_____

_____

Name and address of Contact Person:_____

_____

_____

_____

Transfer

Provider type	From (Date)	To (Date)	Purpose
Self referred			
HIV clinic/CT centre			
Contact invitation			
Public PHC			
District Hosp			
Mission Hosp			
Private Hosp/clinic			
Pharmacist/Chemist			
Household/family/friend			
Community volunteer			
NGO hospital/clinic			
Other			

Treatment Outcome

Record Date: ___/___/20____

	Code	
Cure	1	☐
Treatment Completed	2	☐
Died	3	☐
Treatment failure	4	☐
Defaulter	5	☐
Transfer out	6	☐

TB treatment card – Front cover:

The front of the TB treatment card documents the demographic data of the patient.

Important points to remember about completing the front cover of the TB treatment card are:

- The full name of the patient and the treatment supporter are needed and special care is needed in areas where several people may all have the same or similar names. An ID number, the NHIS or Voters ID is therefore most important to help with this.

- The Telephone numbers of the patient and treatment supporter must also be recorded. In taking the numbers ring the numbers in their presence to ensure that the correct numbers have been given. For those who do not have telephones ask for the number of a phone that they have access to or they can be called to use.

- Full details of how to find the patient and the treatment supporter's homes are needed – not just the simple address and especially not the postal address (traceable residential address) is required.

- The District TB number is the number given to the patient from the TB register. This number is added to the TB treatment card at the time that the patient is registered by the District TB Coordinator (we will study the TB register later)

- The health facility is where the patient is registered and receiving treatment (either the diagnostic or treatment centre). The name of the treatment centre is also recorded here.

Treatment Card - Inside Front Cover

Here you record specific information about the patient's illness. This includes specifying the category of TB treatment and the exact doses of drugs that will be used during the intensive phase. At the bottom there is a table in which a record of the drugs taken is made.

- The details of whether the patient has sputum positive or negative, pulmonary or extra-pulmonary, and new or re-treatment TB are all recorded on the TB treatment card. It is important that the laboratory number for the sputum examinations are recorded also so that crosschecking with laboratory register is facilitated.
- **TB/HIV** data should also be recorded: whether or not counselling and testing has been offered and accepted and the date of post test-counselling, if the patient has had post test counselling and has been told the result of the test. If the patient is on co-trimoxazole prophylaxis, tick the box and record the date of starting. Record details of attendance at HIV clinic and treatment for HIV if started by filling in the HIV Clinic registration number, the date of registration and the date and registration of anti-retroviral treatment.
- The patient treatment group and doses of drugs are also recorded in the boxes.
- Weight - the pre-treatment weight is recorded at diagnosis and used to calculate the correct doses of drugs. The height of the patient should also be taken and recorded. This with the weight would be used to calculate the body mass index (BMI). At review appointments, the weight is also recorded as a means of monitoring the progress of the patient. The dose of drugs is not changed even though the weight may change. (Adjust dose only when there is significant jump from one weight band width to another)
- Administration of Drugs - Fill in the month of administration of drugs. Tick a box for each day the spatient takes or does not take his drug. Care is needed when ticking the boxes. Start from 1 irrespective of the calendar date and note that a month refers to 4 weeks or 28 days. Remember to enter the date treatment started in Day/ Month column.

Use the following symbols to indicate the progress of supervised treatment.

√	**Supervised treatment** This symbol is written if the Treatment Supporter has actually seen the daily treatment being swallowed.
—	**Unsupervised treatment** This symbol is used if the patient reports taking the treatment but the Treatment Supporter did not actually observe the taking
0	**Missed treatment** This symbol is used if the treatment has not been taken.

TB Treatment Card: Inside middle fold

Continuation phase - This section will contain all the details of the patient's treatment during the continuation phase. It will be completed at the time that the patient is ready to change from intensive phase to continuation phase. The format is similar to that used in the intensive phase with a section for each of the patient treatment group and details of the relevant regimens to be used. Once again the doses/number of tablets to be used are recorded in the boxes.

If the patient is HIV positive and has started treatment then the ART drugs and their doses are recorded.

Record the treatment outcome at the end of treatment.

Observations – this space is available for any additional comments. ***Examples include:***

- Any additional test that played a part in the diagnosis of this patient (like X-ray or aspirate of pleural effusion)
- Any contraindication or drug reaction and the action taken
- The preventative treatment of household contacts if this is needed, for example the breast feeding baby of a sputum positive mother
- Active tracing of defaulter – details of attempts to contact a defaulting patient.

WRITTEN EXERCISES

INTRODUCTION TO WRITTEN EXERCISES

The following exercises are designed to develop the skills we have been learning in this session. In particular, they will enable you to practice your skills of filling in the TB treatment card for a newly diagnosed patient.

It is best if you do these exercises individually. In that way you will be able to discover your strengths and weaknesses when it comes to filling in the TB treatment cards.

The first exercise will actually be a demonstration of how to use the information from the history, sputum results and examination to correctly fill out the TB treatment card. Then similar information will be given for you to try for yourself.

For each case use the information that we have already gathered about each patient and the additional information provided. Refer to page 29 of workbook.

CHAPTER SEVEN

REGISTERING THE TB PATIENT

INTRODUCTION

After a person has been diagnosed with TB, classified and assigned to the correct patient treatment group, all the details of this patient must be entered into the Institutional and District (also known as TB03) TB registers. In addition patients who are being treated at the community are registered in the community health officer Register.

The District TB register helps us to monitor the whole TB programme to ensure that the programme is functioning well. It is the role of the TB co-ordinator to ensure that all newly diagnosed TB patients are entered into the District TB register. However other health care providers working within the TB programme need to understand the basic principles of registering TB patients

LEARNING OBJECTIVES

At the end of this chapter participants would be able to:

- Correctly interpret the information recorded on the TB treatment card (TB01)
- Complete the other information required on the TB treatment card
- Transfer the information from the TB treatment card to the institutional TB register.
- Fill in the community health officer (CHO) Register

We will spend time in this chapter learning and practising these skills. RTC, DTC, ITC should pay particular attention.

REGISTERING THE TB PATIENT

- **Ask and record information on the TB01 (TB treatment card) and TB03 (Institutional TB register):**

➢ Ask the full residential traceable address of patient and contact person's details. Collect Mobile telephone number if available

➢ Use list of associated facilities (& catchment villages) to identify a suitable treatment centre

➢ Record address, contact person details and treatment centre in TB01 and include; Disease classification and sputum smear results e.g. sputum positive pulmonary TB, patient group, new or previously treated case (ask carefully if the patient has ever taken TB drugs)

➢ Fill in the first part of the TB register by transferring data from the TB01.

➢ Explain and arrange DOT as below.

TASK 1. REVIEW AND ESTABLISH ADDITIONAL INFORMATION AND COMPLETE SECTIONS

As well as the technical information filled in by the health care provider who diagnosed TB there are some sections that will need to be completed. Specifically, it is the responsibility of the health care provider to confirm that the full and exact details of the patient's name, address, telephone number, ID number and directions to the house are included on the TB treatment card.

Also, at the end of the interview with the patient the health care provider must fill in all the details relating to the arrangements for community-based TB care. That is, he/she must record the name and address of the contact person, the name of the treatment centre and treatment supporter.

TASK 2: TRANSFER INFORMATION TO THE INSTITUTIONAL TB REGISTER

INSTITUTIONAL TB REGISTER

The institutional TB register helps to keep track of all the TB patients being treated at that treatment centre. The institutional TB Register is used to keep a record of all TB patients who have been diagnosed in the centre and for whom treatment has been prescribed. The information from the patient's treatment card is the main source of information to be recorded in the Institutional TB Register. The Institutional TB Register is then used to provide Quarterly reports on case finding and treatment outcomes for the treatment centre to the NTP.

In addition there is a District TB register, which is prepared by the DTC, based on all the Institutional TB registers in the District and cross checking with the TB01. The District TB Register is then used to provide Quarterly reports on case finding and treatment outcomes for the entire District.

The health care provider responsible for the TB programme at the treatment centre, the Institutional TB Coordinator, (ITC) will ensure that the patient details are entered into the register. This should be done as soon as possible after the initial interview – when the patient presents with the initial sputum results, or when receiving a referral/transfer card from another unit.

On the next two pages you can see a copy of the Institutional TB register.

GHANA TB CONTROL PROGRAMME

HEALTH FACILITY TB REGISTER | Name of Health Facility | Month(s) | Years 20

UNIT TB No.	Date Registered	District TB No.	Name of Patient	Age	Sex M/F	Address & Tel No. of Patient	Name, Tel No.& Address of Contact Person	Disease Classification: P/Pos, P/Neg, EP/Site[1]	Type of Patient N,R,F,D,T,O[2]	Digital/ Chest X-ray[3]

[1]Enter: P/Pos for Pulmonary Sputum Smear Positive, P/Neg for Pulmonary Sputum Smear Negative and EP and site/ organ of Extrapulmonary TB.

[2]Enter: **N for New** – A patient who has never had treatment for TB or who has taken antituberculosis drugs for less than 1 month.

R for Relapse – A patient previously treated for TB, declared cured or treatment completed, and who is diagnosed with bacteriological (+) TB (smear or culture).

F for Treatment Failure – A patient who is started on a re-treatment regimen after having failed previous treatment.
D for Return after Default – A patient who returns to treatment, positive bacteriologically, following interruption of treatment for 2 or more consecutive months.

T for Transfer in – A patient who has been transferred from another TB Register to continue treatment. This group is excluded from the quarterly report on registration.

O for Other previously treated– All cases that do not fit the above definitions. This group includes Smear positive cases with unknown outcome of previous treatment, Smear negative previously treated, EP previously treated and chronic case (ie a patient who is sputum positive at the end of a re-treatment regimen)

[3]Enter: ND for Not Done, S for Suggestive, NS for Not suggestive, U for Unknown/atypical.

Sputum Smear Microscopy Results										Treatment		Living Support		Treatment Outcome					
Before Treatment			2 or 3 Months		5 Months		End of treatment									TB/HIV			
Smear Results	GXP / Culture/ DST	Lab No. & Date	Smear Results	Lab No. & Date	Smear Results	Lab No. & Date	Smear Results	GXP / Culture/ DST	Lab No. & Date	Category: New/ Previously treated/other	Date Started	Date CBTC Initiated	Date Enablers Provided	Date4	Outcome5	HIV Results & Date6	CPT start date7	ART Start Date8	Remarks

Enter the date that treatment was stopped

Enter Code for Treatment Outcome as follows:

Cured: A patient whose sputum smear or culture was positive at the beginning of the treatment but who was smear- or culture-negative in the last month of treatment and on at least one previous occasion.

Treatment completed: A patient who completed treatment but who does not have a negative sputum smear or culture result in the last month of treatment and on at least one previous occasion

Default: A patient whose treatment was interrupted for 2 consecutive months or more.

Died: A patient who dies for any reason during the course of treatment.

Transfer out: A patient who has been transferred to another recording and reporting unit and whose treatment outcome is unknown.

Treatment failure: A patient whose sputum smear or culture is positive at 5 months or later during treatment. Also included in this definition are patients found to harbour a multidrug-resistant (MDR) strain at any point of time during the treatment, whether they are smear-negative or -positive.positive at the end of his retreatment or who is switched to Category IV treatment because sputum turned out to be MDRTB

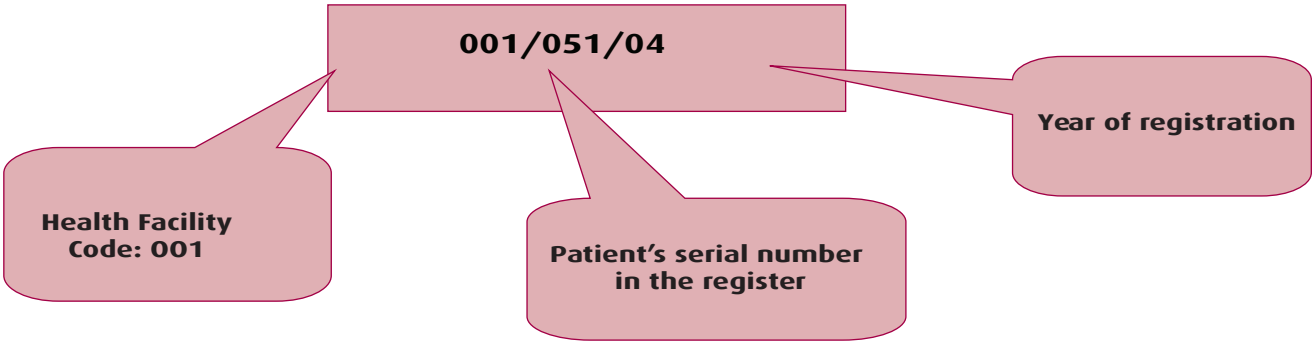
Enter **RT** if patient was counselled but refused test, +ve if test positive, -ve if test negative and ND if counselling and testing were not done

Enter **N** if patient was not on CPT or else enter the date of initiation of CPT.

Enter Enter **N** if patient not on ART, else enter date of initiation of ART

Let us look at some of the different sections of the Institutional TB Register in turn.
The institutional TB coordinator is responsible for keeping this register.

Unit TB Number: This consists of 3 parts: the code for the health facility, the serial number of the patient in the register and the year of registration. Complete the serial number, using the next number after the previous patient in the register. Each year starts with number 1. An Example is:



Date Registered: Date on which the patient's details were entered into the register.

District TB Number - The DTC will assign the district TB number. It depicts the Regional code (e.g. 01 stands for Ashanti region), District code, first three letters for the District (e.g. AND for Adansi North), year of registration (e.g.12 for 2012) and serial number in the district register.

An example of District TB Number for a patient in the Adansi North District of the Ashanti Region, (District TB NO.) : 01/AND/12/___

Region	Code
Ashanti	01
BrongAhafo	02
Central	03
Eastern	04
Greater Accra	05
Northern	06
Upper East	07
Upper West	08
Volta	09
Western	10

Please refer to Annex for a list of Districts and their codes now.

Name in full - Record the full name of patient making sure to include any popular name(s) or nick name(s) that the person is known in the community.
Age - should be recorded in years (15 y) except for children of less than 1 year where the age is recorded in months (3 m).
Sex - of patient is recorded as M for male and F for female.

Address and Telephone number - Record the usual residence of the patient; this must be such that anyone would be able to trace the location. Also record the telephone number of the patient or a number that the patient has access to.

Name, Telephone number and Address of Contact person - this is the treatment supporter's details.
Disease classification - The disease classification is recorded by writing **P/Pos** for Pulmonary sputum smear positive, **P/Neg** for pulmonary sputum smear negative and **"EP"** for extra-pulmonary tuberculosis. If Extra-pulmonary specify the site affected. If the patient has both pulmonary and extrapulmonary TB, it should be recorded as pulmonary.

Type of patient - The type of patient is recorded by using the following appropriate codes: N for a New case; **R** for a Relapse; **F** for a Failure; **D** for a Return after Default case, **T** for a Transferred in case and **O** for Others. This code list is provided at the bottom of the Institutional TB Register.

Chest X-ray – the changes on the x-ray, if done are entered in this column. Enter **ND** for not done, **S** for changes suggestive of TB, **NS** for Not Suggestive, and **U** for unknown or atypical.

Sputum smear microscopy results - Record the results of the sputum examination in the first column under the "Before Treatment" heading, and the laboratory number and date when the sputum was examined in the next column. If positive, record the highest number of positives, preferably in red ink. For example, if any of the two sputum results were: scanty, + and ++, record **1+** and **2+** as the smear result. Please note that the plus sign is encircled to make it clear that it represents a result. Record "NEG" if the results were negative. Record **ND** if sputum smear microscopy was not done.

Culture Results (DST): Record the results of culture examinations in the first column under the "Before Treatment" heading, and the laboratory number and date when the sputum was examined in the next column if done.

Results of other diagnostic tests – Please indicate which test and their results eg. GeneXpert.

Treatment – the next two main columns relate to the treatment of the patients: the treatment group, date of start of treatment, the treatment outcome and date treatment was stopped.

Patient Treatment group: Record the treatment group as: a) all new cases in adults and previously treated group, I

Date treatment was started: record the date when patient started taking the drugs.

Treatment outcome – Record the treatment outcome and date this was determined.

Date treatment stopped: record the date when treatment was stopped and outcome was determined.

Treatment Outcome - record the treatment outcome code as follows:

-1 = Cure:	Sputum smear (+) patient who is sputum (–) in the last month of treatment and at least once before.
-2 = Treatment: Completed	Patient who has completed treatment but who does not meet the criteria to be classified as a cure or a failure.
-3 = Default:	Patient whose treatment was interrupted for 2 consecutive months or more.
-4 = Died:	Patient who dies from any cause during the course of treatment.
-5 = Transfer out:	Patient who has been transferred to another recording and reporting unit and for whom treatment outcome is not known. Record the name of health facility the patient was transferred to in the remarks column, if this is known. If the result of

the treatment outcome is known from the other health facility because the return slip of the TB09 form and/or TB01 form is/are returned, enter this result and not transfer out.

-6 = Treatment : failure — New patient who is sputum smear (+) at 5 months or later during treatment, or who is switched to Category IV treatment because sputum turned out to be MDRTB. It also includes previously treated patient who is sputum smear positive at the end of his retreatment or who is switched to Category IV treatment because sputum turned out to be MDRTB

TB/HIV Activities – the following 4 columns are for collaborative activities in TB/HIV care.

HIV test results and Date of Test: Record **RT** if patient was counselled but refused test, +ve if test positive, - veif test negative and **ND** if counselling and testing was not done. Only documented evidence of HIV testing from a reliable and recognised laboratory (NACP accredited laboratory) should be reported here. If there is any doubt, repeat the test locally. An empty column, an RT or an "ND" entry should be a reminder at every subsequent visit to offer and/or encourage HIV testing. Do not stop counselling until patient has consented to have the test and obtained the results.

Co-trimoxazole Preventive Therapy (CPT): All HIV positive TB patients should be started on CPT unless contraindicated or the CD4 count is known to be above 350. Record N if patient was not on CPT or else enter the date of initiation of CPT. An empty column here in any HIV positive patient should be a reminder at every subsequent visit to offer and encourage CPT at each subsequent visit.

HIV Clinic Number and Date of Registration: All TB patients co-infected with HIV should be referred to the HIV clinic. Record the date of registration and the registration number at the HIV clinic here. An empty column should be a reminder at every subsequent visit to remind/ensure the HIV positive patient attends the HIV clinic to access HIV care and treatment.

Antiretroviral therapy (ART): All HIV positive TB patients should be assessed for and given highly active antiretroviral therapy (HAART). The date of start of HAART and the ART registration number should be recorded. It is important for the clinician to know when a patient is also on HAART because of the potential for side effects and drug-drug interactions, therefore the drug regimen should be recorded in the remarks column.

Remarks - This is the last column in the Institutional TB Register. The comments to be recorded in this space may include mention of treatment supporter and additional information about patients transferred-out, re-registered after default or failure etc.

WRITTEN EXERCISE

TASKS 3: FILL THE COMMUNITY HEALTH OFFICERS' REGISTER

In addition to registering the patient in the Institutional TB Register some of the information is transferred to the Community Health Officer's (CHO's) register. The register is used to monitor how the patient is actually complying with the anti-TB treatment in the community. It is updated by the CHO when he/she visits the patient and the treatment supporter to deliver drugs and see the progress of treatment.

A sample of the card is shown on the next page. It is filled in as follows:

The CHO should fill in his/her name and the health facility he/she is based.

Unit TB No. This is the registration number in the TB unit. (facility)

District TB No. This refers to the District TB number given by the DTC.

Surname This is the surname of the patient

Other Names This is the First name and other names patient is popularly known in the community

Address This should be a detailed address so that the patient can be traced any time. Record also the telephone number on which the patient can be reached.

Village/Community This is the village/Community where the patient and treatment supporter reside.

Treatment Start date This is the date when patient treatment was started.

Patient treatment group This is the patient treatment group. Enter either new cases/new treatment group or previously treated group.

Date of Drug delivery This is the date when the CHO (or any health care provider) delivers the drugs to the treatment supporter. For example if drugs were delivered 1st July 2010 record 1/7/10. Record this in the top row for each column.

Missed doses These are the doses that the patient has missed since the last drug supply (usually 4 weeks). This information is obtained by reading the patient's TB treatment card. It is entered on the next visit when the CHO/health care provider is delivering the next supply of drugs. For example if the drugs are delivered on 1 July 2010 when the H/W comes to deliver drugs on 29th July 2010, he fills the doses not taken in the period 1-28th July in the box below 1/7/10. Record this in the bottom row of each column.

Treatment supporter: Record the name of the person who is assigned to support the patient take his drugs.

Refer to page 43 of workbook.

KEY POINTS

All patients diagnosed as having TB must be registered with the TB programme using the following: TB treatment card (TB01), the District TB register (TB03), the Institutional register, the CHO's register.

The TB treatment Card is filled in when registering the patient and the information recorded includes the patient's name and address, the name and address of the treatment supporter, the treatment centre and the District TB number.

The Institutional TB Register contains information on all patients diagnosed as having TB at the treatment centre, their treatment and the results of follow-up smear examinations. It is used for monitoring the patient's treatment.

The DTC uses this information to monitor the effectiveness of the programme since quarterly reports on case finding and treatment outcomes are based on information transferred from the Institutional to the District TB registers.

THE COMMUNITY HEALTH OFFICERS' REGISTER

Name of Health Care Worker ………………… ……. Health Facility Name ………………………………

Unit TB No.	District TB No	Surname Other Names	Address & Community	Treatment Start date Treatment group	Date of Drug Delivery Number of Missed Doses*								Treatment Supporter

COMMUNITY HEALTH OFFICER'S MONITORING REGISTER

DRUG DELIVERY AND PATIENTS' COMPLIANCE

SERIAL No	District NO	Surname Other Names	Village/ Community	Delivery (Date) Drug Missed doses (No)										Treatment Supporter
	TB NO	Surname	Village/ Community	Drug Delivery (Date)										Treatment Supporter
	Unit No	Name	Village/ Community	Missed doses (No)										Treatment Supporter
	TB NO	Surname	Village/ Community	Drug Delivery (Date)										Treatment Supporter
	Unit No	Name	Village/ Community	Missed doses (No)										Treatment Supporter
	TB NO	Surname	Village/ Community	Drug Delivery (Date)										Treatment Supporter
	Unit No	Name	Village/ Community	Missed doses (No)										Treatment Supporter
	TB NO	Surname	Village/ Community	Drug Delivery (Date)										Treatment Supporter
	Unit No	Name	Village/ Community	Missed doses (No)										Treatment Supporter

#Patient Treatment group. Enter either New cases or previously treated group
***The number of doses that the patient has missed since the last drug delivery (usually 4 weeks)**

EDUCATING THE TB PATIENT ABOUT TB/HIV AND MANAGING TB CONTACTS

INTRODUCTION

After being diagnosed with TB every patient will have a discussion with a trained TB health care provider. He/she will educate the patient on TB and contacts, and on the selection of the treatment supporter (chapter 9). This education is done at the treatment centre where the patient is diagnosed. Later the health care provider will reinforce these messages when he/she visits the patient in his home and when orientating the chosen treatment supporter (chapter 10).

LEARNING OBJECTIVE

At the end of this session participants should be able to

- Educate the patient about TB/HIV and household contacts.

This activity will be split into separate tasks that we will study in turn. These tasks are:

1. Educate TB patient and family about TB/HIV
2. Manage household contacts

TASK 1: EDUCATE ABOUT TB

Although there are common key messages that all TB patients need to be made aware of, it is important that the health worker knows the details of the individual he/she is speaking to. This is to ensure that the education message can be tailored to the needs of that patient.

Before educating a patient about TB it is useful to establish what he/she already knows about the disease and what state of mind he/she is in. He/she may have previously been taught about TB at the time of diagnosis or he/she may never have heard of it. If he/she has just been told of the diagnosis he/she may be disturbed by receiving the news and may have lots of questions.

Informing a TB patient about his diagnosis is a sensitive task. Many patients do not want to know that they have TB and they may therefore avoid facing the reality. News about their suffering from tuberculosis is generally unwanted and difficult for the patients. Tuberculosis is more than just a health problem for the individual patient. Labelling a patient as having "Tuberculosis" has social consequences on patients and their families. Women are at a greater risk of suffering from these undesirable social consequences. As health care providers we need to understand these concerns and talk to the patients in a way that is sensitive. We also need to manage tuberculosis while understanding the social situation.

Asking the patient what he knows about TB will also enable us, as health care providers, to explore any superstitions and misconceptions.

The key education messages are found in our desk aide. It is reproduced on the next page.

Educate TB Patient

Health care provider to start at the beginning of treatment (month "0") and reinforcing key messages at 2 (3), 5 and 6 (8) months, and at home visits.

- Educate the patient using the following key messages

√ Tuberculosis is a disease of the lungs. TB can also infect other parts of the body (lymph nodes, bones, kidneys). Your TB is in the….. (Explain the part affected).

√ Cough spreads the TB germs. TB is not spread through plates or clothes (etc.)

√ Cover your mouth with a hand kerchief or a cloth/tissue when you cough.

√ There is no reason to feel ashamed of having TB.

√ Tuberculosis is not inherited. ***It is a disease anyone could get.***

√ TB medicines are free.

√ Treatment cures tuberculosis. You will soon feel better with treatment and not be infectious to others after weeks of treatment

√ You must take TB tablets for 6-8 months. Your treatment will last until.....…(say which month it finishes).

√ However, it is very important to take all the pills for the full 6-8 months... If you stop treatment early the TB will come back and be much harder to treat.

√ Educate patient on balanced diet

Reassure patient

You may feel sick now, but the tablets will make you better as long as you take them for the full-specified period.

Explain the treatment to the patient:

Show the tablets and explain the number of each tablet to take daily

Explain that: "we will arrange for someone to help you take your tablets daily"

Say: "do not worry if the urine goes orange, it is normal with these drugs. However, if you have any other unwanted effects from the drugs, report to health facility"

Educate on HIV in TB patients

Some people with TB have HIV as well. You can't tell by looking that someone has HIV.

People with HIV and TB can be cured of their TB the same as people without HIV

Protect yourself and others from HIV by Abstaining, Being faithful or by using a Condom each time you have sex (ABC)

It is recommended that you have an HIV test. If you are HIV positive, you can live positively and you can have anti-HIV treatment

Let's look at some of these messages in more detail.

- Patients should cover their mouths with a handkerchief, tissue, cloth, (only) when they cough. Using a tissue or toilet roll, which are disposable or can be burnt are preferable. This will reduce the chances of spreading the TB germs through the droplets produced.

- Patients should not spit close to other people. Spit into a container with a cover and containing ash, bleach (parazone) or other disinfectant. Empty it in a hole and cover with soil, then clean the container.

- TB germs are not spread by sharing dishes, plates, clothes, or through sexual contact. This is an important message; otherwise people may unnecessarily avoid contact with the TB patient.

- Patients are required to visit the diagnostic or treatment centre for clinical assessment and for sputum examination at the end of the 2nd (3rd if a re-treatment case) 5th and 6 or 8th month of treatment. Please note that in new patients **you do not have to extend the intensive phase of treatment** if sputum is positive at month 2. You should do another sputum smear at month 3. The test at 2 months is to assist in detecting problems with patient supervision and for monitoring programme performance, at 5 months that treatment is working well, and at 6 or 8 months to confirm that they are cured. The date of the next sputum examination should be recorded on the TB patient card and explained to the patient. Patients should be advised whether the sputum will be taken at the treatment centre (and sent to the laboratory) or whether they should go to the laboratory at the diagnostic centre and take along a sputum sample for examination.

TB and HIV

TB is one of the infections, which commonly occur in HIV infected people due to the weakened body defence (immune deficiency). This makes dormant TB more likely to become active.

The clinical picture of TB depends on the stage of HIV infection. If the immunity is relatively good, then the TB will be similar to that of non-HIV infected people; with a high proportion of sputum positive pulmonary TB. With low levels of immunity, a higher proportion of TB patients have smear negative pulmonary, extra pulmonary and severe forms of TB, for example TB Meningitis.

Diagnosis of smear negative TB in an HIV positive person is difficult because:

- The clinical symptoms for TB and HIV are similar, for example chronic cough, fever and weight loss.

The chest X-ray signs of TB, especially in late HIV disease, may be atypical TB and HIV are linked. Most TB patients are also HIV positive, although many have not had a test, and do not know their HIV status. For this reason it is important to educate a person with TB about HIV. Unless a person is in the final stages of HIV infection (AIDS), it is not possible to tell by looking who has HIV infection and who does not.

For this reason everyone, especially anyone who has TB, should also know how HIV is transmitted and avoid contributing to the spread of HIV.

HIV is most commonly passed on through sex. Emphasise the benefits of an HIV test. If a patient is HIV positive then they should always use a condom when they have sex.

Also if the patient is known to be HIV positive, then they can have regular follow-up, prevention of other infections with daily co-trimoxazole; and have anti-retroviral (ARV) drugs. The TB patient if found to be HIV positive will be referred to the relevant HIV related services.

The health care provider should talk to the patient about having an HIV test. If he or she is interested in having a test the health care provider should provide more detailed counselling and make arrangements for the test and result.

People with HIV and TB can be cured of their TB, just the same as non HIV infected people. Any person, HIV positive or negative, must take the TB tablets properly every day for the full course of treatment.

Discuss with the patient who is considering a test the benefits of treatment for HIV related illnesses:

- If found positive, you can protect your partner by using a condom every time you have sex.
- Various infections are common in people with HIV, and these can be treated early and so avoid early death.
- All TB patients must be screened for HIV and co-trimoxazole prophylaxis should be given to all TB/HIV patient
- In addition all TB/HIV co-infected patients should be given ART as soon as possible according to the national guidelines
- Pregnant women who are HIV positive are treated according to National PMTCT guidelines to protect their infants from getting HIV.

Ask if he or she has any questions or concerns, if so answer these.

KEY POINT

- The health care provider must make sure that patients have clearly understood the messages provided by asking specific questions.
- The patient should be given an opportunity to share his/her concerns about TB and HIV.
- When the immunity level drops due to HIV, smear negative pulmonary and extra pulmonary TB is more common.
- HIV related TB responds to TB treatment in the same way as non-HIV/TB. However TB/ HIV patients are more likely to die early during the TB treatment if they are not initiated early enough on HIV care. It is important to look for and treat other HIV related infections.

PRACTICE EXERCISES

INTRODUCTION TO PRACTICE EXERCISES

These practice exercises have been written to enable us to practise educating a TB patient about their illness. The format of the practice exercises will be the same as previous ones. We will use the desk-aide to ensure we do not forget important issues.

- We will work in groups of three
- An introductory paragraph will set the scene. After reading this paragraph the members of each group will decide who is going to play the role of the health care provider and who will play the patient. It is important that during the course each person has the chance to try each role so as to ensure that each person takes a different role from the ones taken earlier.
- Next each participant will turn to the relevant page and prepare him or herself before starting the practice exercise.
- The Observer will use the desk aide and comment on the good and could-be better points
- Each practice should last approximately 5 minutes.
- After the practice the person playing the patient will give structured feed back about the consultation to the person playing the role of the health care provider.
- Remember for the practice to be as effective as possible it is important for it to be as realistic as possible. If you are playing the role of the patient really try to behave and talk as if you have their character and worries.

Refer to workbook.

TASK 2: MANAGING HOUSEHOLD CONTACTS

Household contacts are people who have been sharing the same living premises and the daily life activities with the patient. It is important to identify household contacts of a patient with sputum smear positive pulmonary tuberculosis in case any of these contacts are also ill. An assessment must be made in order to reduce the risk of missing other cases in the family. This would not only leave a patient untreated but also risk continued transmission of TB to other family members. The management of household contacts consists of the following:

Identifying and Managing Household Contacts

All the household members should be considered to be household contacts. All household members irrespective of age and sex needs to be considered and those who need further screening at the diagnostic centre need to be identified. It is the responsibility of the TB health care provider to do this preliminary screening when registering the TB patient. Also, the community health worker (CHO) should review the situation during their first visit. After interviewing the patient, a decision should be taken based on the following points:

- Adults and children with symptoms suggestive of tuberculosis (i.e. cough two weeks or more, weight loss, fever etc.) should be asked to visit the diagnostic centre at their earliest convenience for sputum examination.
- Chest X-ray when cough for two weeks or more
- Chest X-ray when cough for 24 hours plus fever, drenching night sweats or weight loss
- If a child is less than 6 years and has not had BCG he/she should go to the treatment centre for BCG- especially if he/she was born outside Ghana.
- A child who is being breast-fed by a mother who has sputum positive TB must be seen and will need isoniazid tablets for 6 months. This will be arranged by the TB health care provider at the diagnostic centre.

- Household contacts that are HIV positive are at greater risk of becoming ill from TB and can deteriorate more quickly. It is important that any household contacts who are known or thought to be HIV positive should be told to go quickly to the diagnostic centre for assessment if they feel ill. All such household contacts should be counselled for HIV testing.

The significance of screening all household contacts should be explained to the patient. A list of all household contacts (names, sex and age) that have the above characteristics should be written down, given to the patient/Community Health Officer (CHO) and arrangements made for them to visit the health facility. The CB-DOTS desk aide summarises these points.

MANAGING HOUSEHOLD CONTACTS – at a home visit by the HW

➢ All household contacts of a sputum smear-positive patient are screened by asking questions about cough and other symptoms. (A TB screening tool is available on page 32; Refer Desk Aide page...)

➢ The following two types of household members are identified and called to the diagnostic/ treatment centre for further assessment and/or management:

√ 6 years old or more with symptoms suggestive of tuberculosis,

√ Less than 6 years old, regardless of symptoms suggestive of tuberculosis

➢ The household contacts of sputum smear positive cases are screened for symptoms and

Household Contact	Screening	Management
Adult	Chest symptoms (cough ≥ 2 weeks or other TB symptoms)	Arrange for sputum smears Chest X-ray
Child	No TB symptoms (0-5 yrs only)	√ Give INH prophylaxis for 6-9 months √ Give BCG (if no prior BCG)
	History of cough of ≥ 2 weeks, or fever, or weight loss	Refer to Medical Officer, or Paediatrician if available
Child breast fed by smear positive mother		√ Treat mother √ Protect child with INH (10 mg/kg) for 9 month √ Continue breast feeding √ At completion of 6-9months, give BCG if not already given.

WRITTEN EXERCISES

INTRODUCTION TO WRITTEN EXERCISES

The following exercises are designed to practise making decisions about how household contacts of TB patients should be managed. Use page 23 to 27 of the desk aide to help you decide about the contacts of each of the cases given below.

It is best if you do these exercises individually. In that way you will be able to discover your strengths and weaknesses when it comes to interpreting the forms.

Write your answers into your workbook (not into these training materials as they will need to be used again in another training), or if provided onto the exercise sheets provided. Refer to workbook.

KEY POINTS

All patients who have been diagnosed with TB need to receive education about their illness.

The most important educational messages are:

- Cough spreads the TB – cover your mouth when coughing
- TB is curable and treatment is free
- You will be cured if you take all your drugs correctly
- Anybody can get TB but some people get TB when their body is weakened due to alcohol, malnutrition or HIV infection
- You can not tell if you have HIV without doing a test
- Every body should protect themselves and others from the spread of HIV by abstinence or using a condom every time you have sex
- If you have TB, members of your family may also have the infection – if any one in your family has a cough, as well as all children under six, ask them to go to the health facility to be checked for possible TB.
- Everyone should know their HIV status so as to live a positive life and get preventive and HIV treatment if positive

CHAPTER NINE

EDUCATING THE TB PATIENT ABOUT THE ARRANGEMENTS FOR COMMUNITY-BASED TB TREATMENT AND CHOOSING A TREATMENT SUPPORTER

INTRODUCTION

Once the patient has learnt about TB he/she must now learn how the community-based TB care is organised.
The education of the patient will be done initially by the health worker at the facility where they are diagnosed. This may be the treatment centre (with no laboratory) that requested the sputum smears and then received the positive sputum result and diagnosed TB, or, it may be the diagnostic centre, for example if they have been admitted to hospital. (In this case the patient will then be referred/transferred to the nearest treatment centre for further care. Then the treatment centre health care provider will also need to continue to educate the patient and arrange a treatment supporter.

In this chapter we will study in detail how to educate a patient about community-based TB DOTS care.

LEARNING OBJECTIVE

At the end of this session you should be able to;

- Understand the main points about community-based TB care and choosing a treatment supporter.

This activity will be split into separate tasks that we will study in turn. These are:

1. Educate the patient about community based TB care (CB DOTS)
2. Select the most appropriate treatment supporter
3. Confirm that the chosen person is prepared to be a treatment supporter.

TASK 1: EDUCATE ABOUT CB-DOTS

In addition to understanding the importance of their illness patients need to understand how their treatment will be organised. Once again we need to be aware that patients may already have some ideas about TB treatment, based upon their knowledge of the previous TB programme whereby patients were admitted for 2 or more months in hospital away from their families. Although they may be pleased to hear that this may not happen to them, they should be made to realise that TB remains a serious illness and that the change from admission to community-based care does not mean that TB is not serious.

It is very important to explain the importance of the daily watching of the swallowing of tablets by a treatment supporter (just as would be done by the nurse in hospital) to the patient. Also, that the health care provider together with the patient in agreement will identify an acceptable and affordable means of supervising his/her treatment.

Refer to page of the desk aide. (Pg.22 to 25).

Explain CB-DOTS to the patient, and why it is important to continue Treatment taking medicine at home

Explain:

- It is important that you take your drugs every day, for 6 or 8 months.
- This is difficult to do. Almost everyone forgets to take medicine especially when they are feeling better and are able to work.
- If you wish, you may take the tablets at home instead of coming to the hospital/health centre daily for the first two months. If so, a treatment supporter instead of a nurse can support you take your tablets.
- We will help you choose someone to help you complete the TB treatment and support you while you take your treatment, so that you get the right pills in the right dose for the right length of time-to get you cured.
- Directly Observed Treatment (DOT) means having some one watch you swallow all your drugs every day and check for problems every week.
- We will arrange DOT for you-that is, we will help you choose a treatment supporter and train him/her to support you swallow the tablets every day and check for problems every week.
- You can tell your treatment supporter if there are any unwanted effects of the TB tablets, and they can go with you to the treatment centre.
- This is why we advise you to have a treatment supporter to support you take your treatment.
- With DOT you will be able to take TB treatment near your home. Every month you will visit the treatment centre for review by the health service provider. At special times (at the end of 2 or 3, 5 and 6 or 8 months) you will visit either the diagnostic centre or the treatment centre to have sputum tests.
- Ask the patient if she/he has any questions or concerns. Answer these concerns.
- **Ask** if they accept community based TB care, if no, arrange for treatment at the health centre (treatment centre). If yes, identify and select treatment supporter and register patient.

There are some essential points that we need to consider:

- It is important to convince the patient that continued treatment for 6 or 8 months is essential in order to ensure that he/she is cured on completion of treatment. It is also important that the patient appreciates the need to identify a person who can support him/her to complete treatment without interruptions.

- The concept of a patient taking tablets under supervision may be difficult for patients to grasp. Patients generally take time to understand, get convinced and agree to TB care including directly observed treatment in the community. You may explain that with hospital based care the nurse gives out and watches the taking of tablet, while with community care, the treatment supporter will instead give out and watch taking of tablets. Patience and tolerance is therefore required.

Telling the patient you must do this is not an effective way. Rather it is necessary to discuss the advantages of such an approach, as compared to hospital based DOTS. Explain each point, and then wait while the patient responds, and answer their questions. By having a genuine two-way conversation between you and the patient, respecting their views, most patients will be convinced of the benefits of community supervised treatment.

- It is important that the patient appreciates the importance of a treatment supporter each day watching the swallowing of tablets (directly observed treatment) in order to increase the chances of the patient complying with treatment. If the patient accepts CB-DOTS simply as a result of pressure from the care provider or because of ill health, he/she may eventually not complete treatment.
- Directly observed treatment is important, as most TB patients forget to take tablets, especially when they start feeling well and return to work (i.e. after a few weeks of treatment). Directly observed treatment is especially critical during the first two months of treatment when the patient may be seriously ill, at risk of acquiring drug resistance, and most likely to transmit TB.
- Treatment supporters have generally been shown to be helpful in encouraging patients to take the right tablets for the right length of time and therefore increase the chances of the patient getting cured.
- Remember that if an inconvenient way of directly observed treatment is imposed upon a patient it is likely he/she will later default. The most appropriate and convenient treatment supporter should be selected for each patient. The patient has the choice, and his/her opinions and constraints must be respected.

TASK 2: SELECT AN APPROPRIATE TREATMENT SUPPORTER

Choice of a suitable treatment supporter should be appropriate to the specific needs of the patient and should involve flexibility and innovation identifying an appropriate person.
This statement is made on the basis of one underlying principle. That is:

The treatment supporter must be accountable to the health services and accessible to the patient.

Identification of a suitable and acceptable treatment supporter for the patient is the key to the success of community based DOTS. The ***Institutional TB co-ordinator*** at the health centre usually does this, but any ***health care provider responsible*** for TB in a health facility can do it.
There are certain characteristics that are desirable in selecting a treatment supporter. These characteristics include his/her being:

- Accessible
- Reliable
- Accountable to health services
- Caring but also capable of influencing the patient and
- Committed.

To be able to read and write is an added advantage.
In our TB programme the available treatment supporter options generally include:

- ***Health facility based service provider i.e. health staff member at the selected treatment centre***
- ***Community health worker (e.g. CHO) i.e. any person formally associated with /accountable to health services and living close to patient's place***
- ***Community volunteer i.e. suitable person selected from community e.g. teacher, retired nurse, pastor, assembly man etc.***
- ***Family member i.e. a suitable member of the patient's family selected for treatment support.***

After having a two-way discussion with the TB patient the selection of a suitable treatment supporter is possible. The decision of who to select as a treatment supporter is generally influenced by many factors including the:

- physical condition of the patient,
- distance (where they live),
- cost and the patient's ability to pay for transport,
- the occupation of the patient,
- Social acceptability to the patient and supporter.

If these factors are not adequately considered at the time of selecting the supporter, direct observation is more likely to fail or to face problems at a later stage.

The following table includes some examples of types of questions to ask.

Examples of Questions	Related Messages
Ask questions to identify and help solve any problems that the patient may have with treatment. * How far away is your home? * How did you travel to the health facility? * How long did it take you to come here today? * Where do you work? What are your working hours? * Are there difficulties that may keep you from coming for treatment? If so, what? * Are you likely to move? If so, when and where? How long will you stay?	Directly observed treatment is necessary to ensure that all patients take correct drugs for the required time. It is dangerous to stop or interrupt treatment because the disease may become incurable and because you will continue to spread TB to others. Inform the health centre if you plan to travel or move so that arrangements can be made to continue treatment
If it is too far or inconvenient for the patient to come to the health facility for treatment, help the patient identify a convenient treatment supporter, and agree how the patient will have directly observed treatment. * Where do people usually go for health care in your village? * Where do you work or go each day?	Directly observed treatment is necessary and can be arranged even if you cannot come to the health centre.

Examples of Questions	Related Messages
Ask about household contacts: * Are you married? Do you have any children? How many and what ages? * How many people live with you? What ages? * Does anyone else in your household have a cough? Who has a cough?	The following people should be examined or tested for TB: all children under 6 years of age living in your household; other household members with a cough.
Explain what to expect and what to do next.	What to expect: (If rifampicin given) urine will turn orange-red; duration of treatment if all goes well; normal life and work are possible during treatment. What to do next: where and when to go for next treatment; whom to bring for examination or testing

The health facility staff, community health care provider or other volunteer can be equally good treatment supporters, provided the choice is based on the wishes and circumstances of the patient.

If a facility health care provider or community health care provider is not accessible or acceptable, then also consider other community volunteers, such as teachers, students, religious leader, shopkeeper and other community volunteers.

Family member treatment supporters may then also be considered when supervision at the health facility, a community health care provider or community volunteer is not feasible or not acceptable. Experience shows that family member treatment supporters are effective when there is also weekly visits by the community health care providers.

In the case of a health facility staff or community health care provider or community volunteer supporting the treatment, the patient will have to go to the treatment supporter daily (at a mutually agreed time preferably in the morning before the first meal) for supervised intake of tablets.
In the case of a family member supporting the treatment, the community health care provider should also see the patient on a weekly basis. On each visit he/she should monitor compliance by asking questions, reviewing the treatment support card and counting the tablets. The patient should also be encouraged to complete the treatment.

Using an unacceptable or unsuitable treatment supporter can lead to patient later deciding not to continue taking treatment or to the patient seeking care elsewhere. The quality of care from alternative care providers is likely to be poor.

KEY POINT

Some people who may be considered in your district for the role of treatment supporter

1. Family member
2. Community volunteer
3. CHO
4. Trained NGO member

Refer to desk-aide (page 15) however it is reproduced below for convenience.

Help select the best treatment supporter.

Explain:

You can decide who is the best person to be your treatment supporter.

- Experience with TB patients suggests that the best person is someone who:
  - Lives nearby so that you can meet daily.
  - Is reliable and will support you take the correct number of tablets every day.
  - Is concerned about you finishing treatment and getting cured
  - Is acceptable to you the patient
  - Someone who is available nearly every day in the month,:
- People with TB often choose either:
  - A health facility staff, if nearby, or
  - A community health worker
  - Ask, would you be able to visit the health worker or the treatment centre (identified) each day?
- Look: at the list of treatment supporters to identify a CHO or other health workers living in the community. Are any near/acceptable to patient?
- Agree on who is a suitable and acceptable treatment supporter. If no suitable treatment supporter is identified and you cannot see a health worker everyday:
  - You may choose a responsible community or family member who is concerned and reliable to be your treatment supporter. You will also have to see the health worker each week to make sure there are no problems.
- Choose the most appropriate community/family member and health worker for this now.

Summarise by saying:

- Your treatment supporter is …
- Your health worker is (if different from health worker treatment supporter) ….
- Your treatment centre is ….
- Your diagnostic centre is …..

Arrange contact with treatment supporter:

Arrange to meet treatment supporter at the treatment centre within the next week by sending letter, verbal message through the patient, a text message or email. You can also call the Treatment Supporter. Tell the patient they must also attend this meeting. Give the patient enough tablets to last them till the day of this meeting.

TASK 3: CONFIRMING THAT THE CHOSEN PERSON IS PREPARED TO BE A TREATMENT SUPPORTER

The Health care provider and the patient have selected the person who is most appropriate to act as the treatment supporter. Arrangements now need to be made to contact that person to see if he/she agrees to take on the role.

Some of the people selected would have already been trained to be a treatment supporter. This includes community health care providers, health facility nurses and people who have already acted as a treatment supporter for another patient. For these people there will already be a system by which they can be contacted and the request for help made. For other people, such as relatives and community volunteers, a specific meeting will need to be arranged to see the selected person and request their help and train them for the role.

The exact arrangements for contacting these different groups of people will vary from district to district and area to area. In the table below list the arrangements which will be made in your own district, for each group of people considered:

Group of possible treatment supporter	Arrangements for contacting individual in that group
■	■
■	■
■	■
■	■
■	■
■	■
■	■

PRACTICE EXERCISES

INTRODUCTION TO PRACTICE EXERCISES

Explaining to a patient about the selection of the most appropriate person to be his/her treatment supporter is a very important task in CB-DOTS programme. We will now spend some time practising the skills involved in this by means of practice exercises.

Remember:

- An introductory paragraph will set the scene. After reading this paragraph the members of each pair will decide who is going to play the role of the health care providerand who will play the patient. It is important that during the course each person has the chance to try each role to ensure each person takes a different role from the ones taken earlier.

- Next each participant will turn to the relevant page and prepare him or herself before starting the practice exercise.
- Each practice should last approximately 5 minutes.

- After the practice the person playing the patient will give structured feed back about the consultation to the person playing the role of the health care provider.
- Remember for the practice to be as effective as possible it is important for it to be as realistic as possible. If you are playing the role of the patient really try to behave and talk as if you have their character and worries.

Refer to workbook.

KEY POINTS

All patients who have been diagnosed with TB need to receive education about community-based TB care.

All patients need to understand the importance of TB treatment being supervised by a treatment supporter.

The exact person to be a treatment supporter should be:

- Living nearby
- Available/acceptable
- Reliable
- Concerned
- Committed

The exact person to be the treatment supporter should be chosen during joint discussion between the health care provider and the patient.

CHAPTER TEN

PREPARING THE TREATMENT SUPPORTER

INTRODUCTION

Once a person has been selected as a Treatment Supporter, and has agreed/accepted to take on this role, the TB Co-ordinator or any health care provider in-charge of TB care will orientate him/her about the role and ensure that he/she have the attributes, skills and knowledge necessary for the job.

Treatment Supporters could also be community health officers who have been trained about their role in the TB programme. However, sometimes a patient will select a person who has not previously been trained in TB or in the role of the Treatment Supporter. This could happen for example, if the patient lives in an area where there is no Community Health Officer (CHO).

Even if a person has been previously trained to be a Treatment Supporter he/she should undergo a session of revision training every time a new TB patient is allocated to their care. Also, the Treatment Supporter must understand the precise details of the treatment for this patient.

LEARNING OBJECTIVE

At the end of this session participants should be able to:

- Prepare a Treatment Supporter for their role in the TB programme.

The Treatment Supporter must be able to do all 9 tasks that are required for his/her role in the community-based TB programme. In preparing the Treatment Supporter the Health care worker should know the following tasks:

1. To help a person to agree to be the Treatment Supporter
2. Collecting the tablets, on a monthly basis, and store them safely
3. Directly observing the intake of tablets (in the right number of drugs and dosage)
4. Recording the daily intake of drugs in the Treatment Support card
5. Encouraging the patient to attend the health centre and hospital/clinic for follow up as required.
6. Identifying possible side effects and refer to the health facility if necessary.
7. Helping the patient to overcome difficulties to continue the treatment
8. Identifying the patient who doesn't arrive for support, and help trace and retrieve them.
9. Supervise and re-supply the treatment supporter

Consequently we will be studying each task in turn in this chapter.

KEY POINT

The role of the treatment supporter is critical to the success of community-based TB care.

A treatment supporter can only fulfil this role successfully if he or she is properly trained and supported

Training of the treatment supporter is consequently one of the most important tasks for the health care provider or TB Coordinator.

Before we look at each of the tasks in detail, let us look at the relevant section of our desk aide. It is reproduced here below.

Preparing the Treatment Supporter
This is done by the ITC and CHO or any other assigned trained health care provider

➢ **Ask:** Do you accept to be a treatment supporter? If yes, then:

➢ **Teach the treatment supporter:**

√ About TB using the key messages. About DOT being the best way to help a person complete his treatment

√ About the details of the patient's treatment regimen by showing example tablets, in the correct numbers for that patient's regimen. Explain how the tablets should be stored

√ About giving the treatment correctly by showing them a copy of the Treatment Support Card

√ Do a role-play of daily treatment support.

√ About recording the observation of daily treatment on the treatment support card.

√ Explain how every day, they must record on the treatment support card if the tablets are taken.

√ Practise daily recording by means of a role-play.

➢ **Discuss**

√ Any concerns of the supporters for example the risk of catching TB themselves

√ How the treatment supporter will get the tablets by collecting them every month when they accompany the patient to the treatment centre for review.

➢ **Explain what to do if:**

• **The patient misses 2 days of treatment:**

√ The treatment supporter must visit the patient and try to sort out the problem - if they cannot they must report to the CHO, clinic nurse or TB coordinator as soon as possible

• **The patient does not agree to continue treatment:**

√ The treatment supporter must report to the CHO, clinic nurse or ITC as soon as possible

• **The patient has problems with any drugs or new symptoms:**

√ The treatment supporter should tell him/her to go to the clinic straight away

• **The patient has to go away for a few days:**

➢ The treatment supporter should remind the patient of the importance of taking medication. If the absence cannot be avoided, the treatment supporter should give the tablets for the correct number of days. When the patient returns, record the treatment as taken but not observed.

TASK 1: AGREEING TO BE THE TREATMENT SUPPORTER

When a person is identified as a possible Treatment Supporter the health care provider will approach him/her to ask for their help. To be a Treatment Supporter is an undertaking that requires commitment and responsibility. It is important that a person is aware of what is involved before they can commit themselves to helping.

The selected person needs to have a basic understanding of how community- based TB care is delivered and the importance of the role of the Treatment Supporter. He needs to be educated about the basic facts of TB and re-assured, so that he understands that as a Treatment Supporter he/she will not put him/herself or his family at risk. The health care provider should use the desk aide to educate the Treatment Supporter about community-based care and "DOTS". He also needs to have an overview of the 9 tasks that will be required of them – the task list given above can be used for this purpose.
Having agreed to undertake the role of a Treatment Supporter the person must be aware that they will receive detailed training on all of the tasks involved.

TASK 2: COLLECTING THE DRUGS AND STORING THEM SAFELY

The Treatment Supporter will be informed of the local arrangements for collecting the supply of drugs for the patient. The maximum number of daily doses held by the Treatment Supporter for a patient will be one month's supply. The Treatment Supporter will collect the drugs from the treatment centre, every month. This could be at the same time as the patient is attending for his or her monthly review, or, if the Treatment Supporter is a CHO, it could be at the time of the monthly CHO submission of reports. In other programmes the patient will collect the drugs at the monthly review and deliver to the Treatment Supporter on their way home.

Once at the home of the Treatment Supporter the drugs must be stored in a safe place (under lock and key, if possible) and out of reach of children. In addition, the storage place should be dry and cool.

TASK 3: DIRECTLY OBSERVING THE INTAKE OF THE TABLETS

The Treatment Supporter must understand the exact daily dose needed by the patient. This is especially important if the Treatment Supporter has more than one patient under his/her care. It must be explained that the number and dose of tablets will vary from patient to patient due to the age, weight and type of TB, and that this has been calculated and fixed by the doctors at the hospital/clinic. The Treatment Supporter should never change this.

The best way to teach a Treatment Supporter about the exact number and type of tablets needed by a specific patient is to show the actual tablets and then to ask the Treatment Supporter to select the correct dose from a selection of tablets. To ensure that direct observation is done properly, the observation process has been described in detail on the reverse of the Treatment Support card. This is reproduced on the following page.

How to Directly Observe TB Treatment

1. Welcome the patient. Ask how he or she is and listen to the response while you begin to prepare the medicines.

2. Prepare for Observed Intake:
√ Wash your hands and pour a glass of water for your patient.
√ Open your box of medicines.
√ Check the patient's name and surname.
√ Take out the patient's treatment envelope, which contains all his or her medicines.

3. Observe the Intake:
√ Open the packet and pour the tablets directly onto the hand of the patient (avoid touching) and offer him or her a glass of water.
√ The tablets must all be taken one at a time, while you, the TB Treatment Supporter, watch your patient swallow them. If your patient finds it difficult to swallow them one after the other, let him or her take a short breathing space. The medicines must be taken within half an hour to make sure that they work together.
√ Talk to your patient while he or she is taking the tablets. Make sure he/she swallows the tablets.

4. Record on the Treatment Support Card (kept with supporter).
√ Tick the column as appropriate

DO	DO NOT
Make sure the medicines are locked away and safe.	× Do not store tablets in damp places.
Keep medicines out of reach of children	× Do not drop tablets on the floor. (Throw away tablets, which fall on the floor).
Know the name, colour and strength of each tablet.	× Do not replace one patient's tablets for another's.
If the patient cannot swallow the tablets, crush them.	× Do not give only part of the daily medicines
Encourage him/her when feeling depressed, or despairing that he/she is not going to get better, Advise that if he/she takes tablets every day for the full 6 or 8 months – he/she will get completely well.	× Do not criticise, × Do not get angry or shout at the patient - it is not easy being ill and taking tablets for 6 or 8 months. Everyone gets frustrated sometimes

KEY POINT

It is important for the treatment supporter to avoid touching the tablets with his/her hands

The aim of DOT is for every dose of TB treatment taken be observed by a trained and responsible person. However we know that in the real world certain situations arise which may make this difficult. Very occasionally it may be necessary for the patient to take treatment without observation. This should only be done if the situation is discussed with the Treatment Supporter first and no other solution can be found. It should only be permitted for a few days or weeks.

An example would be the situation where a relative of the patient has died and he must travel to attend the funeral. This is a significant event that cannot be ignored or avoided. In such a case the patient should be advised to see the Treatment Supporter as soon as possible to discuss their treatment while away. Once the situation has been discussed the number of days away from home can be calculated and the tablets for that specific number of days given to the patient to take unsupervised. It should be clear to both the patient and the Treatment Supporter the exact time and day that the patient will return to the Treatment Supporter to continue with observed treatment. When the patient does return a discussion should take place to confirm that the tablets were taken correctly and the Treatment Support card completed correctly (see below).

TASK 4: RECORDING DAILY INTAKE OF DRUGS ON THE TREATMENT SUPPORT CARD

The TB programme has a Treatment Supporter record card that will be used to record the intake of treatment in the community. This card is an extra one to the standard WHO TB programme cards and is designed specifically for community-based care. When a patient is diagnosed as having TB, the treatment support-patient identity card should be filled in by the health care provider at the same time the treatment card is filled in. The card should be kept by the treatment supporter. The card, which is pocket size and folded, has front, back and inside parts.

The front of the card is used to record the details of the patient and the treatment centre supervising the treatment. The back of the card gives information on the drugs. The inside of the folded card is for the treatment supporter to record when the patient has taken his/her treatment under direct supervision (see below). The card is shown below:

Fig 9
TREATMENT SUPPORT CARD

Back of folded card

Drugs

HRZE	S	HRZ	HR	E
Initial Phase			**Continuation Phase**	

How to indicate drug intake

V	Drugs taken under direct observation
—	Drugs self-administered
0	Drugs not taken

Front of folded card

GHANA NATIONAL TB CONTROL PROGRAMME
PATIENT ID/TREATMENT SUPPORT CARD

Patient Name:_____

Address_____

Age: ____Sex: __ District TB No._____

Unit TB No. ___ Date of Registration: ___/___/20___

Treatment Centre:_____

Treatment Supporter:_____

Treatment Category _____

Inside of folded card

DAY / MONTH	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	REMARKS	Doses this month	Total doses given	Appointment Dates

You will see that the bottom section of the card consists of a calendar type table containing the months in a column and the days for each month as a row. Every day, the Treatment Supporter will record in the correct square the details of the daily intake for that day. This is done by the use of symbols. Three symbols are used:

Supervised treatment

This symbol is written if the Treatment Supporter has actually seen the daily treatment being swallowed.

Unsupervised treatment

This symbol is used if the patient reports taking the treatment but the Treatment Supporter did not actually observe the taking

Missed treatment

This symbol is used if the treatment has not been taken.

(As health care provider we will also be using these symbols when we fill in the TB01 forms at the treatment centre. We will study this in another chapter.)

The Treatment Support Card will be kept with the Treatment Supporter, who will keep record of the patient's daily intake of tablets. Every month the patient will collect the card on their way to the treatment or diagnostic centre for appointment. After each of these appointments, the patient must drop the card back at the Treatment Supporter's house. If a situation occurs where the Treatment Supporter is an illiterate family member, the CHO on his/her daily/ weekly visit will verify the intake of tablets (by interviewing the Supporter and/or patient and counting the pills) and update the record on Treatment Support Card.

TASK 5: ENCOURAGING ATTENDANCE AT FOLLOW-UP APPOINTMENTS

In order to encourage the patient to attend the follow-up appointment at the treatment centre (health centre), the Treatment Supporter need to understand the importance of the visits.

Every month the patient should attend the treatment centre for a review by the treatment centre health care provider. At this visit the response to treatment will be assessed and any problems or difficulties addressed. The Treatment Supporter should be aware of the date of this review appointment and remind the patient to attend. He/she should also remind the patient to call by the house of the Treatment Supporter to collect the Treatment Support card. This card must be taken to the treatment centre so that the treatment centre health care provider can see how the daily treatment has been taken. Some Treatment Supporters actually support their patient by accompanying them to the treatment centre.

At certain months during the treatment, (for example at the end of intensive phase, month 5 and end of continuation phase) the patient will also need to attend the diagnostic centre for sputum test. Again the Treatment Supporter will be aware of this appointment and remind the patient that he/she should produce a sputum specimen on that day, and then proceed to the diagnostic centre. He/she should wait for the sputum test result, if possible. He/she would then report to the treatment centre to be reviewed by the health care provider. The Treatment Supporter should also remind the patient to come to his/her home the next day to report back from the diagnostic/treatment centre and, if necessary to continue observed treatment.

To remind both the patient and Treatment supporter of the appointment dates, the inside of the folded Treatment Support/Patient ID card has a column along side the treatment calendar to record the dates of the appointments. The health care provider should fill the next appointment on the appropriate line in this column.

TASK 6: INDENTIFYING POSSIBLE SIDE-EFFECTS AND REFERRING

The treatment supporter should enquire about the patient. This allows one to detect any new symptoms or problems. Most of the symptoms of TB will have been present at the time of diagnosis and start of treatment. The role of the Treatment Supporter is to identify any possible new symptoms (such as side-effects to TB drugs) and refer these to the treatment centre. It is not the role of the Treatment Supporter to decide if a new symptom is serious or not – that is the role of the treatment centre health care provider.

KEY POINT

The treatment supporter must send any patient who complains of major side effects to the treatment centre immediately.

TASK 7: HELPING THE PATIENT TO OVERCOME DIFFICULTIES

The success of treatment support is based on mutual trust and confidence between the patient and the Treatment Supporter. The patient may face a wide range of social, cultural, economic and medical problems that could potentially make him/her stop the treatment. The Treatment Supporter must be vigilant and sensitive to the patient's concerns and or problems. Unless these concerns and problems are properly addressed at the right time, the continued treatment of the patient may be difficult.

TASK 8: IDENTIFY PATIENTS WHO FAIL TO TAKE TREATMENT AND HELP TO TRACE AND BRING THEM BACK

Despite the best efforts of a well-organised, community-based TB programme we have to acknowledge that occasionally there will be some who fail to take the treatment.

KEY POINT

We can detect a patient who has failed to take treatment as they either:

- Fail to come for their daily treatment

Or

- Fail to attend for the review at the diagnostic or treatment centre.

The Treatment Supporter has a key role in the early identification of defaulting patients. The Treatment Supporter is the first person to know that the patient has failed to come for treatment. He/she will take specific action if this situation arises. This is clearly stated in the desk-aide and on the reverse of the Treatment Support card. It is so important that it will be reproduced once again.

- **Explain what to do if:**

  - **The patient misses 2 days of treatment:**

- The Treatment Supporter must visit the patient and try to sort out any problem - if they cannot, they must report to the CHO, Treatment centre Health care provider or ITC as soon as possible

  - **The patient does not agree to continue treatment:**

- The Treatment Supporter must report to the CHO, Treatment Centre Health care provider or ITC as soon as possible

  - **The patient has problems with any drugs or new symptoms:**

- The Treatment Supporter will tell him/her to go to the clinic straight away

  - **The patient has to go away for a few days:**

- The Treatment Supporter should remind the patient of the importance of taking medication. If the absence cannot be avoided, the Treatment Supporter should give the tablets for the correct number of days and on the patient's return, record the treatment as taken but not observed.

If a patient misses a few doses they must be made to complete all the missed doses before proceeding to the continuation phase of treatment.

TASK 9: SUPERVISE AND RE-SUPPLY THE TREATMENT SUPPORTER WITH DRUGS

It is important to meet the treatment supporter when he or she comes to the treatment centre to collect the patient's drugs for another month. In some cases, treatment centre staff may go to visit and supervise the treatment supporter and provide next month's drugs. During these supervision meetings, ensure the following are done:

- Check the Treatment Support Card and make entries onto TB Treatment Card: Check if the patient is taking the drugs on schedule and the supporter is filling the card correctly. Copy all the information from the Treatment Support Card onto the original TB Treatment Card kept at the treatment centre. Also check whether the treatment supporter noted any comments, if so, copy them in the TB Treatment Card and discuss this with the treatment supporter.

- Identify problems and discuss them with the treatment supporter: Ask the treatment supporter if there were problems in the last month. Problems could include drug side-effects, missed days, or other problems such as reluctance to take drugs. Discuss the actions that could perhaps help to solve the problem.

- Review important points about TB and treatment supporter's tasks: Ask the treatment supporter about the basic important information about TB and about administering treatment, and if there were any questions that the treatment supporter could not answer to the patient. Review and provide key information, as needed.

- Re-supply drugs to the treatment supporter: Read the card to see the drugs needed in the next month. Take the drugs from the patient's drug box kept at the health centre. Record on the original TB Treatment Card the drugs provided to the treatment supporter.

- Thank and give support to the treatment supporter: When you meet the treatment supporter, assure him/her that his/her efforts have an important impact on the treatment of TB patients. Tell the treatment supporter that you realise he/she is giving considerable time and effort and you appreciate it. Encourage him/her and provide necessary support.

- Take action if a treatment supporter fails to collect the next month's drugs: If a treatment supporter does not come to the health centre to collect the next month's drugs, promptly make a home visit to the treatment supporter and to the patient if necessary, to find out the problem. Be sure that the patient receives the treatment as soon as possible, so that no more days are missed.

(Adapted from: WHO Stop TB (2002) Management of Tuberculosis: Training for health centre staff. Identify and supervise treatment supporters)

KEY POINT

- The treatment supporter may be seen at the same time as the patient comes for review (see chapter 11)
- If this is the case remember that there are separate objectives:

1. To review the patient (see chapter 11)
2. To support and supervise the treatment supporter

PRACTICE EXERCISES

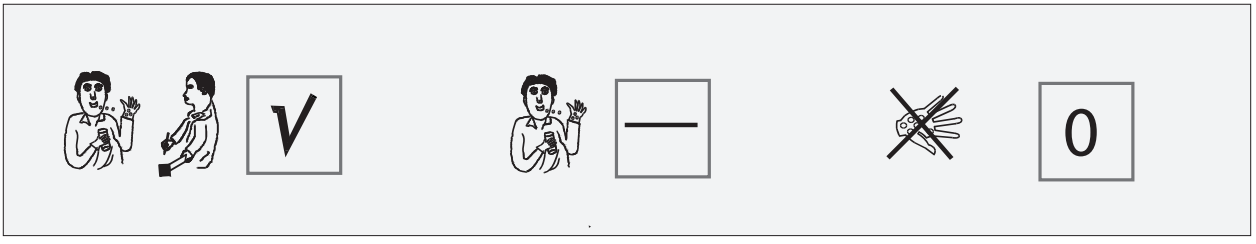
INTRODUCTION TO PRACTICE EXERCISES

Preparing a Treatment Supporter is a very important task in the TB programme and we will now spend some time practising the skills involved in this by means of practice exercises. Then we will look at a situation in which a patient is helped to address his/her problems.

Remember:

- An introductory paragraph will set the scene. After reading this paragraph the members of each pair will decide who is going to play the role of the TB Co-ordinator and who will play the Treatment Supporter. It is important that during the course each person has the chance to try each role to ensure each person takes a different role from the ones taken earlier.
- Next, each participant will turn to the relevant page and prepare him or herself before starting the practice exercise.
- Each practice should last approximately 5 minutes.
- After the practice the person playing the patient will give structured feed- back about the consultation to the person playing the role of the health worker.
- For the practice to be as effective as possible it is important for it to be as realistic as possible. If you are playing the role of the patient really try to behave and talk as if you have his/her character and worries.

Refer to page 65 of workbook.



KEY POINTS

Most people who agree to be a Treatment Supporter will have some concerns. It is important that the health care provider finds out about these concerns and discusses them at the beginning of the treatment.

All treatment supporters need to be "prepared" for the role when taking on a new patient, even if they have previously had some training.

It is important that the Treatment Supporter agrees to take responsibility for each individual patient.

Drugs should be handed over to the Treatment Supporter and not to the patient.

The Treatment Support card is important as it serves as a record of treatment taken and as a detailed description of how to do DOT properly.

The Treatment Supporter has an important role to play in the early detection of defaulters, patients who refuse treatment and people who are having problems with their treatment.

During this session we have been studying how

To prepare the Treatment Supporter.

If, as a result of completing this session, you are able to carry out this activity you will have achieved your learning objective.

If you still feel unsure about certain aspects of what we have learnt then do not worry. As mentioned before we may need to practise some aspects further, after the course has finished.

Make a note of the aspects that you feel you would benefit from more practice so that you will be able to focus on these at a later date.

The areas in which I need more study and practice are:

REVIEWING THE PATIENT AT THE TREATMENT CENTRE

INTRODUCTION

Once a person is established on community-based TB care, the patient will continue collecting his/her drugs from the treatment supporter till treatment is completed. The Health care provider at the Treatment Centre will assess the patient at the end of every month.

As a Health care provider working at the Treatment Centre we need the knowledge and skills necessary to review TB patients and we are going to learn these in this chapter.

LEARNING OBJECTIVE

At the end of this chapter the participants should be able to:

- Assess the TB patient monthly at the Treatment Centre.

There are several steps to this:

1. Welcome the patient and enquire about his/her health and any problems
2. Explain that you will assess the physical aspects of their treatment and then assess the organisational aspects of their care
3. Review the process of community-based TB care
4. Review the physical status of the patient and manage appropriately
5. Re-educate the patient as necessary
6. Identify those patients who need referral to the Diagnostic Centre early and arrange this
7. Identify those patients who are due to be seen routinely in one month and arrange this
8. Arrange for TB tablets for this patient to be supplied to the Treatment Supporter and give a date for the next review
9. Transfer the information from the Treatment Support Card onto the TB Treatment Card (TB01).

The desk aide outlines the important points for this process. This is reproduced below.

FOLLOW-UP OF TB PATIENT AT TREATMENT CENTRE

This is done by the Treatment Centre Health Worker

The patient will be reviewed at the Treatment Centre every month except when he/she attends the Diagnostic Centre at months 2 (3), 5 and 6 (8). Ideally the Treatment Supporter should attend as well.

The patient should take the treatment support card with him/her.

Remember to demonstrate that you care and respect the patient. Speak clearly and encourage the patient.

Ask:

- Do you have any problems with your TB treatment?
- Are you taking your tablets daily? Look at the Treatment Support card and congratulate client for treatments taken. Discuss any missed or unobserved treatments. If the Treatment Supporter is a relative check that they have seen the CHO weekly.
- Do you have any symptoms/complaints? Discuss any symptoms and examine as necessary. Remember symptoms may be due to TB illness that will improve as treatment continues. Encourage the patient to continue treatment. Symptoms could also be side-effects or due to co-existing illness such as HIV infection. Check the tables below for symptoms and the appropriate management.

Manage side-effects of drugs according to the following guidelines:

If patient has a side-effect:	Then Manage as follows:
Minor Side-Effects Anorexia, nausea, abdominal pain	Continue anti-TB drugs and advise to take drugs last thing at night
Joint pains	Aspirin
Burning sensation in the feet	Pyridoxine 100 mg daily
Itching of skin	Anti histamine, If no response refer
Major Side-Effects: Skin rash Deafness (confirm this is not due to ear wax) Dizziness (vertigo & nystagmus) Jaundice (yellow skin or eyes) Difficulty with vision (other causes excluded) Vomiting repeatedly* Shock, purpura, acute renal failure**	Stop anti-TB drugs immediately. Refer to Medical Officer

*Vomiting repeatedly is a concern because the drugs are not being absorbed. Vomiting with confusion is very serious because it is a sign of liver failure. Refer a vomiting patient to a physician.
**If orange/ red urine then reassure the patient that this is normal for the drug

Manage other symptoms as appropriate (Remember to consider co-existing HIV infection):

Symptom	Manage as follows
Weight loss. Consider: • Poor compliance • Difficulty eating • Recurrent diarrhoea	• Repeat education on TB and DOT • Check mouth for candida (white patches on a red background which do not scrape away with the examining spatula) – give anti fungal suspension or Oral gel. Add tablets if severe e.g. nystatin • See below
Frequent recurrent diarrhoea	• Advise about ORS, clean water and sanitation, maintaining food intake. • Offer HIV testing and counselling and refer to physician if positive.

Transfer details of compliance from Treatment Support Card onto TB Treatment Card. Record problems and solutions in space provided on TB Treatment Card. Record date and place of next visit on Treatment Support Card. If next visit is to Diagnostic Centre, give sputum container and instruct patient.

TASK 1: WELCOMING AND ENQUIRING ABOUT THE PATIENT

Earlier on in the course we studied the importance of communication skills in making sure that both the patient and the Health Worker get the most out of every consultation. These same principles apply here. Greeting the patient politely and with the right attitude is important to maintaining the trust that is developing between the patient and the health services.

Start the review appointment by enquiring about the patient's health and specific problems. If a patient has a specific problem or worry, it is better to give him/her the opportunity to express this at the beginning of the interview.

In some cases the treatment supporter may accompany the patient to the Treatment Centre. This is to be commended but it is also important that the patient has an opportunity to see the Treatment Centre Health Worker alone. This is to provide confidentiality on matters to be discussed, and any concerns the patient may have about the Treatment Supporter.

Tell the patient that you will be reviewing both the organisation of his/her TB treatment in the community and his/her physical condition – that is whether he/she is feeling better or worse or has new symptoms. If the patient has mentioned a specific problem then it is important to let the patient know that you have taken note of the problem and will be dealing with it

Ask the patient if there are any problems relating to receiving their daily treatment from the Treatment Supporter. If any problems are mentioned explore these in more detail before proceeding to look at the record of daily intake of tablets on the Treatment Support Card.

It is important that the regularity of drug intake is considered on each monthly visit to the Treatment Centre. The following three methods are used to ascertain the regularity of drug intake:

- Review of the Treatment Support Card
- Interview of the patient
- Count the empty blisters

As discussed earlier the Treatment Supporter is responsible for recording the daily intake of drugs, taken by patients under his/her supervision, on the Treatment Support Card. The patient must bring this card whenever he/she attends the Treatment Centre for review. If the patient forgets the card this aspect of his care cannot be reviewed and, although he will be interviewed about tablet intake, he will also be asked to return with the card the next day.

Reviewing the treatment support card to ascertain the regularity of drug intake consists of three main tasks:

- Assessing the quality of the recorded data (on daily intake of drugs) by identifying missing, unclear and incorrect entries and discussing them with the Treatment Supporter (either at the same time if present, or at the next supervision meeting).
- Reviewing the recorded data on drug intake to identify the days when drug intake was supervised, unsupervised or missed.
- Discussing the days when drug intake was missed or unsupervised with the patient and Treatment Supporter (either at the same time if present, or at the next supervision meeting) and identifying and agreeing on appropriate measures to minimise the chances of missed drug intake in the future.

During the continuation phase, the patient will visit the Treatment Supporter daily. Where this is not possible, then the patient visits once a week to collect the drugs for the whole week. If the patient misses one of his weekly visits, he/she will be identified as at risk of defaulting from treatment.

Counting the empty blisters and comparing with the number of days since the **drugs** were last collected is a useful way of ascertaining the regularity of drug intake. Discrepancy between these two counts indicates irregularity of drug intake.

KEY POINTS

A patient who has missed more than 14 doses may need to change their TB regimen and must be referred urgently to the Diagnostic Centre for assessment which will include sputum examination.

A patient who has missed less than 14 doses can continue the treatment but needs careful assessment to ensure further doses are not missed.

DEMONSTRATION EXERCISE

The following exercise demonstrates how the Treatment Support Card is used to determine daily intake of tablets.

It is best if you do the exercises individually. In that way you will be able to discover your strengths and weaknesses when it comes to interpreting the information on the treatment support card. Refer to workbook.

TASK 4: REVIEWING AND MANAGING THE PHYSICAL ASPECTS OF PATIENT CARE

Ask the patient if there are any problems with their state of health and physical well being. Use open questions to start with, such as "how are you feeling today?" and "do you feel any different now that you have been taking your TB treatment?" When asking about symptoms we are assessing 3 things:

- Are the symptoms of TB improving?
- Are there any new symptoms that could be due to side-effects of the drugs?
- Are there any symptoms that are due to co-existing medical problems?

Are the symptoms of TB improving?

For example are the systemic symptoms of sweats, fever and weight loss improving? Remember that some symptoms may not improve if these were due to destruction of tissue by the TB before treatment started. For example – shortness of breath due to TB secretions and sputum should improve but shortness of breath due to damage of lungs will not.

Are there any new symptoms that could be due to side-effects of the drugs?

Screening for side effects of anti-tuberculosis drugs is an essential part of follow-up at the Treatment and the Diagnostic Centres. Treatment Supporters are trained to refer any patient with new symptoms to the Treatment Centre early. There are two main types of side effects to anti-tuberculosis drugs, major and minor side effects.

Minor Side Effects: Minor side effects cause relatively little discomfort. They often respond to symptomatic or simple treatment but occasionally persist for the duration of the drug treatment. In this case, anti-tuberculosis treatment should be continued and symptomatic treatment added. TB drugs can cause the following minor side effects:

MINOR SIDE-EFFECTS	LIKELY CAUSATIVE DRUGS
Anorexia, nausea, abdominal pain	Rifampicin
Joint pain	Pyrazinamide
Reddish change in urine colour	Rifampicin
Burning sensation in feet	Isoniazid
Itching of skin	Isoniazid, Rifampicin, Pyrazinamide, Thiacetazone

Major Side Effects: Are those that give rise to serious health hazards. In this case, discontinuation of anti-tuberculosis drugs is mandatory and the patient should be referred to the nearest health centre or hospital immediately. TB drugs can cause the following major-side effects:

MAJOR SIDE-EFFECTS	LIKELY CAUSATIVE DRUGS
Severe Skin rash, Itching of skin	Streptomycin
Deafness (confirm this is not due to ear wax)	Streptomycin
Dizziness	Streptomycin
Jaundice (yellow skin or eyes)	Isoniazid, Rifampicin, Pyrazinamide
Visual Impairment	Ethambutol
Shock	Rifampicin
Purpura	Rifampicin
Vomiting repeatedly*	Rifampicin, Isoniazid, Pyrazinamide

Vomiting repeatedly is a problem because the drugs are not being absorbed. Vomiting with confusion is very serious because it is sign of liver failure. Refer to a physician.

The side effects reported by the patient and the date are recorded in the TB TREATMENT CARD.

Are there any symptoms that are due to co-existing medical problems?

A TB patient may also have other, co-existing medical problems and this should also be reviewed and managed appropriately when the patient is seen. This may be a chronic condition such as asthma or diabetes, or an acute problem such as diarrhoea.

As discussed in chapters 3 and 8, in areas where HIV infection is common, we must remember that many TB patients may also be HIV positive, even if they are unaware of their HIV status. In such situations, the Treatment Centre Health care provider should consider the possibility of underlying HIV disease and should discuss this with the patient.

This is important for all potentially HIV positive patients, but especially in areas where specific interventions for HIV positive people are available. Interventions may include the use of prophylactic treatment with co-trimoxazole, the use of drugs at the end of pregnancy to try to reduce the chances of passing HIV to their new born child, or the use of anti-retroviral drugs to try to treat the actual HIV virus.

WRITTEN EXERCISES

INTRODUCTION TO WRITTEN EXERCISES

The following exercises have been written/ given to enable us to practise the management of patients presenting themselves with possible side effects to TB treatment. It is best if you do the exercises individually. In that way you will be able to discover your strengths and weaknesses when it comes to managing the side effects of TB drugs.

On completion of the first month of treatment, the following TB patients visited their respective Treatment Centres and reported to the staff the following complaints:

Refer to page 74 of workbook.

TASK 5: RE–EDUCATING THE PATIENT AS NECESSARY

When first diagnosed with an illness it is usually difficult to remember everything that one was told. This is because there is a lot of new information but also because the patient may be ill when first seen and so unable to concentrate for very long.

Depending on the type of problems identified we will have to emphasise different educational messages for different patients. The emphasis could be on:

- The importance of TB and it's treatment
- The details of community-based care and DOT
- What a patient should do if he/she has a problem
- The association between HIV and TB and education about how to prevent transmission of HIV, and the benefits of an HIV test.

The following table gives some possible ways of finding out issues that need to be addressed.
Also refer to chapters 8 and 9.

	Skills, Tasks, Questions	Related Messages
At every visit	Review the patient's knowledge of TB. - What can you remember about your illness? - Do you have any questions?	Since patients cannot recall all that is said at a first meeting there is the need to go over earlier messages.
As needed	Ask questions related to convenience of treatment and, if needed, possible alternatives. Examples of questions: - How far away is your home? - How long did it take you to come here today? - Where do you work? What are your working hours? - Are there difficulties that may keep you from coming for treatment? If so, what? - Where do people usually go for health care in your village? - Where do you work or go each day?	If needed, discuss alternative times or places for directly observed treatment. If needed, discuss possibilities for treatment supporters.

TASK 6: IDENTIFYING AND ARRANGING EARLY REFERRAL TO THE HOSPITAL OR HEALTH CENTRE IF REQUIRED.

Two types of patients need early referral to the Hospital or Health centre. These are those with:

- Interruption of treatment – those who have missed a significant number of doses,
- Major physical problems – such as major side-effects or severely ill due to any other health problems.

If a patient is identified with one of these problems it must be explained that this is a serious matter and that he/she needs to be reviewed at the Diagnostic Centre the same day. A patient who is having a major side-effect to a TB drug may deteriorate overnight. A patient who has missed a critical number of doses may abscond completely if he is sent home and directed to go the Diagnostic Centre the next day.

KEY POINT

If you are sending a patient to the Diagnostic Centre for early assessment due to a problem remember to inform the Treatment Supporter.

Otherwise the Treatment Supporter will be expecting the patient for the daily treatment, and be worried when he doesn't arrive.

TASK 7: IDENTIFYING AND MAKING ARRANGEMENTS FOR PATIENTS DUE TO BE SEEN ROUTINELY IN ONE MONTH

Most patients will not require urgent referral to the Hospital or Health Centre and hence will be reviewed monthly. Depending on how far they are in their TB treatment the next routine review will either be at the Treatment Centre or the Diagnostic Centre. When reviewing patients at the Treatment Centre it is important that we remind each patient about his next review appointment.

We must remind every patient:

- The date, time and place of the appointment
- To collect their Treatment Support card from the Treatment Supporter

If the next appointment is at the Diagnostic Centre:
We must also remind them:

- The Diagnostic Centre will need a morning sputum specimen for analysis
- How to produce a good sputum sample safely
- How to transport the sputum sample safely
- To take a sputum container when they go home
- To call at the Treatment Centre, on the way to the Diagnostic Centre, to collect a completed TB05 – sputum request form
- To report at the Treatment Centre with the results

TASK 8: ARRANGE FOR TB DRUGS TO BE SUPPLIED TO THE TREATMENT SUPPORTER.

The Treatment Centre nurses will issue the drugs for community-based treatment on a monthly basis (except for patients whose treatment are observed by the actual Treatment Centre staff).
During the intensive phase, the drugs will be issued to the Treatment Supporters directly. This will either be done at the regular supervision meeting or at the time of the patient's monthly review if the Treatment Supporter also attends. When the drugs are issued in this way a note is made in the margin of the TB Treatment Card, next to the relevant month.

During the continuation phase, the treatment supporter collects drugs monthly from the Treatment Centres. During this phase, the patient will visit the Treatment Supporter daily but where this is not possible once a week and collects the drugs for the whole week. Hence he/she will have observed intake on the day of collection and unobserved intake for the next 6 days. Interviewing is also important during the continuation phase in order to confirm that the unsupervised treatments have been taken correctly.

TASK 9: ENSURING THAT THE TB TREATMENT CARDIS CORRECTLY COMPLETED

TB Treatment Card

At the end of the review appointment it is important for the Treatment Centre nurse to check that the patient's TB treatment card at the Treatment Centre has been correctly completed. Check that:

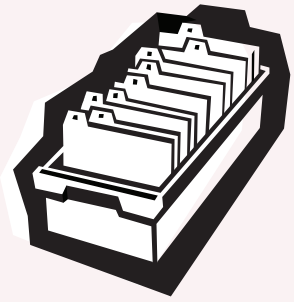
1. The details of the daily tablet intake have been transferred correctly from the Treatment Support Card to the TB treatment card.
2. Any problems and actions taken have been recorded in the "remarks" space.
3. A note has been made about the number of doses of treatment that has been issued to the Treatment Supporter.
4. The TB treatment card has been correctly filed in the Treatment Centre TB record box. This is a strong box, separated into 12 sections. Each section is labelled with a different month of the year. When a TB patient has been reviewed his TB treatment card is filed in the section that corresponds to the month when his next appointment is due. In this way patients who have failed to attend for review will be detected since their TB treatment card will still be in that section after that month has passed. At the end of every month, the Treatment Centre health care provider checks the TB record card box to detect any patient who has failed to come for his/her appointment.

TB treatment card box

KEY POINTS

When following-up patients at theTreatment Centre it is important to assess and manage any problems relating to:

- The regularity of drug intake
- Side-effects of treatment
- Symptoms of co-existing problems



Remind the patient of the date and place of the next review appointment and give special instructions (and the sputum container and TB05) if this is at the Diagnostic Centre.

Complete the TB01.

During this session we have been studying how to review the TB patient monthly at the Treatment Centre

If, as a result of completing this session, you are able to carry out this activity you would have achieved your learning objective.

If you still feel unsure about certain aspects of what we have learnt then do not worry. As mentioned before we may need to practise some aspects further, after the course has finished.

Make a note of the aspects that you feel you would benefit from more practice so that you will be able to focus on these at a later date.

The areas in which I need more study and practice are:

-
-
-

CHAPTER TWELVE

REVIEWING THE PATIENT AT MONTH 2 (3), 5 & 6 (8)

INTRODUCTION

After the initial diagnosis and decision about which treatment regime to be used, the patient will continue community-based TB care at home. He/She will take treatment daily with the help of his/her treatment supporter and report to the community health officer (where applicable) every week. Then every month the patient will attend the diagnostic/ treatment centre for review by the health workers there.

Unless clinical problems are encountered this community-based care takes place without the specific input of the diagnostic centre workers. There are 3 important and mandatory routine, planned appointments at the diagnostic/ treatment centre – at the end of the intensive phase, at the end of month 5 and at the end of the continuation phase.

LEARNING OBJECTIVES

At the end of this chapter participants should be able to:

- Review patient towards the end of the intensive phase, at the end of month 5 and at the end of the continuation phase.

Every registered TB patient must visit the diagnostic centre at the end of the intensive phase, at the end of month 5 and at the end of the continuation phase. During these follow-up visits sputum smears are examined and the patients are assessed clinically. At the end of the intensive phase a decision is made about whether the patient needs another sputum smear at month 3, because month 2 smear is positive. All patients will go to continuation phase at the end of month 2 regardless of outcome of sputum results at month 2. At the end of the continuation phase the decision is made about whether the patient has been successfully treated or not.
Each review appointment will follow a similar sequence of tasks:

1. Welcome the patient
2. Review the TB treatment card -TB01
3. Interpret the sputum results and monitor progress of treatment
4. Inform the patient about the sputum result and what it means
5. Arrange the correct treatment
6. Complete the relevant part of the TB treatment card -TB01
7. Give the patient the patient ID and Treatment support Cards

As usual we will study each of these in turn.

TASK 1: WELCOME THE PATIENT

Every time we start a new consultation with a patient we need to ensure that our attitude, behaviour and communication skills are appropriate for that patient. By doing this, we will ensure that the consultation is a successful one, in which the clinician and the patient are both satisfied.

Below is a page from the desk aide to remind us of the important issues to consider in this meeting.

FOLLOWING-UP TB PATIENT AT DIAGNOSTIC CENTRE

This is done by the diagnostic centre health workers / TB co-ordinator for those months when sputum smear and treatment review are required i.e. months 2(3), 5& 6 (8)

For review at the diagnostic centre:

- The patient will bring an early-morning sputum with them from home.
- The patient will have health education whilst the sample is being analysed
- The patient will then see the diagnostic centre clinician with the results.

The diagnostic centre clinician will:

- Use the guidelines for review at the treatment centre and examine the patient (including weight). Consider:
  - √ Compliance
  - √ Problems with DOT
  - √ Side-effects and other symptoms
- Look at the sputum results and decide on management.

TASK 2: REVIEW THE TB TREATMENT CARD (TB01)

Information from the patient's treatment support card is transferred to the TB treatment card (TB01) at the treatment centre at every monthly visit. The patient's TB01 card therefore carries information about his/her compliance during their treatment as well as details about how many doses have been observed by their treatment supporter.

Interpreting the TB treatment card at the end of the intensive phase

All health workers working at the diagnostic and treatment centres must be able to interpret the TB treatment cards. We will review this process by looking at a demonstration exercise in which the TB treatment card is reviewed at the end of the intensive phase.

DEMONSTRATION EXERCISE

Refer to page 77 of workbook

Interpreting the TB treatment card at the end of the continuation phase

During the continuation phase the patient will visit the treatment supporter daily but where this is not possible once a week and collect the drugs for the whole week. That is, they attend the treatment supporter once a week. At this visit they are observed taking the dose for that day and receive the tablets for the next 6 day's doses. These doses will be taken at home without observation. This system enables continuing support and encouragement by the treatment supporter whilst at the same time recognising that daily attendance for the whole of the 6 (8) months of treatment can be a burden to the patient. The decision about this planned daily, unsupervised treatment with weekly supervision will depend on your local situation and on the opinion and suitability of the individual person with TB.

Note that up to 14 days can be missed during the continuation phase before changes to the treatment regime need to be made. However, action by the treatment supporter, treatment centre health worker and TB co-ordinator to contact a defaulting patient must begin before this situation occurs. If more than 14 doses are missed then the treatment regimen may need to be changed.

Enter √ on day of supervised drug administration. Whenever drugs are collected for self-supervised administration, draw a horizontal line (-----) to indicate number of days supply given."
A horizontal dash is drawn at the next weekly supervision, when the patient reports having taken all their doses of TB treatment for that week. If, for any reason the patient reports that he hasn't taken a dose, a 0 is recorded

KEY POINT

The treatment supporter will observe continuation phase treatment daily but where this is not possible, once a week. Then the patient will be given enough tablets for the next 6 days. On the 7th day the patient will return to the treatment supporter who will correctly fill in the treatment support card. When the patient reports to the treatment centre the health worker will transfer this information to the TB01 card.

DEMONSTRATION EXERCISE
Refer to page 77 of workbook

TASK 3: INTERPRET THE SPUTUM RESULTS AND MONITOR PROGRESS OF TREATMENT

Assuming sufficient doses of TB drugs have been taken, treatment decisions made at these appointments are based mainly on periodic follow-up sputum examinations, supplemented by clinical assessment (especially for sputum smear negative patients). These sputum examinations are important to determine the patient's progress and to make decisions about care. Sputum conversion from positive to negative is the best indicator that the initial phase of treatment was taken regularly and was effective. For patients with smear-negative pulmonary TB and extra-pulmonary TB, monitoring progress of treatment is done by a physician's assessment of clinical status. Sputum examination, however, should be repeated at month 2 for new smear negative patients. Weight of patient is taken as an indirect indicator of the patient's health. Gradual gain of weight is considered to be an indication of the patient improving with treatment.

Sputum smear examination is the key follow-up examination, and treatment decisions are based on its results. At least one sputum sample, preferably a morning sample should be examined on each follow-up visit.

Sputum Smear Examination Schedule

The sputum smear examination schedule differs slightly according to the TB patient registration group and is shown in the following table.

All new TB cases found to be sputum smear-positive at the start of treatment should also have their sputum examined at the end of month 2, at the end of month 5 and at the end of treatment. The sputum examination at the end of the 5th month is to identify TB patients who are not responding to the prescribed drugs, either due to ineffective regimen and/or irregular intake of drugs.

For new pulmonary sputum smear negative patient, sputum is examined at end of month 2 only.
For previously treated sputum smear positive patient, sputum is examined at end of months 3, 5 and 8.
At all times whenever sputum is positive while on treatment, 2 early morning sputum samples should be sent for culture and DST.

Schedule for Drug Treatment and Follow-up Sputum Examinations (pulmonary cases only)

Patient Group	1	2	3	4	5	6	7	8
New smear-positive pulmonary	■ ■ ■	■ ■ ■ •	• ..... if SM+, culture and DST	.....	• ..... if SM+, culture and DST	• ..... • if SM+, culture and DST	.....	.....
New smear-negative pulmonary	■ ■ ■	• ■ ■ ■ if SM+, culture and DST	.....	.....	.....	.....	.....	.....
Previously treated smear-positive pulmonary	■ ■ ■	■ ■ ■	• ■ ■ ■ if SM+, culture and DST	.....	• ..... if SM+, culture and DST	.....	.....	• ..... if SM+, culture and DST
Child	■ ■ ■	• ■ ■ ■	• ..... if SM+, culture and DST	.....	.....	.....	.....	.....

SM+ smear positive

[■ ■ ■] Initial Phase of Treatment
[------] Continuation phase of treatment (Directly observed)
• Sputum smear examination

NB: All patients that were diagnosed based on GeneXpert will do final GeneXpert at the end of the treatment
If smear positve at month 2, obtain sputum again at month 3. If sm+ve at month 3 obtain culture and DST.
Modified from WHO Treatment of Tuberculosis Guidelines 4th ed. 2010.

Record Results of the sputum examinations

The laboratory Technician will record the results of sputum examinations on the bottom half of the Request for Sputum Examination (TB05) form and return to the Health facility. Record the results of the follow-up sputum examinations on the patient's TB Treatment Card. Write in the row of the month of treatment the sputum smear result, the Lab No. and date of the test. Record the result as "neg" or if positive, record the grading (scanty, 1+, 2+, 3+).

Sputum results at the end of the intensive phase

The examination of sputum smears at the completion of the intensive phase of treatment is the best indicator that the prescribed drugs have been taken regularly and that they are effective.
More than 80% of new pulmonary smear-positive cases should be smear negative after the initial 2 months of well supervised DOT.

In addition, 75% of re-treatment cases should also be sputum negative after 3 months of well-supervised DOT. It is for this reason that sputum smears are done at the end of month 2 for new sputum smear positive pulmonary TB patients and at the end of month 3 for previously treated pulmonary TB patients.

Sputum smear negative pulmonary cases must also have their sputum examined after 2 months of treatment in order to make sure that they have not become smear positive or that they were not falsely registered as sputum negative cases.

Interpretation of sputum results at the end of intensive phase:

Smear at end of month 2 for all new pulmonary TB patients, and end of month 3 for all previously treated patients

Sputum result at registration	Smear result at end of intensive phase	Management
Smear positive Smear negative	Negative	➢ Start continuation phase
Smear positive	Positive	➢ Start continuation phase ➢ Send 2 Early Morning sputum for culture and DST if smear is positive ***at month 2*** ➢ Review patient with DST results in one (1) month
Smear negative	Positive	Check with laboratory for clerical errors. If the patient was truly smear negative on registration but is smear positive at the end of intensive phase then: ➢ Declare treatment failure. Enter outcome on TB Treatment Card and on TB03 ➢ Re-register as re-treatment case and start retreatment regimen ➢ Review supervision procedures ➢ Send 2 EM sputum for DST ➢ Review patient and DST result in one (1) month

The correct interpretation of the sputum results at the end of the intensive phase is very important. The desk aide contains a simple table to follow and it is reproduced here.

Sputum results during and at the end of the continuation phase

Use the results of a follow-up sputum examination during the continuation phase (at 5 months) to determine whether the treatment is effective or if the patient is a treatment failure.

If the sputum is still positive at the end of the 5th month or later, this constitutes "Treatment Failure". In that case, close the patient's current TB Treatment Card and record the outcome as "Treatment Failure". Then, open a new TB Treatment Card for the patient, mark the "Type of Patient" as "Failure", and start a re-treatment regimen.

If the sputum is negative after 5 months, continue treatment with the remaining doses of the continuation phase drugs. Sputum smear examination at the end of the continuation phase is used to monitor the treatment and decide the outcome of the treatment.

If a patient was sputum positive on diagnosis, became sputum negative after the intensive phase and is still sputum negative at the end of the continuation phase, we can declare that this patient has been ''cured''.

However, we must recognise that many patients will be unable to produce sputum for examination at the end of the continuation phase. The clinical condition has improved so that they no longer produce any sputum at all. These patients cannot be officially declared as being cured as they do not have a negative sputum smear at the end of treatment. Instead they are declared as "treatment completed". We should as much as possible encourage patients to do their best to produce sputum; for example, using steam inhalation or drinking warm water/tea the patient should cough and any sputum produced should be sent to the laboratory.

If the patient is found to be sputum positive at the end of the continuation phase then the treatment has failed in this patient. In such cases repeat sputum microscopy, 2 samples should be taken to confirm that the sputum is positive (i.e. to exclude contamination) and also sent for culture and DST. Thereafter, the patient must be re-registered as a re-treatment case and start again at the beginning of the re-treatment regime.

Correct Interpretation of sputum results at the end of the continuation phase

The correct interpretation of the sputum results at the end of the continuation phase is very important as the treatment outcome depends upon it. Below is a simple table from the desk aide to follow.

Interpretation of sputum results at the end of the continuation phase:
i.e. at 6 months for all new patients; at 8 months for retreatment cases

Smear result at end of continuation phase	Category of patient	Management
Smear negative	All new cases and previously treated cases	➢ Declare patient cured. Enter outcome on TB Treatment Card and on TB03. Congratulate patient
	Children	➢ Declare patient treatment completed. Enter outcome on TB03. Congratulate patient
Smear Positive: (Must confirm result by repeat smears) 2 EM sputum specimens	New cases	➢ Declare patient treatment failure. Enter outcome on TB Treatment Card and on TB03. ➢ Re-register as a re-treatment case on TB03 and start retreatment. Regimen. ➢ Review supervision procedures ➢ Send 2 EM sputum for culture and DST
	Previously treated patients	➢ Declare treatment failure. Enter out-come on TB Treatment Card and on TB03. ➢ Send 2 EM sputum for culture and DST ➢ Stop all treatment. ➢ Refer to MDR TB specialist.

DECLARING TREATMENT OUTCOMES

The diagnostic/treatment centre clinician and/or TB co-ordinator do this.

- For most patients it is decided at the end of the treatment period. However, for a few patients it can be decided earlier (for example transfers out (lost to follow up) or deaths).
- The treatment outcome must be recorded on the TB01 and TB03 forms
- These outcomes are used to monitor the TB programme.

TB treatment outcomes

There are 6 treatment outcomes:

- **Cured:** Initially smear or culture positive patient who has completed the treatment and is sputum smear or culture negative in the last month of treatment and on at least one previous occasion.
- **Completed:** A patient registered as pulmonary sputum or culture positive, completed treatment, but had no sputum smear or culture at the end of treatment or one negative sputum smear at or after 5 months of treatment

  OR

  A patient registered as pulmonary smear negative or extra pulmonary and received a full course of treatment.

  OR

  A patient registered as "smear not done" (e.g. children) and received a full course of treatment
- **Treatment Failure:** Smear or culture positive patient who remained, or became smear positive again five months or later after commencing treatment,

  OR

  A sputum negative patient found sputum positive at end of 2nd month and at any point in the course of treatment if patient is found to have MDR-TB
- **Transferred Out:** A patient who is transferred to another district while still on treatment and whose treatment outcome is unknown. This is no longer an accepted outcome. Care providers should follow up on all clients to ensure they know the specific treatment outcome of the patients since they are responsible for the patient
- **Defaulted:** A patient who at any time after registration had not collected drugs for 8 or more consecutive weeks (2 months). These clients are now considered as **Lost to Follow up**. All efforts must be employed to prevent default during treatment. Any sign of non adherence or missed appointment should be thoroughly investigated and the client helped to get back to normal level of adherence.
- **Treatment Success**: A sum of cured and completed treatment in smear- or culture- positive patients only.
- **Died:** Patient who dies for any reason during the course of treatment (based on information gathered, verified and recorded by TB co-ordinator or health worker).

TASK 4: INFORM THE PATIENT ABOUT THE RESULT AND WHAT IT MEANS

At the end of intensive phase:

Consider the emotions that may be facing a patient as they await news of the sputum examination at the end of the intensive phase. After coming to terms with their diagnosis, and having to deal with any stigma in society, our patient has been taking a combination of many tablets every day.

REVIEWING THE PATIENT AT MONTH 2 (3), 5 & 6 (8)

He has gone daily to the treatment supporter and been to the treatment centre for review once. He may have had to tolerate unpleasant side-effects from the tablets. Hopefully he will now be much better.

As he waits for his sputum result, he may well be feeling nervous. Will the result be clear? Has the treatment worked properly? Was it worth all the time and effort? If the treatment hasn't worked what will happen – am I incurable?

Before breaking the news of the sputum result to our patient we need to remember the 3 stages of effective communication that we studied in chapter 3. We should be receptive to the emotions of the patient and respond appropriately then later reflect on whether the consultation went well, and how we could improve it next time.

It is important also to explore the patient's fears – especially if their sputum result is positive. Such a patient may well feel despair and abandon the treatment that hasn't worked. We will need to convince them that continuing the intensive phase is the best treatment and reassure them that in most cases this will cure their TB.

At the end of the continuation phase:
The consultation with the health worker at the end of the continuation phase is very important for the patient. As a result of this meeting the patient will either leave with the knowledge that he has finished treatment and there is no evidence of remaining TB OR he will have been told that the treatment hasn't worked. Although this second situation is much less common it does sometimes occur.

As health workers we need to be careful how we break such bad news to the patient. Treatment failure has major implications for the patient. He will need to be re-registered and commence the re-treatment regime from the beginning. This doesn't just mean repeating the treatment as before but taking a longer and more complicated regime.

TB treatment failure can be associated with increased levels of social stigma and isolation in some communities. For example, it may be perceived as being an indicator of being a threat to society or to being HIV positive. A patient in this situation will have to deal with many emotions - sadness, anger, frustration, despair and disbelief that the new regime can actually work. As health workers we must be sensitive to these emotions in order to guide the patient through and to ensure that they do indeed continue further TB care.

TASK 5: ARRANGE THE CORRECT TREATMENT

At the end of the intensive phase:

The correct management of a patient at the end of the intensive phase is to change to the continuation phase of treatment after accounting for any missed doses.

We are now at the stage of prescribing the next course of treatment for our patients
The exact drugs and doses to prescribe are in the tables of treatment regimens in the desk aide. The tables help us health workers, to prescribe the standardised drug regimens, in accordance with national guidelines, during the continuation phase of treatment.

If it is suitable to change to the continuation phase. For example:

New cases and children will change to a 2-drug continuation phase consisting of Isoniazid and rifampicin, Previously treated patients will change to a 3 drug regime of isoniazid, rifampicin and ethambutol or otherwise indicated by the DST results.

Note that the streptomycin used in the intensive phase of retreatment regimen is generally stopped at the completion of first two months of treatment. This is because of increased risk of hearing loss (manifested as ringing in ears, giddiness) with prolonged use of streptomycin. The third month of the re-treatment intensive phase continues with the remaining 4 drugs.

The dosage of each drug prescribed during the continuation phase remains the same as initially prescribed on the basis of pre-treatment weight of the patient.

Once a patient has changed from the intensive phase to the continuation phase of treatment the exact arrangements for community-based supervision may alter. New TB patients will still need frequent support and monitoring, but not necessarily need daily observation of treatment. However, in the case of previously treated patients on retreatment regimen it is recommended that their treatment should be daily observed during the continuation phase because of high risk of developing rifampicin resistance.

KEY POINT

Although the daily observation of treatment may not be necessary for some patients on the continuation phase of treatment it is very important to ensure that frequent (for example weekly) support and monitoring are done.

At the end of the continuation phase:

The correct management for our patient will depend upon the declared treatment outcome. Patients who have been declared as "cured" or "treatment completed" have no further specific TB care. However, we must remember to take this opportunity to review ongoing medical problems and ensure that the correct review is arranged.

For example, a patient with another chronic medical condition, such as asthma, diabetes or HIV disease should have this condition discussed and be informed about when and where to report for ongoing care.
As mentioned earlier a patient who is declared as a treatment failure will need to be re-registered and arrangements made to start an intensive phase again. Retreatment should be started as soon as possible and not more than four weeks.

TASK 6: COMPLETE THE RELEVANT PART OF THE TB TREATMENT CARD

At the end of the intensive phase
The sputum results, decision about treatment and regimens, and doses to be used must now be recorded on the patient's TB treatment card. The details of the continuation phase are to be found on the inside middle fold of the TB Treatment Card.

Let us do some written exercises to practise making the correct management decision and completing the TB treatment card at the end of the intensive phases. We will start by looking again at the case of Kofi Ntodi and using this as a demonstration.

WRITTEN EXERCISES

INTRODUCTION

These exercises are designed to allow us to practise the process of deciding the correct treatment outcome for our patients at the end of the continuation phase.

At the end of the continuation phase:

At the end of the continuation phase a decision is made about the treatment outcome of the patient based on the number of doses taken and the results of sputum analysis.

We will now study the case of Kofi Ntodi as a demonstration exercise before doing some written exercises. Refer to workbook.

DEMONSTRATION EXERCISE
Refer to workbook

TASK 7: REFER THE PATIENT TO THE TB CO-ORDINATOR (ITC/DTC)

Once the decision is made about the future management of the patient and this has been communicated with the patient we must ensure that the patient is sent to see the TB co-ordinator. It is important to give the patient clear direction about why, when and where he will see the TB co-ordinator or CHO

There are 3 main reasons for the patient seeing the TB co-ordinator or community-Health officer at the end of the intensive phase:

1. To update the details of this patient on the TB register
2. Confirm that the patient understands the decision and treatment plan that has been made.
3. Confirm the arrangement for the supervision of the next course of treatment and when the next review at the treatment or diagnostic centre is due.

There are 2 main reasons for the patient seeing the TB co-ordinator or community health officer at the end of the continuation phase:

1. To update the details of this patient on the TB register, that is to enter the treatment outcome
2. To ensure that any other ongoing problems have been addressed and arrangements for follow-up made.

For example in areas where HIV infection is common many TB patients will also be HIV positive. The patient may have had a test during the period of TB treatment, or may have discussed the possibility of HIV and decided not to have a test yet. In both cases the possibility of ongoing HIV disease should be reviewed. Just because a person has had a test does not mean that they may not be having symptoms. In all cases it is wise to offer another appointment at the treatment centre for one month's time and particularly arrange long-term follow-up for those who are HIV positive. HIV disease should be thought of as a chronic disease and ongoing care offered in the same way that care is offered for somebody who is diabetic. Even if you have no specific HIV drugs to give it is beneficial to the HIV positive person to have health education and support to help them stay healthy for as long as possible. By developing such an ongoing relationship with the patients the treatment centre workers will be more able to help when actual physical problems arise.

We will not study the details of how the TB co-ordinator or community Health officer updates the TB register. This will be studied in chapter 15. However, it is very important that all health workers realise the importance of the meeting between the patient and the TB co-ordinators /community-care officers and that they ensure that the patient does not get lost on the way to the TB office.

During this session we have been studying how to

Review the TB patient at the diagnostic centre at the end of the intensive phase, month five and at end of the continuation phase.

If, as a result of completing this session, you are able to carry out this activity you will have achieved your learning objective.

If you still feel unsure about certain aspects of what we have learnt then do not worry. As mentioned before we may need to practise some aspects further, after the course has finished.

Make a note of the aspects that you feel you would benefit from more practice so that you will be able to focus on these at a later date.

KEY POINTS

When following-up patients at the diagnostic centre it is important to consider:

- Have sufficient doses of TB drugs been taken? (Information from the TB treatment card)
- What are the results of sputum examination?
- What is the correct management for this patient?

At the end of the intensive phase the management options are conversion to the continuation phase or prolonging the intensive phase (only for re-treatment patients).

At the end of the continuation phase a treatment outcome must be declared. If the treatment has failed the patient must be re-registered and start the re-treatment regime.

IDENTIFYING AND MANAGING PATIENTS WHO INTERRUPT TREATMENT

INTRODUCTION

When health care providers first hear about community-based TB treatment they are sometimes worried that patients will default from treatment or take treatment irregularly. They worry about how such patients can be contacted and traced. These are indeed important issues that need to be carefully considered and action planned.

These are not new worries. It was previously recommended that TB treatment be given by keeping patients in hospital for the whole of the intensive phase. However, many patients absconded and defaulted from care. Even if the intensive phase was completed many more defaulted from the continuation phase of treatment. This wasn't surprising, as continuation phase treatment was unsupervised for the whole duration of treatment.

One of the strengths of community-based TB treatment is the "chain" of people who are concerned about the patient and helping him or her to complete treatment. Since this chain extends right down to the community level it is easier to detect people who are defaulting from treatment early – and to try to help them to continue. In this chapter we are going to study the mechanism of our TB programme to detect and manage patients who are interrupting treatment.

LEARNING OBJECTIVE

At the end of this chapter the participants should be able to

- Detect and correctly manage patients who interrupt treatment

As usual this is broken down into different tasks. We will study each of these in turn. These tasks are:

1. To review TB patients and determine those who are interrupting treatment and trace them successfully.
2. To manage patients who have interrupted treatment and have been traced.

TASK 1: IDENTIFYING TB PATIENTS WHO ARE INTERRUPTING TREATMENT AND TRACING THEM SUCCESSFULLY

We have read above how the community-based TB programme is like, having a "chain of care" linking the patient to the treatment centre. The links in the chain are the:

- Patient
- Family
- Treatment supporter
- Treatment centre workers
- Diagnostic centre workers
- TB co-ordinator

Good communication is the key to keeping the chain strong. All individuals who are involved in the chain need to be aware of how and when to contact each other if there are problems. We will now look at this in more detail as we think about identifying and tracing people who have missed their treatment or their follow up appointments.

The TB programme desk aide deals with these aspects of care and the relevant sections are reproduced on the next page. Note that all health care providers are involved in spotting a patient who is beginning to default from treatment.

RETRIEVING TB PATIENT

It is important that patients who have missed treatment or appointments are identified quickly and retrieved. The treatment supporter, CHO, treatment centre health care provider and diagnostic centre health care provider, and TB co-ordinator, DDHS, ITC all have important roles to play.

The treatment supporter should:

1. Recognise if the patient misses 2 days of treatment and visit the patient to try to resolve the problem - if they cannot, they must report to the CHO, clinic nurse or ITC as soon as possible.

The treatment centre health care provider should:

1. Review the treatment support card at every monthly review and count how many doses have been missed that month, and since starting treatment. If treatment has been missed the patient should be managed as appropriate

2. Identify if a patient has failed to attend clinic for monthly review (by checking the TB01 box file every month). If such a patient is identified the health care provider should:
   - Send a message to the CHO to visit the patient and report back within 3 days.
   - Visit the patient, if possible.
   - Inform the ITC of the patient and of attempts to trace them.

3. Take appropriate action if informed by a treatment supporter that a patient is missing treatment.
   - Visit patient to discuss problems (if possible) or
   - Inform ITC of the problem and request that they visit.

The diagnostic centre TB co-ordinator should:

1. Review the treatment support card at every monthly review and count how many doses have been missed that month, and since starting treatment. If treatment has been interrupted this should be noted and patient on retrieval counselled appropriately

2. Act appropriately to retrieve any patient that the treatment centre or treatment supporter/CHO has identified as defaulting from treatment or follow up. That is:
   - Co-ordinate with the CHO in the area
   - Visiting the patient to discuss treatment, defaulting and possible solutions
   - Writing a letter to telephone the patient (where feasible) requesting they attend for appointment
   - Any other feasible way, suitable to local circumstances.

3. Identify if a patient has failed to attend for periodic review at the diagnostic centre, i.e. at the end of intensive phase, month 5 and at the end of continuation phase and:
   - Send a message to the CHO to visit the patient and report back within 3 days.
   - Inform the treatment centre and request information about the patient. Personally visit the patient, if possible.

The TB co-ordinator can be contacted by:

- Telephone
- Sending a letter by the treatment centre transport
- Verbal messages

KEY POINTS

Every patient must complete the correct number of doses of the correct intensive phase treatment.

If a person is taking category I or III treatment, they must take 56 doses of intensive phase drugs.

If a person is taking category II treatment, they must take 56 doses of streptomycin and 84 doses of other intensive phase drugs.

If a patient has missed less than 14 doses of intensive phase drugs he does not need to be assessed at the diagnostic centre and can carry on with his current regime. HOWEVER he will need the correct number of doses, and hence will finish his intensive phase up to 14 days late.

TRACING THE PATIENT

If a patient is identified as missing treatment or an appointment it is important to start the correct procedures for tracing that patient. The correct tracing procedure for an individual patient will depend on several characteristics of the patient and the location. The desk guide indicates the possible tracing action that should be taken. Look again at this section.

Options include:

- Treatment supporter/ CHO visiting the patient at home
- Treatment centre health care provider sending a note/message for the patient to attend the treatment centre
- Treatment centre health care provider visiting the patient at home
- Treatment centre health care provider contacting the TB co-ordinator and requesting he/she visits that patient

INFORMING THE TB CO-ORDINATOR AND ASKING FOR HELP

The TB co-ordinator should be informed of any defaulting patient and the action taken by the treatment supporter and treatment centre health care provider to trace the patient and encourage them to continue treatment.

If the treatment supporter and treatment centre health care provider are unable to find the patient or, having found him, are unable to persuade him to continue TB treatment, the TB co-ordinator must be informed urgently.

KEY POINT

In your own district the TB co-ordinator can be contacted urgently by:

- Telephoning the Regional TB coordinator or main diagnostic centre asking for an urgent message to be left to the TB co-ordinator's
- Sending verbal message per public transport or what ever means that is fast.

TASK 2: MANAGING PATIENTS WHO HAVE INTERRUPTED TREATMENT AND HAVE BEEN TRACED

Management of patients after treatment interruption is based on review of information about treatment before interruption and current smear results of the patient. The diagnostic centre worker makes the decision about management and so all such patients must be referred back to the diagnostic centre. Records of the previous treatment (before interruption) are important, as the decision on how to manage patients with interrupted treatment depends upon 4 factors:

1. ***The patient's previous TB treatment category:*** This data is clearly indicated on both the TB treatment cards and there is no difficulty in getting this information. The patient's category before interruption of treatment will affect the treatment prescribed after interruption of treatment.

2. ***Length of treatment before interruption:*** This is found by studying the treatment support and TB treatment cards if these are available. If not available it can be estimated by comparing the date when the patient started the treatment with the last date when he/she collected treatment from the treatment centre.

3. ***Length of interruption:*** This is estimated by comparing the last date due for patient's collecting the tablet from treatment centre with the current date when the traced patient is being seen. The last date due for collection of tablets at the treatment centre can be found on the TB treatment card.

4. ***Smear results after interruption:*** When seen at the diagnostic centre the patient who has interrupted treatment may need to have sputum smear examination (see below) and the results will influence the management decision.

The desk aide also has very clear instructions about the correct management of patients who miss TB treatment.

MANAGING TREATMENT INTERRUPTION

It is important that patients who have missed treatment are managed appropriately. The action will depend on the total doses that have been missed since starting treatment.

Review missed treatment every month to spot problems early and prevents further missed doses.

➢ **If the patient has missed just an occasional dose**

√ Discuss the reasons and how to prevent this happening again

√ Do not get angry but make it clear to the patient that you are worried.

√ Congratulate the patient on the tablets he has taken but tell him you are worried about the missed tablets.

√ Explain that this is a very serious problem and could result in the TB not being cured. As the treatment centre health care provider you want to help solve the problem so that the patient will be cured.

√ Discuss what is preventing the patient from taking treatment every day and how to help him/her continue with TB treatment. Consider stigma, side-effects, time off work and distances to treatment supporter.

√ If possible continue with existing arrangements. If this is not possible then discuss arranging an alternative treatment supporter.

√ Report these problems to the TB co-ordinator, even if you think you have managed to solve the problem.

➢ If the patient has missed more than 14 days

√ Do not get angry but make it clear to the patient that you are very worried.

√ Explain that you are pleased the patient has taken some tablets and has come for review but you are very worried about so many missed tablets. Missing so many tablets ***is extremely serious and will result in the TB not being cured.***

√ Discuss the reasons for the missed tablets (as above).

√ Explain that the patient must return to the diagnostic centre immediately for reassessment. They need to have sputum taken and may need a change of treatment regimen.

Arrange immediate transfer to diagnostic centre. Write a letter giving the reasons why the patient defaulted. Send a message to the TB coordinator to inform them to expect the patient and when they will arrive. Give details of the name of the patient. Alternatively speak to the TB co-ordinator if the patient refuses to go back to the diagnostic centre.

A GUIDE TO MANAGING TB PATIENT WITH INTERRUPTED TREATMENT

<table>
<tr><td>Interruption for < 1month</td><td colspan="2">Interruption for 1-2 months</td><td colspan="3">Interruptions for 2 months or more (defaulter)</td></tr>
<tr><td rowspan="3">*Trace Patient

*Solve cause of interruption

*Continue treatment & prolong to compensate for missed doses</td><td colspan="2">*Trace Patient
*Solve cause of interruption
*Do 2 sputum smears and continue treatment while waiting for results
*Treat results as follows:</td><td colspan="3">*Trace Patient
*Solve cause of interruption
*Do 2 sputum smears and continue treatment while waiting for results
*Treat results as follows</td></tr>
<tr><td>Negative or EPTB
↓</td><td>One or both smears positive and treatment received:
↓
< 5 months ↓ | >5months ↓</td><td>Negative or EPTB
↓</td><td colspan="2">One or both smears positive and treatment received
↓</td></tr>
<tr><td>Continue treatment and prolong it to compensate for missed doses</td><td>*Continue treatment and prolong it to compensate for missed doses</td><td>*New Pt: Start a Retreatment regimen
*Previously treated Pt: Refer! May be MDR-TB patient. Request Gene Xpert or Culture and DST from available centres. Refer to higher level to be managed as possible MDR-TB patient.</td><td>Clinical decisions on individual basis whether to restart, continue or no further treatment</td><td>If initially New Pt:
*Start a first line Retreatment regimen:
*Do DST.</td><td>If initially Previously treated Pt:
* Refer! May be MDR-TB patient. Request Gene Xpert or Culture and DST from available centres. Refer to higher level to be managed as possible MDR-TB patient.</td></tr>
</table>

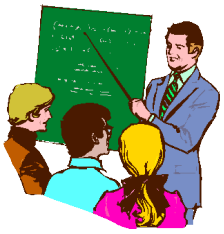
WRITTEN EXERCISES

INTRODUCTION

The following written exercises have been designed to allow us to practise how we will manage a patient who has interrupted their TB treatment. We will use the table from the desk aide to help us.

For each exercise read the information about the patient then look at the TB treatment card before answering the questions.

It is best that we do these exercises individually before discussing the answers with our colleagues and the facilitator. In this way we will see which aspects we find difficult and need to practise more.



DISCUSSION OF WRITTEN EXERCISES

Exercises 2 and 3 show two patients, Ms.Emelia Kyeremeh and Mr. Solomon Ashitey who have interrupted treatment for more than 2 weeks. As well as the action described above these cases should prompt the TB team to review the arrangements for community-based treatment in those areas. Is the problem just with those individual patients or is there a wider problem? Both patients had been missing treatment for a while. Had the Treatment Supporters correctly notified the treatment centre and TB team? Had the TB team then traced the patients and brought them to the diagnostic centre? Or did the patients present themselves for review?

It may be that these cases indicate that the reporting and retrieval system is not working and that there needs to be a review and revision of the system.

Refer to workbook.

KEY POINTS

It is important to identify patients who have interrupted treatment in order to manage them properly

Correct management of patients who have interrupted treatment depends on:

- Duration of treatment before interruption
- Length of interruption
- Category of treatment prior to interruption

Correct management may include:

- Doing a sputum smear
- Doing sputum culture in some cases
- Re-registering the patient
- Changing to a different treatment category

During this session we have been studying how

To detect and correctly manage the patient who interrupts treatment

If, as a result of completing this session, you are able to carry out this activity you will have achieved your learning objective. If you still feel unsure about certain aspects of what we have learnt then do not worry. As mentioned before we may need to practise some aspects further, after the course has finished.

CHAPTER FOURTEEN

MANAGING COMPLICATED CASES

INTRODUCTION

We have now followed the process of TB care from the detection of people possibly suffering from TB through to the declaration of treatment outcome. We have also studied the ways in which the 'chain of care' will ensure that patients who missed their treatment will be detected and how such patients will be managed.

In this chapter we will study the situations in which the management of TB cases may have to be different from the planned process. Such cases may arise if a patient develops side-effects to the chosen drugs, or if the TB patient is pregnant or HIV+. We are now going to study how to manage these and other complicated cases.

LEARNING OBJECTIVE

At the end of this session participants should be able:

- To appropriately manage patients with TB who have complications with their management.

The tasks involved are:

1. Deciding the management of a patient with side-effects from the TB drugs
2. Performing a drug challenge after a reaction to TB drugs
3. Managing the TB patient who is pregnant or HIV+
4. Managing Drug Resistant TB

As usual we will study these in turn.

TASK 1: MANAGING A PATIENT WITH SIDE EFFECTS FROM THE TB DRUGS.

It is possible for any drug to cause side effects and anti-TB drugs are no exception. Most TB patients do not suffer any side effects at all. Of those that do, many will suffer from only mild or minor side effects. Rarely does a patient suffer severe and serious side effects.

The TB control programme has specific procedures for identifying and managing the side-effects of TB drugs. All health-care providers who support the care of the TB patient till treatment is completed are taught how to identify and manage side effects of the anti-TB drugs.
At the community level the Treatment Supporters are trained to ask and identify whether the patient has developed any new symptoms and refer any such patient to the Treatment Centre for early review.

The Treatment Centre health workers are trained to review the physical condition of the patient at the monthly review. This includes consideration of any new symptom as a possible side-effect. The desk aide offers guidelines in the management of anti-TB drug side effects. The relevant section is reproduced here for convenience:

Side Effects of anti-TB Drugs and their management

Side Effects	Probable Drug	Management Action
Minor Anorexia, nausea, abdominal pain Joint pains Burning sensation in feet Orange/red urine Itching	 Rifampicin Pyrazinamide Isoniazid Rifampicin Streptomycin	**Continue anti-TB drugs, check doses** Give drug last thing at night Aspirin Pyridoxine 100mg/day Reassurance Give Anti-histamine
Major		Stop offending drugs
Itching, skin rash	Streptomycin	Stop anti-TB drugs (See below) Stop S, give E
Deafness (no wax on auroscoy)	Streptomycin	Stop S, give E
Dizziness (vertigo & nystagmus)	Streptomycin	Stop anti TB drugs (See below)
Jaundice (other causes excluded)	Most TB drugs esp. RHZ	Stop TB drugs, do urgent LFT and Prothrombin time
Vomiting & Confusion (Suspect drug induced liver failure)	Most TB drugs	Stop Ethambutol
Visual impairment (other causes excluded)	Ethambutol	Stop Rifampicin
Shock, purpura, acute renal failure.	Rifampicin	

Vomiting repeatedly is a problem because the drugs are not being absorbed. Vomiting with confusion is very serious because it is sign of liver failure. Refer a vomiting patient to a physician.

As you can see from the desk aide, the treatment centre health workers can manage some side effects of anti-TB drugs in the community. Others require urgent referral back to the diagnostic centre. A TB worker should see these patients with major side effects before their routine review.

KEY POINT

There are 8 conditions or symptoms that should alert us to the possibility of a serious side effect to a TB drug. These are:

- Skin rash
- Hearing impairment/Deafness
- Dizziness (vertigo & nystagmus)
- Jaundice
- Visual impairment (other causes excluded)
- Shock
- Purpura (bleeding under the skin)
- Acute renal failure (low or absent urine output)

If any of these develop, TB drugs should be stopped until the patient has been fully assessed.

The development of one or more of these conditions could represent a serious side effect to a TB drug, or it could be caused by another medical problem. Until the cause is clear, we should act as if the TB drugs were responsible and stop the drugs until a full assessment has been made. This assessment should be made at the diagnostic centre.

Adverse drug reactions are of two types, Allergic and Toxic.

- Allergic reactions only happen to certain people and are unrelated to the drug dose but can occur even with the smallest dose of the offending drug. Allergic reactions are the same for all drugs. Skin reactions to TB treatment are often allergic.
- Toxic reactions can happen to anyone when the dose of the drug is too high for him/her. Toxic reactions are different for every drug and have a wide variety of presentations.

We will now consider each of the above conditions. Remember that the aim of this course is to train ***health care providers*** for their role in theTB programme. It is not designed to be a detailed medical course and consequently we will not cover the full differential diagnoses of these conditions. We refer you to a standard medical textbook for this.

Skin

1. Skin itching, no rash (mild allergic reaction)
   - Continue anti tuberculosis treatment
   - Give anti-histamine, e.g. chlorpheniramine (Piriton)
   - Ask the patient to return if he develops a rash

2. Generalised rash with itching and fever (moderate allergic reaction)

➡ **Stop all anti tuberculosis drugs**

- Give Anti-histamine for itching.
- Give Paracetamol if the patient has a fever.
- Wait for the reaction to clear and then do a drug challenge to find out which drug caused the allergic reaction.
- Give a regimen that does not include the drug that caused the reaction.

3 Widespread rash with peeling skin, blisters or raised red spots (Severe allergic reaction). Eyes or mucous membranes may also be affected. The patient is very ill with fever. Prevent the patient getting this serious condition by:

- stressing to patients to stop their anti-TB drugs and report to the health centre as soon as they notice the smallest skin rash with itching, and
- All health care providers must take the smallest itching skin rash seriously and stop all drugs as above

➡ **Treat this patient as an emergency**

➡ **Stop all anti tuberculosis drugs**

- Admit all such patients
- Give Anti-histamine for itching
- Give Paracetamol for fever
- Give Prednisolone 60 mg daily
- Do not use Calamine lotion, or gentian violet if the skin is broken – use mercuro-chrome
- Apply Chloramphenicol eye ointment to the patient's eyes
- Make sure that the patient gets enough oral fluids – he/she may need intravenous fluids if he is very sick

- Give a course of antibiotics (eg Amoxicillin + clavulanate) if the blisters look infected
- Continue this treatment until the patient improves. Then reduce the Prednisolone by 5 mg every two days
- Wait for the reaction to clear completely. Depending on the severity this may take 4 weeks or more
- Very cautiously give test doses to find out which drug caused the allergic reaction once the reaction has cleared
- Give a regimen that does not include the drug that caused the reaction

Hearing impairment/Deafness

➡ **Stop Streptomycin**

- Streptomycin can cause deafness – if any hearing loss occurs stop and do not use Streptomycin again
- Give Ethambuthol instead, if the patient is not already taking it. Continue other anti-TB drugs.

Dizziness (vertigo & nystagmus)

➡ **Stop Streptomycin**

- Give Ethambutol instead (if the patient is not already taking it)
- Continue other anti tuberculosis drugs

Jaundice

➡ **Stop all anti tuberculosis drugs**

- Wait for the jaundice to clear and for liver function tests to return to normal.
- Once the jaundice has cleared, restart all drugs together at full dose. In most cases the patient can continue on the same regimen without the hepatitis recurring.
- If drug challenge unsuccessful or the patient is jaundiced but the patient is also very sick from TB, seek help from other TB experts.
- Do not give Pyrazinamide in case of liver disease.

Visual impairment (other causes excluded)

If the patient particularly has blurring of vision and difficulty telling the difference between red and green

➡ **Stop all anti tuberculosis drugs, particularly Ethambuthol**

- Continue anti tuberculosis treatment when vision improves. Do not give Ethambuthol again, even if the change in vision was only mild

Ethambuthol may cause blindness. Continually check for visual changes during treatment of child

Shock

➡ **Stop Rifampicin and do not use again**

Refer.

Purpura/bruising

➡ **Stop Rifampicin**

- Very rarely a rash due to bleeding under the skin will develop. The patient will bruise very easily. If this happens stop the Rifampicin and never give it again.
  If possible, seek advice from a specialist.

Acute renal failure

➡ **Stop Rifampicin and do not use again**

- Seek advice from a specialist as soon as possible (Refer).

Do not use Streptomycin or Ethambuthol in kidney failure.

TASK 2: PERFORMING A DRUG CHALLENGE AFTER REACTION TO TB DRUGS.
(At the District Hospital)

If a patient has a major drug reaction while taking TB medication and the TB treatment has had to be stopped, we must find out ***WHICH OF THE DRUGS*** caused the reaction. Then the patient can continue on a TB treatment regimen, which does not contain this drug. In order to identify which drug was responsible for the reaction the Diagnostic Centre clinician must admit the patient to the hospital in order to reintroduce each drug separately and observe to see if the reaction recurs. If there is no reaction to the first drug, a second drug is added and we observe for reaction once again. This process continues until the responsible drug has been identified. We always start with the drug that is least likely to be causing the reaction (see below).

For each drug we must start with a low dose. If a reaction does occur it will not be as bad as with a full dose. Gradually, the dose is increased to the full dose before the next drug is started. This process is called A DRUG CHALLENGE. It must be done in a planned and supervised manner in the hospital TB ward. It takes several days and the patient needs careful daily reassessment.

KEY POINTS

Only begin a drug challenge when the drug reaction has fully cleared
Only do a drug challenge in hospital
If the patient is taking the re-treatment regimen, consult a specialist for further advice
Only challenge the patient with the drugs that were in their original TB regimen.
Test the drugs in the following order:

Isoniazid
Rifampicin
Pyrazinamide
Ethambutol
Streptomycin

HOW TO DO A TB DRUG CHALLENGE ON AN ADULT PATIENT.

Using the chart below as a guide start the drug challenge.

TB DRUG CHALLENGE CHART FOR ADULTS

	ISONIAZID	RIFAMPICIN	PYRAZINAMIDE	ETHAMBUTOL	STREPTOMYCIN
DAY 1	50 mg	-----	-----	-----	-----
DAY 2	100 mg	-----	-----	-----	-----
DAY 3	300 mg	-----	-----	-----	-----
DAY 4	300 mg	75 mg	-----	-----	-----
DAY 5	300 mg	300 mg	-----	-----	-----
DAY 6	300 mg	Full dose (450 or 600mg)	-----	-----	-----
DAY 7	300 mg	Full dose	250 mg	-----	-----
DAY 8	300 mg	Full dose	1 gram	-----	-----
DAY 9	300 mg	Full dose	Full dose (1.5g or 2g)	-----	-----
DAY 10	300 mg	Full dose	Full dose	100mg	-----
DAY 11	300 mg	Full dose	Full dose	400mg	-----
DAY 12	300 mg	Full dose	Full dose	Full dose (800 mg or 1.2g)	-----
DAY 13	300 mg	Full dose	Full dose	Full dose	125 mg
DAY 14	300mg	Full dose	Full dose	Full dose	500mg
DAY 15	300 mg	Full dose	Full dose	Full dose	Full dose (800mg or 1.2g)

- Decide which TB drugs the patient was taking at the time of the reaction . Ignore the columns that apply to drugs that the patient was not taking.
- Make sure that the correct dose of the correct drug(s) are given at the same time every day and that the patient is re-examined for any signs of a reaction just before the next dose is given.
- Make sure that a health worker every day, 2 - 3 hours after taking the dose, examines the patient. If the patient is sensitive to this drug a slight skin rash or fever will develop. If the health worker notices a possible reaction he/she should inform a senior health worker or MO.
- If no allergic reaction has occurred within 24 hours of a test dose, give the next dose according to the chart. Again watch for rash/fever/itching 2-3 hours later.
- Continue in this way, following the chart, until all the drugs have been restarted OR a reaction occurs.
- If a reaction occurs inform the senior health worker or MO. STOP THAT DRUG and ensure that it is crossed out from the rest of that patient's drug challenge chart.

- ***RECORD THE DRUG REACTION IN RED ON THE PATIENT'S DRUG CHART, MEDICAL NOTES, TB CARD and PATIENT HELD CARDS.***

- On the next day, if the reaction has settled, continue with the next drug to be tested according to the chart. If the reaction has not yet settled then continue with the previous stage of the drug challenge (with out the drug that reacted) until the reaction settles. Continue with those TB drugs that you have already tested and which you know have not caused a reaction.

- At the end of the drug challenge, use the information you have gained to decide on a new TB regimen for the patient avoiding the drugs which caused a problem. Do this with the help of the regional or national TB programme officers or specialists at the referral hospital to ensure the new regimen will not lead to drug resistance developing. You must talk to a specialist if the patient is allergic to 2 or more drugs OR if the patient is on a re-treatment regimen.

- Should no reactions occur with any of the test doses then assume there was another cause for the reaction and continue the drugs as before.

How To Do A Drug Challenge in Children

- The procedure is the same for adults, except for the doses given.

- For each drug, give one tenth of the dose that he was taking on the first day of testing that drug. If there is no reaction, give one fifth of the original dose on the second day.

TASK 3: MANAGING THE TB PATIENT WHO IS PREGNANT

A TB patient who is pregnant needs to be given special consideration. It is very important to ask a woman if she is pregnant when TB is first diagnosed. Encourage all female TB patients to inform the health care provider when they become pregnant during TB treatment.

If a woman has TB it is advisable for her to delay becoming pregnant until she has recovered. This is because of the danger from the TB drugs and also a healthy woman is more likely to have a healthy baby than a woman who is sick with TB. Consequently it is good to discuss this with female patients and give contraceptive advice as well.

There are 3 reasons why a pregnant TB patient needs special consideration:

1. Some TB drugs (i.e. Streptomycin) can be dangerous to the developing baby. If a TB patient is pregnant she must not be given Streptomycin. This is because it may cause hearing impairment in the baby. Ethambutol should be used instead.

2. The baby could be a 'close contact' of TB. If a woman is pregnant when she has TB then her baby will be classified as a 'close contact' when he/she is born. Part of chapter 8 discussed the management of babies of women with TB and this guidance should be followed.

3. The pregnant TB patient may also be HIV positive. We have previously taught about the association between TB and HIV in areas where HIV is common. In these situations a TB patient may also have HIV infection, even if she has not been tested for HIV. In some areas women who are HIV positive and are pregnant are offered anti-HIV drugs. This reduces the chance of the baby becoming HIV positive.

A TB patient who is pregnant should be counselled carefully about the benefits of receiving anti-HIV treatment both for herself and her baby, if her test proves positive. She should be encouraged and supported to have an HIV test done.

(An HIV+ pregnant woman who has TB is eligible to start ART irrespective of the CD4 count. She should be referred to the ART program in your district hospital)

BREASTFEEDING

A breastfeeding woman who has TB should receive a full course of TB treatment. Timely and properly applied chemotherapy is the best way to prevent transmission of tubercle bacilli to her baby. All antituberculosis drugs are compatible with breastfeeding: a woman taking them can safely continue to breastfeed. Mother and baby should stay together and the baby continues to be breastfed in the normal way. The baby should be given prophylactic isoniazid (5mg/kg body weight) for at least 6 months beyond the time the mother is considered to be non-infectious. BCG vaccination of the newborn should be postponed until the end of isoniazid prophylaxis.

KEY POINT

NEVER GIVE STREPTOMYCIN TO A TB PATIENT IF SHE IS PREGNANT.

It may cause hearing impairment in the baby. Use Ethambutol instead.

TASK 4: MANAGING DRUG RESISTANT TB.

MULTI-DRUG RESISTANT TUBERCULOSIS (MDR-TB)

Since the early 1990's several outbreaks of MDR tuberculosis have been reported in different regions of the world, as a consequence of inappropriate use of essential anti-tuberculosis drugs. MDR is defined as resistance to at least the two most potent first line anti-TB drugs, Isoniazid and Rifampicin. Usually MDR tuberculosis occurs in chronic cases, after failure of WHO or other re-treatment regimens and represents a significant proportion of TB patients with acquired resistance. Exceptionally, MDR tuberculosis is observed in new cases, i.e. in patients who have never taken anti-tuberculosis drugs, and who have been infected by MDR bacilli. In most settings, these new cases with MDR bacilli represent a very small proportion of new TB patients with primary resistance.

How is MDR tuberculosis produced?

Drug resistant bacilli are the consequence of human error in any of the following:

- Prescription of chemotherapy
- Management of drug supply
- Case management
- Process of drug delivery to the patient

The most common medical errors leading to the selection of resistant bacilli are:

- The prescription of inadequate chemotherapy to the multi-bacillary pulmonary tuberculosis cases (e.g. only 2 or 3 drugs during the initial phase of treatment in a new smear-positive patient with bacilli initially resistant to isoniazid)

- The addition of one extra drug in the case of failure, and repeating the addition of further drug when the patient relapse after what amounts to monotherapy.

The addition of one extra drug in the case of failure, and repeating the addition of further drug when the patient relapse after what amounts to monotherapy.

As with other forms of drug resistance the phenomenon of MDR tuberculosis is entirely man-made

The most common errors observed in the management of drug supply are the following:

- the difficulty experienced by poor patients in obtaining all the drugs that they need (due to lack of financial resources or health insurance);
- frequent or prolonged shortages of anti-tuberculosis drugs (due to poor management and/or financial constraints in developing countries);
- use of drugs or drug combinations of unproven bio-availability;

The following factors also have the effect of multiplying the risk of successive monotherapies and selection of resistant bacilli:

(a) the patient's lack of knowledge (due to lack of information or due to inadequate counselling before starting treatment);

(b) poor case-management (when the treatment is not directly observed, especially during the initial intensive phase);

How to prevent MDR tuberculosis

In New Cases:

A good and effective DOTS program prevents development of MDR TB. This implies strict and direct supervision of treatment (DOT) is in place throughout the 6 months of treatment. This is because the TB program depends on Rifampicin and Isoniazid throughout the treatment.

Previously Treated Cases

In the group of tuberculosis patients previously treated with one or several courses of chemotherapy and who remain sputum positive (by smear and/or culture), 4 sub-populations can be observed:

- Patients excreting bacilli still susceptible to all anti-tuberculosis drugs;
- Patients excreting bacilli resistant to at least one anti-TB drug other than Isoniazid and Rifampicin are defined as drug resistant TB.
- Patients excreting bacilli resistant to at least, isoniazid and Rifampicin, are defined as multi-drug resistant TB (MDR-TB)
- Patients excreting bacilli resistant to any fluoroquinolone and at least one of 3 injectable 2nd Line drugs (Capreomycin, Kanamycin and Amikacin) in addition to MDR are said to have extensive drug resistant TB (XDR-TB)

The respective proportions of the three sub-populations varies according to the chemotherapy applied in the community during the past years. It varies also with the numbers of courses of chemotherapy received by the patients.

(a) In patients who have failed after the ***first course of chemotherapy*** (WHO) recommended regimens or any other, the proportion of patients excreting bacilli still susceptible to all drugs is usually higher than the proportion of the two other sub populations.

For this reason, a fully supervised retreatment regimen might cure the majority of patients.
The early use of a sputum culture and DST to determine MDR TB and drug selection is very important.

(b) In patients who have failed after ***two courses of chemotherapy*** (the second being the fully supervised standard WHO re-treatment regimen) there is a higher proportion of these patients who will be excreting DR and MDR bacilli. For this reason a second application of the retreatment regimen is likely to fail.

How to manage drug resistant TB:

Currently the NTP has a strategy for the management of MDR-TB in the country.
The key components of this strategy are outlined in the document known as: Guidelines for the Management of Multidrug Resistant Tuberculosis in Ghana and includes the following:

- Performing sputum culture and DST in order to make the diagnosis.
- Accessing and utilizing second line anti-TB drugs which are very expensive, toxic and less effective than the first line drugs and must be taken over a period of 18 to 24 months.
- Information about specialized health facilities and specially trained staff to manage drug resistant TB patients
- Information about strengthened community participation and support for patient care.

TASK 5: MANAGING THE PATIENT WITH OTHER MEDICAL CONDITIONS.

Pregnant Women.

Streptomycin is ototoxic to the foetus and should not be used in pregnancy. It is replaced with ethambutol. Rifampicin, isoniazid, pyrazinamide and ethambutol (RHZE), are safe for use in pregnant women. Pregnant women should be given 50mg pyridoxine daily with anti-TB medication, in order to minimize any risk to the foetus.

Treatment of patients with liver disorders

Established chronic liver disease

Isoniazid plus rifampicin plus one or two non-hepatotoxic drugs such as streptomycin and ethambutol can be used for total treatment duration of eight months. An alternative regimen is streptomycin plus isoniazid plus ethambutol in initial phase followed by isoniazid and ethambutol in the continuation phase, with total treatment duration of 12 months. Recommended regimens are the following: 2SHRE/6HR or 2SHE/10 HE. Do not use Pyrazinamide in such cases.

Acute hepatitis (e.g. acute viral hepatitis)

In most cases, the clinical judgement is that it is possible to defer treatment of tuberculosis until the acute hepatitis has resolved. If it is considered necessary to treat the TB during acute hepatitis, the combination of streptomycin and ethambutol is the safest option until the hepatitis has resolved then treat with Short Course Chemotherapy without Pyrazinamide

Treatment for patients with renal failure

Isoniazid, rifampicin and pyrazinamide are eliminated almost entirely by biliary excretion or metabolized into non-toxic compounds. These drugs can therefore be given in normal dosages to patients with renal failure. In severe renal failure, it is recommended that isoniazid be given with pyridoxine to prevent peripheral neuropathy. Streptomycin and ethambutol are excreted by the kidney. Where facilities are available to monitor renal function closely it may be possible to give these drugs in reduced doses..

The safest regimen for renal failure patients is: 2 HRZ /6HR.

WRITTEN EXERCISE
Refer to page 103 of workbook

MAINTAINING THE TB REGISTER

INTRODUCTION

We have already studied how to fill in the TB register in chapter 7. However, it is such an important part of the TB programme that we will now reconsider it again. It forms the basis of the system by which we can monitor the whole TB programme to ensure that it is functioning well. It is the role of the TB co-ordinator to ensure that all newly diagnosed TB patients are entered into the TB register. He/She also ensures that details of their records in the register are updated correctly. The purpose of maintaining the TB register in an accurate and up-to-date state is to enable the information we need for monitoring the programme to be readily available every quarter.

After a person has been diagnosed with TB, classified and assigned the correct treatment regimen, all arrangements for community-based TB care must be made, and all the details of this patient must be entered into the district TB register.

Further details are entered when the patient is reviewed at the end of the intensive and continuation phases. Remember that the ***District TB*** register will be held at the District Health Directorate where as each treatment centre holds an Institutional register of TB cases.

It is usually the responsibility of the ITC to enter these details on the register when seeing TB patients. However it is very important that the regional TB Co-ordinator takes the overall responsibility for regularly checking that the TB register is being completed properly.

LEARNING OBJECTIVE

At the end of this session we should be able to:

- Maintain the TB register and ensure it is accurate and up-to-date.

There are several parts to this:

1. Registering the newly diagnosed TB patient
2. Ensuring that all people identified as being sputum positive by the laboratory have been captured by the TB programme
3. Updating the register at the end of the intensive phase
4. Updating the register with treatment outcomes
5. Entering a “transferred in” TB patient onto the TB register

Whenever the TB patient is seen at the diagnostic centre, the ITC must complete the TB register at the same time. **It is important that this paperwork is not left to a later time or date.**

TASK 1: REGISTERING THE NEWLY DIAGNOSED TB PATIENT

We have already studied this aspect of maintaining the TB register in chapter 7 and so we will just revise the most important issues. Relevant section of the desk aide is reproduced below to remind you of the main points.

REGISTERING THE TB PATIENT

Done by the TB co-ordinator or any health worker in-charge of TB care at diagnostic centre

Ask and record information on the TB01 (TB treatment card), and TB03 (TB register):

- Ask the full traceable address of patient and contact person details.
- Use list of associated facilities (& catchment villages) to identify a suitable treatment centre
- Record address, contact person details and treatment centre in TB01.
- Fill in the first part of the TB register TB03 by transferring data from the TB01.
- Explain and arrange DOT as below.

On the next pages the TB register is reproduced again. Have another look to remind yourself of the layout. If you are unsure about any of the columns or rows of the TB register, or how a patient is registered then stop here and study chapter 7 once again.

DISTRICT TUBERCULOSIS REGISTER TB 03

District TB No.	Date Registered	District TB No	Name of Patient	Age	Sex M/F	Address & Tel No. of Patient	Name, Tel No. & Address of Contact Person	Disease Classification: PP, PN, EP & Site[1]	Type of Patient N,R,F,D, T,O[2]	Digital/ Chest X-ray[3]	Sputum Smear Microscopy Result									Treatment		Living Support		Treatment Outcome		TB/HIV				
											Before Treatment			2 or 3 Months		5 Months		End of treatment												
											Smear Results	GXP/ Culture/ DST	Lab No. & Result	Smear Results	Lab No. & Date	Smear Results	Lab No. & Date	Smear Results	GXP/ Culture/ DST	Lab No. & Result	Category: New/ Previously Treated/other	Date Started	Date CBTC Initiated	Date Enablers Provided	Date[3]	Outcome[4]	HIV Results & Date[5]	CPT Start Date[7]	ART Start Date[8]	Remarks

[1]Enter: PP for Pulmonary Sputum Smear Positive, PN for Pulmonary Sputum Smear Negative and EP and site/organ of Extrapulmonary TB.

[2]Enter: **N** for New – A patient who has never had treatment for TB or who has taken antituberculosis drugs for less than 1 month.

R for Relapse – A patient previously treated for TB, declared cured or treatment completed, and who is diagnosed with bacteriological (+) TB (smear or culture).

F for Treatment Failure – A patient who is started on a re-treatment regimen after having failed previous treatment.

D for Return after Default – A patient who returns to treatment, positive bacteriologically, following interruption of treatment for 2 or more consecutive months.
T for Transfer in – A patient who has been transferred from another TB Register to continue treatment. This group is excluded from the quarterly report on registration.

O for Other previously treated– All cases that do not fit the above definitions. This group includes Smear positive cases with unknown outcome of previous treatment, Smear negative previously treated, EP previously treated and chronic case (ie a patient who is sputum positive at the end of a re-treatment regimen)

[3]Enter: **ND** for Not Done, S for Suggestive, NS for Not Suggestive, **U** for Unknown/atypical

[3]Enter the date that treatment was stopped

[4]Enter Code for Treatment Outcome as follows:

1 = Cure: Sputum smear (+) patient who is sputum (–) in the last month of treatment and at least once before.

2 = Treatment completed: Patient who has completed treatment but who does not meet the criteria to be classified as a cure or a failure.

3 = Default: Patient whose treatment was interrupted for 2 consecutive months or more.

4 = Died: Patient who dies from any cause during the course of treatment.

5 = Transfer out: Patient who has been transferred to another recording and reporting unit and for whom treatment outcome is not known.

6 = Treatment failure: New patient who is sputum smear (+) at 5 months or later during treatment, or who is switched to Category IV treatment because sputum turned out to be MDRTB. Previously treated patient who is sputum smear positive at the end of his retreatment or who is switched to Category IV treatment because sputum turned out to be MDRTB

[5]Enter RT if patient was counselled but refused test, +ve if test positive, -ve if test negative and ND if counselling and testing not done 6Enter N if patient was not on CPT or else enter the date of initiation of CPT.

[7]Enter N if patient not referred to HIV Clinic, else enter Registration no. and date of registration [8]Enter N if patient not on ART, else enter Registration no. and date of initiation of ART

TASK 2: ENSURING ALL SPUTUM POSITIVE PEOPLE HAVE BEEN "CAPTURED" BY THE TB PROGRAMME

So far in this course we have been following TB patients from the first presentation with possible TB, through investigation, diagnosis and treatment in the TB programme. Once a TB patient has entered the TB programme and been registered on the TB register it is fairly easy for the TB co-ordinators to "keep track" of the patients and spot any one who defaults from treatment or review.

There is, however, one important point at which a TB patient may default even before treatment starts. This occurs at the initial stage when a patient submits sputum for analysis but does not return for the result. Such cases arise when the patient does not fully understand the reason and significance of the test, or the arrangements for collecting the results. Remember that this reflects poor communication skills on the part of the health workers who have seen the patient prior to the time that the sputum is sent to the laboratory for analysis.

Consequently it is important that the TB co-ordinator checks the laboratory register for results of sputum samples at regular intervals to detect any patient who has been found to have sputum positive TB but has not been captured into the TB programme. This should be done frequently, at least once a week, and at a regular time so that it is not forgotten. In a busy diagnostic centre it may be necessary to do this at the end of every day.

If the laboratory has identified a patient as having a positive sputum sample but that patient is not on the TB register then action must be taken. The details of the patient must be retrieved from the register and every effort is made to trace him. It is for this reason that the sputum request form (TB05) must contain details of the name, and detailed directions to the patient's home e.g telephone numbers, landmarks etc.

> **KEY POINT**
> It is responsibility of the TB co-ordinator to check the laboratory register regularly and to trace any sputum positive patient who has not been entered into the TB register.

TASK 3: UPDATING THE REGISTER AT THE END OF THE INTENSIVE PHASE

The section of the TB register that must be completed at this stage relates to the sputum examination that has been made. In the remarks section it is possible to record that the patient has changed to the continuation phase,.

TASK 4: UPDATING THE REGISTER WITH TREATMENT OUTCOMES

At the end of the continuation phase the patient again submits sputum for examination and is reviewed by the healthworker with the result. (see also chapter 12). At this stage the healthworker declares a "treatment outcome" for the patient.

Once more the TB co-ordinator or any health worker in charge of TB care has the responsibility for entering these details on the TB register. We will now study the different treatment outcomes that can be declared for a TB patient at the end of the continuation phase.

For most patients the outcome of treatment is declared at the end of the continuation phase. These are:

- Cured
- Treatment completed
- Treatment failure
- Died
- Default **(lost follow up)**
- Transfer out (**WHO does not accept transfer out as treatment outcome. Endeavour to find the real outcome for all transfer out cases**)

Treatment outcomes declared at the end of continuation phase

TB treatment outcomes
There are 6 treatment outcomes:

- **Cured:** Initially smear or culture positive patient who has completed the treatment, and is sputum smear or culture negative in the last month of treatment and on at least one previous occasion.

  Completed: A patient registered as pulmonary sputum or culture positive, completed treatment, but had no sputum smear or culture at the end of treatment or one negative sputum smear at or after 5 months of treatment.

  A patient registered as pulmonary smear negative or extra pulmonary and received a full course of treatment
  A patient registered as "smear not done" (e.g. children) and received a full course of treatment

- **Treatment Failure:** Smear or culture positive patient who remained, or became smear positive again five months or later after commencing treatment, ***OR***
  a sputum negative patient found sputum positive at end of 2nd month.
  Treatment is considered failure at any point of treatment when MDR-TB is diagnosed

- **Transferred Out:** A patient who is transferred to another district and TB register while on treatment and whose treatment outcome is unknown. All efforts must be made to find the treatment outcomes of such patients.

- **Defaulted:** A patient who at any time after registration had not collected drugs for 4-8 or more consecutive weeks (2 months)

- **Died:** Patient who dies for any reason during the course of treatment (based on information gathered, verified and recorded by TB co-ordinator or health worker).

In the case of a patient who has died, or who has defaulted from treatment, the TB co-ordinator or health worker will have to complete the TB register as soon as the death or defaulting is made known to him/her. All efforts should be made to audit the cause of death.

TASK 5: ENTERING A 'TRANSFERRED IN' TB PATIENT ONTO THE TB REGISTER

A "Transfer in" patient is one who moves away from either any particular treatment center to another treatment center

(*i*) ***Movement within the same district or***

(ii) Out of one particular district to a completely new one.

The health worker should determine if it is (i) or (ii) above

- If the patient has transferred from another facility in your district as in (i) above: then this patient will already be listed in the District TB register. Do not assign a new District TB number. Just find the patient in the register and in The "Remarks" column for the patient's original entry, write the name of the facility where the patient is now being treated.
- However if the patient has transferred from a different district then register the patient in your District TB Register and assign a new District TB number. If you know the former District TB number earlier assigned to the patient in the former District then write it in the "Remarks" column.

KEY POINTS

The TB register holds information on all cases of TB in the district and is used to assess and monitor the TB programme.

It is the responsibility of the TB co-ordinator to ensure that the TB register is being accurately maintained.

It is the responsibility of the health workers to ensure that details of the TB patients are entered onto the register and are updated as necessary.

It is the responsibility of the diagnostic centre health workers to ensure that every patient sees the DOTS centre nurse or TB co-ordinator at every visit to the diagnostic centre.

It is the responsibility of all health workers to ensure that patients' information details are recorded accurately and legibly on all TB forms (including the sputum request form), to enable accurate entry of details onto the register and tracing of patients if neccesary

WRITTEN EXERCISE
Refer to page 107 of workbook

During this session we have been studying how:
To maintain the TB register and ensure it is accurate and up to date.

If, as a result of completing this session, you are able to carry out this activity you will have achieved your learning objective. If you still feel unsure about certain aspects of what we have learnt then do not worry. As mentioned before we may need to practise some aspects further, after the course has finished.

Make a note of the aspects that you feel you would benefit from more practice so that you will be able to focus on these at a later date.

The areas in which I need more study are:

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REPORTING IN THE TB PROGRAMME

INTRODUCTION

So far we have been studying the process of identifying and caring for TB patients in our facility or area. We have looked at the skills that we as individual health workers need when we are caring for individual patients. These skills and tasks are very important for the care of a patient. However we must also ensure that the TB programme as a whole is working effectively and efficiently. This is done by monitoring of the TB programme so that problems may be identified and corrected quickly.

It is the responsibility of the TB co-ordinators (Regional, District and Institutional) to ensure that this monitoring takes place. Monitoring may also be done by the Community-Health Officers and as a result they also need to be trained in this role. There are 2 versions of this chapter. This is a version which is for the TB co-ordinators and Community Health Officers to use. Another version B is available for other health workers who, although not needing to study the details of monitoring, will need to understand the principles.

LEARNING OBJECTIVE

At the end of this chapter the participants should be able to:

- **To monitor the TB programme and ensure it is running efficiently.**

1. Once again there are several tasks to the monitoring process: Quarterly reporting on case finding (TB07)
2. Quarterly reporting on smear conversion (TB08B)
3. Quarterly reporting on treatment results (TB08)

TASK 1: QUARTERLY REPORTING ON CASE FINDING

The quarterly report on case finding of new and re-treatment cases of tuberculosis is important in the routine monitoring system of the TB Programme. It is also known as the TB07 report.

The report shows the number of different types of TB cases that were diagnosed and registered during a quarter of the year. Each quarter is a 3-month period.
The 4 quarters are:

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

The different types of TB considered are:

- New pulmonary smear positive cases
- New pulmonary smear negative cases
- New extra-pulmonary tuberculosis cases
- Relapses
- Return after default
- Treatment failure
- Other patients with history of more than four weeks drug intake in the past who do not fit into the above cases.

Transferred-in cases should not be included, as they will already have been reported as new cases at another diagnostic centre.
The quarterly report on case finding of new and re-treatment cases (TB07) is prepared at the level of the health facility and the district level and is produced during first week of the month following the end of every quarter. It is done by extracting data from the TB register at each diagnostic/treatment centre. All new and re-treatment cases registered during the previous quarter (that is the quarter being reported) are identified by looking at the "date of registration" column in the register.

An example of the quarterly report on case finding of new and re-treatment cases (TB07) form is given below. It is followed by an explanation of the different sections of the form.

The report includes important indicators that can alert us as to whether or not the diagnostic procedures are working effectively. The reports are examined by the district TB co-ordinator who checks the completeness and consistency of the reports and looks for problems. The report will also be presented to the district health management team. Then the reports will be forwarded to Regional TB Coordinator/Deputy Director Public Health, at the regional health administration, who reviews, and disseminates to all the relevant stakeholders. .

Regional Quarterly Review meeting (RTC/DTC/ITC)
This is the most important programme management review meeting at the region closest to implementation.

The convenor of this meeting is Regional TB coordinator and M&E Officer, with explicit permission from Deputy Director Public Health.

The meeting dates are pre-determined and specific dates and time should always be confirmed and notified to the National TB control Programme Manager.

Quarterly Meeting date	Period under review	Meeting materials
January	Oct-Dec	TB01,TB07,TB08,TB03,TB04 Institutional TB registers
April	Jan- Mar	TB01,TB07,TB08,TB03,TB04
July	Apr-Jun	TB01,TB07,TB08,TB03,TB04
October	Jul-Aug	TB01,TB07,TB08,TB03,TB04

Meeting duration: One full day. It may vary depending on problems to be tackled.

Meeting Participants: All District TB Coordinators, ITC, RTC, DDPH and DDCC.
District Directors are invited anytime there are special challenges in the district. The meeting is always chaired either by the regional TB coordinator or DDPH. It must take place always even in the absence of key persons at the schedule times. Meeting Report should reached the National TB control programme Manager during the first week of the month after the meeting.

GHANA NATIONAL TB CONTROL PROGRAMME
QUARTERLY REPORT ON TB CASE REGISTRATION

Patients diagnosed previous quarter: _____ Quarter _____ 20 _____ Name of Health facility: _____

Level of Report: Region ☐ District ☐ Subdistrict ☐ Region: _____ District Code _____

Name: _____ Sign: _____ Date Completed: _____

	Adult (15+ yrs)																Children (less than 15 years)								TOTAL CASES		
HIV Status	SM+ PTB										SN-PTB		EP		OTHER		PTB						EPTB				
	New Cases			Relapse			Return After Default		Treatment Failure		New Smear Negative		New EPTB		Previously Treated		Smear Positive		Smear Negative		Smear ND/DA		EPTB				
	M	F	T	M	F	T	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	T
HIV+																											
HIV-																											
ND/NA																											
Total																											

New smear positive pulmonary TB cases by age and sex

Age	0 - 4			5 - 14			15-24		25-34		35-44		45-54		55-64		65+		Grand Total		
Sex	M	F	T	M	F	T	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
HIV+																					
HIV-																					
ND/NA																					
Total																					

TB/HIV

Activity	M	F	TOTAL
No. HIV Counselled			
No. HIV Tested			
No. HIV Positive			
No. TB cases among PLHIV			
No. on CPT			
No. on CPT			

ND/NA= Not done or not available.

Please turn overleaf and provide age/sex for other catogories

GHANA NATIONAL TB CONTROL PROGRAMME
QUARTERLY REPORT ON TB CASE REGISTRATION

Relapse TB cases by age and sex

Age	0 - 4		5 - 14		15-24		25-34		35-44		45-54		55-64		65+		TOTAL		Grand Total
Sex	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
HIV+																			
HIV-																			
ND/NA																			
Total																			

Return After Default TB cases by age and sex

0 - 4		5 - 14		15-24		25-34		35-44		45-54		55-64		65+		TOTAL		Grand Total
M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	

Treatment Failure TB cases by age and sex

Age	0 - 4		5 - 14		15-24		25-34		35-44		45-54		55-64		65+		TOTAL		Grand Total
Sex	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
HIV+																			
HIV-																			
ND/NA																			
Total																			

New smear negative TB cases by age and sex

0 - 4		5 - 14		15-24		25-34		35-44		45-54		55-64		65+		TOTAL		Grand Total
M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	

New Extra pulmonary TB cases by age and sex

Age	0 - 4		5 - 14		15-24		25-34		35-44		45-54		55-64		65+		TOTAL		Grand Total
Sex	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
HIV+																			
HIV-																			
ND/NA																			
Total																			

Other TB cases by age and sex

0 - 4		5 - 14		15-24		25-34		35-44		45-54		55-64		65+		TOTAL		
M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	

Understanding the quarterly report on case finding of new and re-treatment cases (TB07) form

THE TOP of the form is used to record general information about the diagnostic/treatment centre and the district. It allows the regional programme to quickly determine the district and the quarter that is being reported.

BLOCK 1 is subdivided into three main sections:
One for Adults (>15 years), the second for children (<15 years) and the third, being the total for all cases.

The adult section is divided into seven columns:

1. Smear-positive New cases of pulmonary Tuberculosis
2. Smear-positive Relapse of pulmonary Tuberculosis
3. Smear Positive Return after Default
4. Smear Positive Treatment Failure
5. Smear-Negative New Cases of pulmonary Tuberculosis
6. Extra pulmonary cases of tuberculosis
7. Other re-treatment cases of Tuberculosis including return after default with negative sputum smear, pulmonary cases with unknown result of previous treatment, and extrapulmonary cases previously treated.

Note that relapse, return after default and treatment failure can only be smear positive. Any other previously treated case is to be included in the 'Other' column.

The children section is divided into 4 columns:

1. Smear-Positive new pulmonary TB
2. Smear-Negative new pulmonary TB
3. Pulmonary TB in which sputum smear microscopy was not done or in which information was not available
4. Extra-pulmonary TB.

SORT CODES:

The information put into the quarterly report on case finding is taken from the Institutional and/or District TB registers. The information from the registers is also analysed for the reports on sputum conversion and treatment outcomes, which we shall be studying later.

Six characteristics of each patient are used to represent each patient to provide information for the reports. ***These are:***

1. Age of the patient –under or 15 years and above
2. Sex of patient
3. Disease classification -
4. Type of patient
5. Smear results at time of registration.
6. HIV status

The selected characteristics are recorded at different places in the TB03 register which makes it cumbersome to analyse them separately. To facilitate the tabulation process of each patient, sort codes are used.
These are allocated on the basis of information taken from the TB register and will be explained in more detail below.

No.	Characteristics	Abbreviation Used in Sort Code	Remarks
1	Age	A (Adult) C (child)	"A" or "C" forms the first letter of the sort code
2	Sex	M (male), F (female)	"M" or "F" forms the second letter of the sort code.
3	Disease classification	P (pulmonary), E (extra-pulmonary)	"P" or "E" forms the third letter of the sort code.
4	Type of patient	N (New) R (Relapse) F (Treatment failure) D (Return after Default) O (Other re-treatment)	"N", "R", "F", "D" or "O" forms the fourth letter of the sort code
5	Smear result at the time of registration	P (smear positive) N (smear negative) T (smear not done/known)	"P", "N" or T forms the fifth letter of the sort code.
6	HIV status	+ (Positive) - (Negative) N (Not known)	"+", "-" or N forms the sixth letter of the sort code.

The sort code is a set of six letters, each letter representing one of the six characteristics of a patient. By combining the six letters a sort code can be given to each individual patient. The order of the six letters in the sort code reflects the sequence in which they are recorded in the TB register. For example AMPNP+ is given to a patient who is an adult (age), male (sex), with pulmonary tuberculosis (disease class), a new case (type) and smear (sputum results) and HIV positive. The following is a list of sample sort codes for patients with different combinations of the sorting characteristics.

Patient Characteristics	Sort Code
A 27 year old man with extrapulmonary TB who is HIV positive and has never had TB treatment before	AMENN+
A 12 year old girl with multiple lymph node TB in the neck with no cough and never had TB treatment. HIV test not done	CFENNN
A 50 year old male soldier who had had treatment for TB in the past for 4 months but discontinued because of war. He has returned with sputum positive pulmonary TB and is HIV positive.	AMPDP+

The sort code is given and recorded in the remarks column of the TB register when preparing the quarterly case finding report. The sort code helps in tabulating the data for all three quarterly reports i.e. case finding, smear conversion & treatment outcome.

BLOCK 2:

Block 2 presents the sex-specific data on new pulmonary smear-positive cases from Block 1. The result is a chart of just new pulmonary smear-positive cases, with both sexes presented by specific age groups. The age groups used in Block 2 are internationally recognized age groups. The HIV status (i.e. whether positive, negative or not known) of each group is also represented.

When the report is completed, the total number in the BLOCK 2 column TOTAL should correspond to the total number in Block 1 under the heading New Cases.

There are two main reasons for reporting new pulmonary smear-positive cases of tuberculosis by sex and age groups:

i. ***To evaluate case finding:***

- ***To see if sex distribution of new pulmonary smear-positive cases is unexpectedly high (or unexpectedly low) in particular age group(s).***
- ***To see if age distribution of new pulmonary smear positive cases is similar (or dissimilar) to the national or regional distribution.***

ii. ***To determine the trend of tuberculosis: To see if the number of cases for either sex, in a particular age group is increasing or decreasing. In successful programmes, there is a shift in age distribution towards older age groups.***

The information is collected from the TB register by using worksheets to help count and record the patients in the different sort codes. There is a different work sheet for BLOCK 1 and for BLOCK 2. These are shown on the next page. The reverse of this form is used to complete the age and sex for the other categories of TB as in the new cases

Completing the quarterly report on case finding of new and re-treatment cases (TB07) form

In this section we will learn how to manually count the number of cases in each of the groups to fill in the form.

THE TOP:

The name of diagnostic centre, date of completion of form (day/month/year), signature of the TB co-ordinator, name and number of the district are recorded in the given spaces.

The quarter and the year being reported is recorded by using the following table:

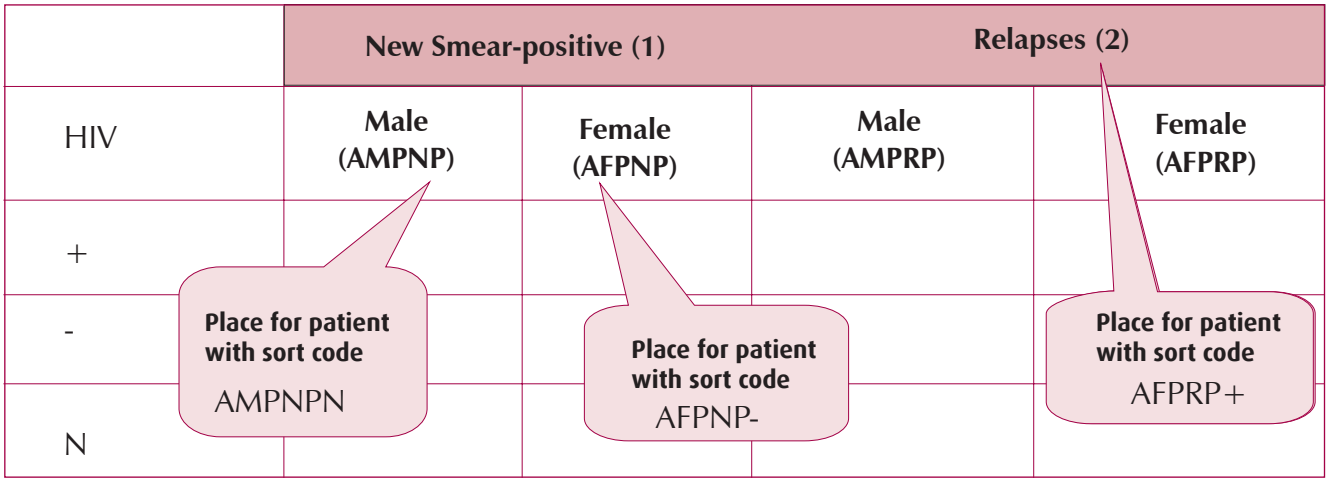
Quarter	Time of Reporting(TB07)	Patient Registered During
1	First week April, year	January 1 – March 31, year
2	First week July, year	April 1 – June 30, year
3	First week October, year	July 1 – September 30, year
4	First week January, year	October 1 – December 31, year

BLOCK 1: - *use worksheet for block 1*

The Worksheet

To help the counting of the different groups of patients to fill the form, a worksheet has been designed and is shown on the following pages.

For Block 1 there is a worksheet for adults and another for children. Each worksheet has the same columns as Form ***TB07. – 7*** for adults and 4 for children. Each column is further divided into two by sex and in each of these columns are the first 5 letters of the sort code for that column. The last characters of the sort code are shown in the second column of the worksheet labelled ***"HIV"***. A patient is counted by a combination of the column and rows into which his/her sort code fits. For example, a patient whose sort code is **AMPNP+** is located in the AMPNP column and the "+" row which is the first row in that column and the patient with sort code of **AMPNPN** is located in the third row of the **AMPNP** column. The Figure below shows more examples.



Filling the worksheet

- Locate the pages of the TB register you need to review for the quarter being reported. That is, find the page and correct lines of the first and last patients within the dates being reported on. A line above the first patient and one below the last patient may be drawn to help differentiate the quarter from the others.

- Use a sheet of paper to cover the rows below the line of the first patient in that quarter. Slowly move the paper down one row at a time to analyse and record each patient's information and move on to the next patient.

- For each patient write the sort code at the remarks column by looking at the six characteristics of age, sex, disease classification, type, and sputum and HIV test results. Do that for all patients in that quarter.

- Start again at the first patient in that quarter. For each patient, note the sort code and record the patient in the worksheet, by putting a tally mark (/) in the appropriate box for the sort code. For example if patient is coded as ***AMPRP+***, put a tally mark (/) in the first row of the column titled as male smear-positive relapses (i.e. AMPRP) in the worksheet. If next patient in the list is coded as ***AFPNNN***, then put a tally mark in the N row of the column titled as female smear-negative ***(i.e. AFPNN)*** in the worksheet.

- There are differences in the columns of adults and children and therefore it is best to record the two separately. There are therefore different worksheet for adults and children.

- All patients on the first page of the TB03 register being reviewed should be recorded (one-by-one) in row A of the worksheet for Block 1. Similarly repeat the counting/recording for the rest of the pages of the TB Register (already identified for the quarterly report).

- Add together the tally marks in each of the "+", "-"and "N" rows of each column of the worksheet to get the total numbers for each column of the quarterly report and record these in the TOTAL rows in the worksheet.

- Record these figures in the appropriate column and rows of Block 1 of the quarterly report on case finding of new and re-treatment cases (TB07) and calculate the totals.

- Repeat the above steps for children (<15 years)

GHANA NATIONAL TB CONTROL PROGRAMME
WORKSHEET BLOCK 1A (for TB07): ADULT NEW CASES AND RE-TREATMENTS

		New Smearr-positive		Relapses		Return After Default		Treatment Failure		New Smearr-negative		New Extraa-pulmonary		Other	
Page	HIV	Male *(AMPNP)*	Female *(AFPNP)*	Male *(AMPRP)*	Female *(AFPRP)*	Male *(AMPDP)*	Female *(AFPDP)*	Male *(AMPFP)*	Female *(AFPFP)*	Male *(AMPNN)*	Female *(AFPNN)*	Male *(AMENN)*	Female *(AFPNN)*	Male *(AMPOP)*	Female *(AFPONN)*
1	+														
	-														
	N														
2	+														
	-														
	N														
3	+														
	-														
	N														
4	+														
	-														
	N														
TOTAL	+														
	-														
	N														

GHANA NATIONAL TB CONTROL PROGRAMME
WORKSHEET BLOCK 1B (for TB07): CHILDREN NEW CASES AND RE-TREATMENTS

		New Smear positive		New Smear-negative		New Smear not determined/known		New Extra-pulmonary	
		Male *(CMPNP)*	Female *CFPNP)*	Male *(CMPNN)*	Female *CFPNN)*	Male *(CMPNT*	Female *(CFFPNT*	CMENN	CFENN
Page	HIV								
1	+								
	-								
	N								
2	+								
	-								
	N								
3	+								
	-								
	N								
4	+								
	-								
	N								
TOTAL	+								
	-								
	N								

WORKSHEET BLOCK 2 (for TB07): SMEAR-POSITIVE NEW CASES

Page	HIV	Age-group (years)																TOTAL		
		0 - 4		5 - 14		**15-24**		25-34		35-44		45-54		55-64		65+				
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
1	+																			
	-																			
	N																			
2	+																			
	-																			
	N																			
3	+																			
	-																			
	N																			
4	+																			
	-																			
	N																			
TOTAL	+																			
	-																			
	N																			

BLOCK 2: *use worksheet for Block 2*

- The same pages of the TB register that were used for block 1 are used again for Block 2. However only the new smear-positive cases of pulmonary tuberculosis of all ages are included in Block 2.
- Identify the new smear-positive cases of pulmonary tuberculosis i.e. AMPNP, CMPNP, AFPNP and CFPNP
- Use a sheet of paper to cover the rows. Slowly move the paper down one row at a time.
- For each new smear positive patient, note the age and record the patient in the table below, by putting a tally mark (/) in the appropriate box for the patient's sex, HIV status and age group. For example if a patient is coded as MPNP and is 20 years old, put a tally mark (/) in the column male 15-24 years in the table below. If another patient a female (coded FPNP) and 60 years old, then put a tally mark in the column female 55-64 years in table below.
- All patients recorded as new smear positive on the first page of the TB03 Register being reviewed are recorded (one-by-one) in row 1 of the above table.
- Similarly, repeat the counting/recording for patients coded as MPNP or FPNP on other pages of the TB03 register being reviewed.
- Add together the tally marks in each column of the above table to get total numbers for each column of the quarterly report.

- Record these figures in the appropriate column of Block 2 (TB07) and calculate the total.

Repeat the above procedure for other categories of TB cases and record the results at the reverse of the TB07

WRITTEN EXERCISES

INTRODUCTION

The following exercise is to enable us to practise using the worksheets to extract information from the TB register and to complete the quarterly report on case finding of new and re-treatment cases (TB07) form.

This process can be a bit confusing at first but, when you have practised the skills, you will find it very easy. If you have trouble with this exercise discuss with your colleagues and the facilitator. Make sure you really understand and can correctly complete the quarterly report on case finding of new and re-treatment cases (TB07) form. Refer to page 117 of workbook.

KEY POINTS

The TB07 is the quarterly reporting form used to report the details of new and re-treatment cases of TB

Transferred-in cases should not be reported on the quarterly reporting form (TB07)

The aim of the quarterly reporting form TB07 is to allow TB coordinators at all levels to monitor the diagnostic procedures of the TB Programme. This is done by comparing each quarter's data with previous data from that area, expected percentages and percentages from neighbouring areas.

The TB07 may appear to be complicated at first, but, if completed in the order and method described, it is simple and straightforward.

TASK 2: QUARTERLY REPORTING ON SMEAR CONVERSION

Another report that can be prepared every quarter is the 'Quarterly Report on Smear Conversion'. This can be an important report in the routine recording and reporting system of TB Control Programme but is not one of the standard WHO reporting forms. Hence not all TB programmes use this form.

The report indicates how many pulmonary smear positive cases, registered 3 to 6 months earlier, have been converted to smear negative (or have died, or defaulted or transferred to another diagnostic centre) at the completion of the planned intensive phase of their treatment. Included in the pulmonary smear positive cases are the new and relapse cases and those classified as 'other re-treatment'.

The report also tells how many sputum smear negative cases, registered 3 to 6 months earlier, have died, or defaulted, or transferred out by the completion of the planned intensive phase of their treatment. The report includes important indicators that can alert us to the diagnostic and treatment arrangements that are or are not working effectively. The report also identifies early defaults and deaths among registered TB patients. The report is useful as it gives an early indication of the success of the treatment regimes and TB programme. Without the report problems may not be picked up until the end of treatment many months later.

The report is produced by extracting data on new and re-treatment cases from the quarterly report on case finding (the TB07 studied in the previous section). This is done at the district level during the first week of every quarter.

The report is examined by the district TB co-ordinator who identifies problem areas and then presented to the district health management team.

An example of a Quarterly Report of Smear Conversion is given on the following page. Have a look at it now.

National Tuberculosis Programme

QUARTERLY REPORT ON THE SPUTUM CONVERSION AFTER 2 AND/ OR 3 MONTHS TREATMENTS OF PULMONARY TUBERCULOSIS SMEAR-POSITIVE PATIENTS REGISTERED 3 TO 6 MONTHS EARLIER

Name of District: _____ District No: _____ Name of Diagnostic Centre:_____	Patients registered during ☐ Quarter of 20	Date of completion of this form: _____ Signature:_____

Patients Registered* (1)			Category Case Definition (2)		Smear Positive(4)	Smear Negative(3)	Died (5)	Defaulter (6)	Tranfered (7)	Total Patients Evaluated (8)
New Cases			1. New Cases: 1. 1 Smear-Pos	HIV+						
M	F	T**		HIV-						
				Not Done						
			1. 2 Smear-Neg	HIV+						
				HIV-						
				Not Done						
Re-treatments			2. Re-treatments 2.1 Relapses	HIV+						
M	F	T**		HIV-						
				Not Done						
			2. 2 Others Retreatments#	HIV+						
				HIV-						
				Not Done						
			Total	HIV+						
				HIV-						
				Not Done						

* From the quarterly Report New Cases and Re-treatments (TB07)
**Of the Cases _____ (number) were excluded from evaluation of chemotherapy because: Others
Re-treatments include: return after default, treatment after failure, and smear-positive with H/o more than 4 weeks drug intake in the past

Understanding the quarterly report on smear conversion (TB08B) form

The top part of the form contains general information about the diagnostic or treatment centre and district. It allows the regional programme to quickly determine which district and quarter is being reported on.

The ***lower*** part of the form is divided into eight columns.

1. Patients Registered: The number of new (smear positive and negative) and re-treatment cases (relapse and other re-treatments) registered during the quarter being reported on are taken from the quarterly report on new cases and re-treatments for the quarter being reported on ***(i.e. column 1, 2 and 3 of TB07).*** **Columns "M" and "F"** are meant for recording the number of male and female patients, whereas column **"T"** is meant for recording the total number of male and female patients.

2. ***Case definition:*** This section shows the details of TB patients at beginning of treatment. The column is divided into two sections: New cases (1) and Re-treatment (2). Each section is further subdivided into two sub-sections: New cases (1) is divided into smear positive (1.1) and smear negative (1.2), and Re-treatment (2) is subdivided into relapse (2.1) and other re-treatment (2.2), which includes treatment after failure, treatment after default etc. No entry is required in any of the boxes in this column.

3. ***Smear Negative:*** This refers to the numbers of cases who are smear negative at the end of intensive phase. This is recorded separately for new cases (smear positive and negative) and re-treatments (relapses and other re-treatments).

4. ***Smear Positive:*** This refers to the number of patients who are found to be smear positive at the completion of 2nd or 3rd month of treatment. This is recorded separately for new cases (smear positive and negative) and re-treatments (relapses and other re-treatments). Note that a box for smear negative new cases at diagnosis has been included although it is hoped none will have become sputum positive. This means that all PTB cases should have sputum examined at end of the intensive phase.

5. ***Died:*** Number of patients (out of those under review) who died during the period being reported on.

6. ***Defaulted:*** Number of patients (out of those under review) who defaulted during the period being reported on.

7. ***Transferred Out:*** Number of patients (out of those under review) who were transferred out to another diagnostic centre during the period being reported on.

8. ***Total Patients Evaluated:*** Total number of patients evaluated (i.e. sum of columns 3, 4, 5, 6, and 7).

The bottom of the form contains a space to write the number of cases excluded from the evaluation and the reasons why they were excluded.

Completing the quarterly report on smear conversion (TB08B) form

THE TOP SECTION:

The name of the diagnostic or treatment centre, date of completion of the form (day/month/year), signature of the in-charge of the diagnostic or treatment centre, name and number of the district are recorded in spaces provided.

The quarter and the year being reported on is recorded by using the following table:

Time of Reporting (TB08B)	Patients Registered During
First week April, 2011 (Second quarter 2011)	October 1 – December 31, 2010 (i.e. quarter 4, 2010)
First week July, 2011 (Third quarter 2011)	January 1 – March 31, 2011 (i.e. quarter 1, 2011)
First week October, 2011 (Fourth quarter 2011)	April 1 – June 30, 2011 (i.e. quarter 2, 2011)
First week January, 2012 (First quarter 2011)	July 1 – September 30, 2011 (i.e. quarter 3, 2011)

THE LOWER SECTION:

The pages of the TB03 register to be reviewed for the quarter are located by examining the "date of registration" column and identifying the pages with cases registered during the quarter 3 to 6 months (or two quarters) earlier. The cases included in this review include smear-positive and smear negative new cases of pulmonary tuberculosis, relapses and other re-treatment cases.

Four separate worksheets are used to analyse four patient groups included in TB08B:

- new smear positive cases (TB08B: row 1.1)
- new smear negative cases (TB08: row 1.2)
- relapses (TB08: row 2.1)
- other re-treatment (TB08: row 2.2).

We will now consider each of these in detail.

New Pulmonary Smear Positive Cases (row 1.1): Worksheet: New Pulmonary Smear-Positive Case (MPNP & FPNP)

Pages of Register	HIV Status	Smear negative	Smear Positive	Died	Defaulted	Transferred Out	Total
A	HIV+						
	HIV-						
B	HIV+						
	HIV-						
C	HIV+						
	HIV-						
D	HIV+						
	HIV-						
Total	HIV+						
	HIV-						

- Identify the new smear positive cases of pulmonary tuberculosis i.e. patients coded as "MPNP" and "FPNP" in TB03.
- Use a sheet of paper to cover the TB03 rows. Slowly move the paper down one row at a time.
- For each patient coded as MPNP or FPNP, note the smear result at end of 2nd or 3rd month and record the patient in the worksheet, by putting a tally mark (/) in the appropriate box for patient's smear result. For example if patient is coded as MPNP and is found smear negative at end of 2nd or 3rd month, put a tally mark (/) in the column smear negative in the worksheet. If another patient coded as FPNP and is found sputum smear positive at end of 2nd or 3rd month, then put a tally mark (/) in the column smear positive in the worksheet. If the sputum is positive at 2nd month but negative at 3rd month, then put the tally mark (/) in the smear negative column.
-

- All patients coded as MPNP or FPNP on the first page (being reviewed) of TB03 are recorded (one-by-one) in the row A of above worksheet.
- Repeat similar counting/recording for patients coded as MPNP or FPNP on other TB03 pages included in the review period.
- Add together the tally marks (/) in each column of the above worksheet to get numbers for the boxes in row 1 of quarterly report on sputum conversion.

New Pulmonary Smear Negative Cases (row 1.2)
Worksheet: New Pulmonary Smear-Negative Case (MPNN & FPNN)

Pages of Register	HIV Status	Smear negative	Smear Positive	Died	Defaulted	Transferred Out	Total
A	HIV+						
	HIV-						
B	HIV+						
	HIV-						
C	HIV+						
	HIV-						
D	HIV+						
	HIV-						
Total	HIV+						
	HIV-						

- Identify the new smear negative cases of pulmonary tuberculosis i.e. patients coded as **"MPNN" and "FPNN"** in TB03.
- Use a sheet of paper to cover the TB03 rows. Slowly move the paper down one row at a time.
- For each patient coded as **MPNN or FPNN**, note the smear result at end of 2nd or 3rd month and record the data in the worksheet, by putting a tally mark (/) in the appropriate box for patient's smear result. For example if patient is coded as **MPNN** and is found smear negative at end of 2nd or 3rd month, put a tally mark (/) in the column smear negative in the worksheet. If another patient coded as **FPNN** and is found sputum smear positive at end of 2nd or 3rd month, then put a tally mark (/) in the column smear positive in the worksheet.
- For patients coded as **MPNN or FPNN** whose smear result at the end of 2nd or 3rd month are not recorded in TB03, also look at the treatment outcome section of the TB Register. This is to find out and report the patients who have died, defaulted or transferred out within first 2nd or 3rd month of their treatment.
- All patients coded as **MPNN or FPNN** on the first page (being reviewed) of TB03 are recorded (one-by-one) in the row A of above worksheet.

- Repeat similar counting/recording for patients coded as **MPNN or FPNN** on other TB03 pages included in the review.
- Add together the tally marks in each column of the above worksheet to get numbers for the boxes in row 2 of quarterly report on sputum conversion.

Pulmonary Relapse Smear-Positive Cases (row 2.1): Worksheet: Relapse - Pulmonary Smear-Positive Cases (MPRP & FPRP)

Pages of Register	HIV Status	Smear negative	Smear Positive	Died	Defaulted	Transferred Out	Total
A	HIV+						
	HIV-						
B	HIV+						
	HIV-						
C	HIV+						
	HIV-						
D	HIV+						
	HIV-						
Total	HIV+						
	HIV-						

- Identify the relapse cases of pulmonary tuberculosis i.e. patients coded as **"MPRP" and "FPRP"** in TB03.
- Use a sheet of paper to cover the TB03 rows. Slowly move paper down one row at a time.
- For each patient coded as M**PRP or FPRP,** note the smear result at end of 3 months and record the data in the worksheet, by putting a tally mark (/) in the appropriate box for patient's smear result. For example, if patient is coded as MPRP and is found smear negative at end of 3rd month, put a tally mark (/) in the column smear negative in the worksheet. If another patient coded as FPRP and is found sputum smear positive at end of 3 months, then put a tally mark (/) in the column smear positive in the worksheet.
- For patients coded as **MPRP or FPRP** whose smear result at the end of 3 months are not recorded in TB03, look at the treatment outcome section of TB Register. This is to find out and report the patients who have died, defaulted or transferred out within first 3 months of their treatment.
- All patients coded as **MPRP or FPRP** on the first page (being reviewed) of TB03 are recorded (one-by-one) in the row A of above worksheet.
- Repeat similar counting/recording for patients coded as **MPRP or FPRP** on other TB03 pages included in the review.

- Add together the tally marks in each column of the above worksheet to get numbers for the boxes in row 3 of quarterly report on sputum conversion.

Pulmonary Other Re-treatment Smear-Positive Cases (row 2.2): Worksheet: Other Re-treatment - Pulmonary Smear-Positive Cases (MPOP & FPOP)

Pages of Register	HIV Status	Smear negative	Smear Positive	Died	Defaulted	Transferred Out	Total
A	HIV+						
	HIV-						
B	HIV+						
	HIV-						
C	HIV+						
	HIV-						
D	HIV+						
	HIV-						
Total	HIV+						
	HIV-						

- Identify the other re-treatment cases of pulmonary tuberculosis i.e. patients coded as "**MPOP**" and "**FPOP**" in TB03.
- Use a sheet of paper to cover the TB03 rows. Slowly move the paper down one row at a time.
- For each patient coded as **MPOP** or **FPOP**, note the smear result at end of 3 months and record the data in the worksheet, by putting a tally mark (/) in the appropriate box for patient's smear result. For example, if patient is coded as **MPOP** and is found smear-negative at end of 3rd month, put a tally mark (/) in the column smear-negative in the worksheet. If another patient coded as **FPOP** and is found sputum smear-positive at end of 3 months, then put a tally mark (/) in the column smear-positive in the worksheet.
- For patients coded as **MPOP** or **FPOP** whose smear result at the end of 3 months are not recorded in TB03, look at the treatment outcome section of TB Register. This is to find out and report the patients who have died, defaulted or transferred out within first 3 months of their treatment.
- All patients coded as **MPOP** or **FPOP** on the first page (being reviewed) of TB03 are recorded (one-by-one) in the row A of above worksheet.
- Repeat similar counting/recording for patients coded as **MPOP** or **FPOP** on other TB03 pages included in the review.
- Add together the tally marks in each column of the above worksheet to get numbers for the boxes in row 4 of quarterly report on sputum conversion.

KEY POINTS

The quarterly report on smear conversion provides information on whether or not the diagnostic and treatment arrangements are working effectively.

The main indicators used are the smear conversion rate among sputum positive cases and the proportion of patients who die, default or are transferred out before the 2nd/3rd month of treatment

The report allows the TB Co-ordinator to monitor the treatment of patients registered with the programme. This is done by comparing each quarter's data with previous data from that area, expected percentages and percentages from neighbouring areas.

Having identified variations/problems the Regional TB Coordinator can then investigate the problem and identify ways of addressing the problems.

TASK 3: QUARTERLY REPORT ON TREATMENT RESULTS

The quarterly report on treatment results (TB08) is another important report in routine recording and reporting system of TB Control Programme. The report tells how many of the pulmonary tuberculosis cases have successfully or unsuccessfully completed their treatment out of the total registered 12 to 15 months earlier. Patients transferred in and chronic TB should not be included. Patients transferred in were already reported in the district where they were registered at the beginning of treatment. Chronics have not appeared during the quarter and should be counted separately once a year to know their prevalence.

The successful treatment results include cured and treatment completed, whereas unsuccessful treatment results include treatment failure, defaulter, died, transferred out. Transferred out is counted as unsuccessful as we cannot be sure what happened to the patient after leaving our programme. It is the aim of the programme that as much as possible the number of transferred out should be minimised by returning the treatment outcome report section (Part C) of the TB Referral and Transfer form (TB09) to the originating health facility and also reconciliation of the results be made at district and regional programme meetings.

Once again the report is produced by extracting data from TB Register (TB03). The section of TB03 to be reviewed is located by examining the "date of registration" column and identifying the pages with cases registered during the quarter 12 to 15 months earlier. In other words, we are reporting on cases who have had enough time to complete their treatment.

The report includes important indicators that can alert us as to whether the treatment arrangements are effectively working or not. The reports are examined by the district TB co-ordinator who then checks the completeness and consistency of the reports and looks for problems. The report will also be presented to the district health management team. Then all the reports from the various districts will be forwarded to regional and national TB offices. A copy of the treatment results report is given on the next page.

Note that we have again included the sort codes used earlier for the purpose of the training although these do not appear on the original NTP form.

Understanding the quarterly report on treatment results (TB08) form

The top part of the form is for general information about the diagnostic or treatment centre, district and region. It allows the regional programme to quickly determine which district and quarter data are reported.

The ***lower*** part of the form is divided into two blocks: Block 1 is the Quarterly Report on TB Treatment Outcomes for all Cases (irrespective of HIV status) and Block 2 which is the Quarterly Report on TB Treatment Outcomes for HIV+ Patients.

Each block is divided into nine columns.The first two columns which are without numbers are:

- Type of Case (Category). This describes the various treatment categories. The column is divided into the following sections and subsections:

1. New cases

1.1. New Sputum Smear Positive

1.2. New Sputum Smear Negative

1.3. Extrapulmonary TB

2. Re-treatment.

2.1. Relapse

2.2. Treatment after Failure

2.3. Return after Default

3. Other previously treated cases

No entry is required in any of the boxes in this column.

- Total Number of patients registered in the quarter: The figures for the different treatment categories reported on during that quarter is taken from the quarterly report on new cases and relapses for that quarter being reported (i.e. columns 1, 2 and 3 of TB07 completed some months ago).

  The next six columns in TB08 correspond to the six treatment outcomes in the 'Treatment Outcome' section of the TB Register (TB03). These six columns are here numbered from 1 to 6.

- The last column on the form is to record total number of cases evaluated (i.e. sum of columns 1 – 6).

The bottom of the form contains space to write the number of cases excluded from evaluation and the reasons why they were excluded. These latter patient do not have an outcome for reasons such as:

- The diagnosis was changed from TB to something else
- The patient was still on treatment
- The out come is simply unknown.

Completing the quarterly report on case finding of new and re-treatment cases (TB08) form

THE TOP SECTION:

The name of diagnostic or treatment centre, date of completion of form (day/month/year), signature of in-charge at diagnostic or treatment centre, name and number of district are recorded in the given spaces.

The quarter and the year under reporting is recorded by using the following example in the table:

Time of Reporting (TB08B)	Patients Registered During
First week April, 2012	January 1 – March 31, 2011 (i.e. quarter 1, 2011)
First week July, 2012	April 1 – June 30, 2011 (i.e. quarter 2, 2011)
First week October, 2012	July 1 – September 30, 2011 (i.e. quarter 3, 2011)
First week January, 2013	October 1 – December 31, 2011 (i.e. quarter 4, 2011)

THE LOWER SECTION:

The located pages of the TB Register (TB03) for the quarter under reporting are reviewed. The cases to be reviewed are the smear-positive and smear-negative new cases of pulmonary tuberculosis and relapses and other re-treatment cases.

Again to facilitate analysis and allocation of patients to their respective groups worksheets have been developed. Each treatment category is recorded separately so that 7 worksheets, one for each treatment category, need to be used. To simplify this, a generic worksheet, produced by the programme, is shown in the next page.

The treatment category for each row of the TB08 form is written on top of the each of the seven worksheets. For each treatment category two worksheets are used: one for all patients and the other for those HIV positive.

Again, use of the sort codes for each patient is made to help group the patients. In this analysis, patients are not grouped by age so that the first letter of the previous sort code (A or C) written in the TB03 register is ignored.

GHANA NATIONAL TB CONTROL PROGRAMME
WORKSHEETS FOR QUARTERLY REPORTING ON TREATMENT RESULTS

Type of Case (Category) _____ Sort Codes

All Cases

Page of Register	Cured	Treatment Completed	Died	Failure	Defaulted	Transferred Out	Total Evaluated
A							
B							
C							
D							
Total							

HIV+ Cases

Page of Register	Cured	Treatment Completed	Died	Failure	Defaulted	Transferred Out	Total Evaluated
A							
B							
C							
D							
Total							

GHANA NATIONAL TB CONTROL PROGRAMME
WORKSHEETS FOR QUARTERLY REPORTING ON TREATMENT RESULTS

Type of Case (Category) **New Pulmonary Smear-Positive Cases** **Sort Codes** **A/CMPNP A/CFPNP**

All Cases

Page of Register	Cured	Treatment Completed	Died	Failure	Defaulted	Transferred Out	Total Evaluated
A							
B							
C							
D							
Total							

- Identify all new smear positive cases of pulmonary tuberculosis i.e. patients coded as **"A/CMPNP" and "A/CFPNP"** irrespective of HIV status in TB03.
- Use a sheet of paper to cover the TB03 rows. Slowly move the paper down one row at a time.
- For each patient coded as **A/CMPNP or A/CFPNP**, note the treatment outcome and record the data in the worksheet, by putting a tally mark (/) in the appropriate box for patient's treatment result.
- For example if patient is coded as **A/CMPNP** and is found cured, put a tally mark (/) in the column cured (1) in the worksheet. If another patient coded as **FPNP** and is recorded failure at end of 5 months, then put a tally mark in the column "failure" in the worksheet.
- Treatment results of all patients coded as **A/CMPNP or A/CFPNP** on the first page (being reviewed) of TB03 are recorded (one-by-one) in the row A of above worksheet.

- Repeat similar counting/recording for patients coded as **A/CMPNP or A/CFPNP** on other TB03 pages included in the review.
- Add together the tally marks in each column of the above worksheet to get numbers for the boxes in row 1 of quarterly report on treatment outcomes.
- Repeat the above steps for HIV positive patients with sputum smear positive, i.e. those with sort code **A/CMPNP+ and A/CFPNPP+**

Repeat the above steps for each row of treatment category in the TB08 form. Use the following sort codes for these:

TYPE OF CASE (Category)		SORT CODES
1. NEW	1.1. Sputum Smear Positive	A/CMPNP+, A/CMPNP-, A/CMPNPT, A/CFPNP+, A/CFPNP-, A/CFPNPT
	1.2. Sputum Smear Negative	A/CMPNN+, A/CMPNN-, A/CMPNNT, A/CFPNN+, A/CFPNN-, A/CFPNNT
	1.3. EPTB	A/CMENN+, A/CMENN-, A/CMENNT, A/CFENN+, A/CFENN-, A/CFENNT
2. RE-REATMENT	2.1. Relapses	A/CMPRP+, A/CMPRP-, A/CMPRPT, A/CFPRP+, A/CFPRP-, A/CFPRPT
	2.2. Treatment after falure	A/CMPFP+, A/CMPFP-, A/CMPFPT, A/CFPFP+, A/CFPFP-, A/CFPNFT
	2.3. Return after default	A/CMPDP+, A/CMPDP-, A/CMPDPT, A/CFPDP+, A/CFPDP-, A/CFPDPT
	3. Other Previoulsy treated	A/CMPON+, A/CMPON-, A/CMPONT, A/CFPON+, A/CFPON-, A/CFPONT

WRITTEN EXERCISES

INTRODUCTION

The following exercise is to enable us to practise using the worksheets to extract information from the TB register and to complete the quarterly report on treatment results (TB08) form.

You are the TB Co-ordinator at the diagnostic centre. During the first week of October 2011, you are required to prepare the treatment results of patients who were registered in the 3rd quarter of 2010. Use the TB03 data provided before and worksheets (given below) to complete the quarterly report on treatment outcomes.

Part A

Compile the data from the TB register given previously by using the four worksheets given below. Refer to page 127 of workbook.

KEY POINTS

The quarterly report on treatment results provides information on the number of patients who have successfully completed their treatment.

The report includes important indicators that can alert us that the treatment arrangements are working/not working effectively.

The main indicators used are the cure rates, treatment completion rates, treatment failure rates for all patients, in addition to the proportion of patients who die, default or who are transferred out at the end of treatment.

During this session we have been studying how:

To monitor the TB programme and ensure it is running efficiently.

To do this we have learnt how to complete the:

1. Quarterly reporting on case finding
2. Quarterly reporting on smear conversion
3. Quarterly reporting on treatment results

If, as a result of completing this session, you are able to carry out this activity you will have achieved your learning objective. If you still feel unsure about certain aspects of what we have learnt then do not worry. As mentioned before we may need to practise some aspects further, after the course has finished.

Make a note of the aspects that you feel you would benefit from more practice so that you will be able to focus on these at a later date.

The areas in which I need more study are:

-
-
-
-

MOVING FORWARD AS A TEAM

Welcome to the final chapter of the "training course for integrated TB care". Since starting the course we have learnt a lot about our new TB programme and our role within it. It has been hard work but we hope it has also been fun!

What we know is that your participation on this course, and the implementation of what you have learnt, will help many people in the fight against TB. Thank you for your time, effort and enthusiasm.

In this final chapter we are going to review what we have learnt and then look to the future implementation of the TB programme.

LEARNING OBJECTIVES

At the end of this chapter the participants should be able to:

- Commit to working together as a team
- Review the most important messages we have learnt
- Consider 'The Next Step'.

TASK 1: COMMIT TO WORKING TOGETHER AS A TEAM

Good control of TB is based on different health care providers performing their individual roles in the TB care process, as well as each person working to the best of their ability. It is important that they work together as a team.

Communication between team members is important for the team to work well and be successful. As a team, health care providers can discuss their performance, raise any problems and together find solutions.

Although team members often keep in touch informally, discussing cases and delivering messages as the need arises, it is also very important that the team meets regularly to formally review their progress. This is particularly important where there are multiple partners involved in controlling TB, for example government, NGO, the private sector and other organisations.

Every month, the team members at each health facility should meet and hold a facility review meetings, including a review of TB services.It is best if this is held at the same time every month.

At a diagnostic centre the meeting will include the:

- DDHS
- Medical Superintendent
- Institutional Public Health Nurse
- TB co-ordinator
- Nurse, Clinician
- Laboratory I/C
- Pharmacist I/C

At a treatment centre the meeting may include:

- ***Health Centre I/C***
- ***Disease Control Officer***
- ***Nurse***
- ***TB co-ordinator***
- ***Local CHOs***
- ***Dispensary technician***
- ***Treatment supporter e.g. a family member, trained NGO etc***

Each meeting should have a chairperson and a secretary to record the minutes of the meeting. The actual person who acts as chairperson and secretary may be the same each time or may rotate around the group. The meeting should review the different aspects of the programme. Any problems identified should be seen as problems for the whole team and blame should not be allocated to one particular department or person. The team should as a group, look for the underlying causes of a problem and decide on how to tackle it.

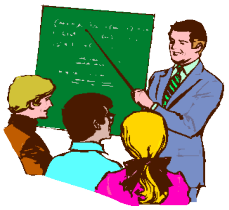
A good review meeting is one that is:

- Well organised
- A priority – this means it is not cancelled and all members attend
- Held regularly
- Reviews the minutes of the previous meeting, confirms what the agreed action was and discusses the effects of this action on the initial problem.
- Supportive

Non-threatening

At the meeting the chairperson should:

- Welcome everybody and make sure everybody knows everybody else.
- Read the minutes of the last meeting and ask those people who were to take action to report back (miss out this for the role play).
- Ask if anybody has issues they would like to raise at the meeting and list them
- Consider each of the new issues in turn, lead a discussion about the problem and how it can be solved.
- Every quarter review programme results:
  - ***Quarterly report on case finding***
  - ***Quarterly report on sputum conversion***
  - ***Quarterly report on treatment results***
- List the action that needs to be taken and who is responsible for these actions.
- Confirm the time and place of the next meeting.



GROUP DISCUSSION ABOUT ROLE-PLAY

After finishing the role-play, and discussing in your small groups, the participants of the course will all come together and have a group discussion about the role-plays. This discussion will be led by the facilitator.

Without knowing the exact characters you all chose to play it is not possible to identify the key points from this exercise. However the following points may have occurred:

- The meeting went well with all problems discussed and possible solutions found. Action points were allocated to each person to be addressed before the next meeting.

Alternatively:

- All the problems were mentioned but there was insufficient time to address all of them.
- There was insufficient time to address all of the problems and some were not even mentioned and recorded in the minutes.
- Problems were identified but no plan was made how to solve them.
- The chairperson was not able to control the meeting.
- One person dominated the meeting.
- One person hardly took part in the meeting.
- No minutes were taken.
- No time and date was set for the next meeting.

In the space below list any other issues that arose during this discussion.

TASK 2: REVIEWING THE IMPORTANT LESSONS

Of course, we think, and you may agree with us, that all of the lessons we have learnt during this course are important! If we hadn't thought a lesson was important we would have missed it out of the course. However it is useful to focus our attention on some of the most important aspects of the new TB programme.
Let us do a quick exercise.

In the space below make a note of the most important things you have learnt from the course. Before writing, think back over the whole course and look through the course book.

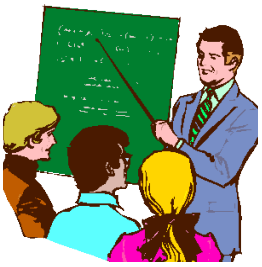
The most important lessons I learnt from the course are:

1.
2.
3.
4.
5.
6.

Now turn to your neighbour and discuss these points. Do not be surprised if your list is very different from your neighbours. We all have different experiences before coming to the course and will have known more about our own area than our colleagues. Similarly we will all have had a lack of knowledge of particular topics. Somebody may feel that the most important lesson was learning about TB drugs, someone else may have learnt more about communication skills and another about the process of helping a TB patient to look at the reasons why they defaulted from treatment and how these problems can be solved.

Now discuss which areas of the course were most difficult or were covered too quickly. Are there any topics which are still confusing or on which you would like further revision? List them.

-
-
-



GROUP DISCUSSION ABOUT LESSONS LEARNT AND OUTSTANDING PROBLEMS

This discussion will be led by the facilitator. Using the lists you have made, the whole class will compile similar lists – identifying those issues that were most commonly identified as important lessons and areas needing revision.

Record those lists here:

1. Issues most commonly identified as important lessons
2. Issues most commonly identified as areas needing revision.

As organisers of the course we have also thought of some important points that we think are worth reviewing.

1. The TB programme is a community based care centred.

This means that, as much as possible, the TB care is provided near the patient's home rather than at the health facility. This type of programme is much better. It means that patients do not have to stay in hospital longer than necessary. They do not have to travel long distances for their daily treatment. They can continue their normal working and family life as soon as their health status improved

2. The TB programme is an integrated one

This means that although different parts of the management of people with TB will occur at different levels in the health care delivery, all the levels are working in an integrated way. Good communication links between the patient, the treatment supporter, the treatment centre and the diagnostic centre are very important to ensure that this integration is successful. Every person involved in TB care is responsible for their 'link in the chain' that connects the patient to the TB programme.

3. Communication is vital

Communication is important at all levels of our TB programme:

- Good communication skills can ensure that the patient will understand their illness and how it can be successfully treated. A patient who understands these things is more likely to be successfully treated. Also if a patient is having problems with his treatment, he is more likely to come and ask for help if the health care provider is a good communicator.

- Clear lines of communication are needed between the different levels of the TB programme. This is especially important when we consider those levels in the community.

4. All patients will be treated according to the TB programme case management guidelines
   In order to provide a high quality TB services it is important that all health care providers involved in TB care are working with the same guidelines. Otherwise, if a TB patient moves from one level of the programme to another, confusion may arise. The case management guidelines have been carefully written to ensure the best care is provided.

5. Clear documentation is vital
   Every time we make notes about a consultation with a TB patient, or fill in some information on one of the TB programme card, we must be sure that we write clearly. This is because the notes and forms act as a means of transferring information between the different health workers as well as providing a means by which the TB programme can be monitored to ensure high quality.

6. This workbook should be used as a reference resource in our day-to-day work
   The end of the course does not mean the end for this workbook! There is so much information in this book we recommend that you keep it on the shelf at work and use it as a reference and guide if you encounter difficulties. Remember also that a copy of the TB programme case management desk aide will be on your desk for day-to-day use.

7. In many areas, the TB epidemic is closely related to the HIV/AIDS epidemic
   This is important as it means that many of our TB patients may also have HIV infection and we need to sensitively help them to recognise this possibility and help them to decide whether or not to have a test for HIV. Whether or not our patient has an HIV test, we must anticipate other problems, which might be due to HIV infection, and offer help and treatment appropriately. The association of HIV and TB also means that many more people in our community are vulnerable to the effects of TB. This means that we must be even more determined to diagnose and treat people with TB in order to prevent the spread of TB germ by untreated sputum positive cases.

TASK 3: THE NEXT STEP

Now, we have come to the end of our training course for the TB programme. We must look to the future and how the programme will be implemented.

As was stated at the beginning of the course there are different training sessions for the different types of health care providers who will be working in the TB programme. We must immediately begin to improve the quality of programme implementation.

In any new programme there are "teething" problems and for this reason the TB co-ordinators, Public Health Nurses, Community Health Nurses and Officers will be arranging a revision meeting for health care providers in their various facilities.. At this meeting you will be able to give feed back on your experiences of:

- ***managing TB patients***
- ***using the desk aide***
- ***contacting the DOT centre***
- ***communicating with patients***

You will also be able to report any difficulties you have been experiencing and by discussion with others involved in the TB programme, be able to find a solution to any challenges.

CONCLUSION

Our TB programme is based on similar TB programmes that have already been shown to be successful.
By implementing what we have learnt and by ensuring that we work together as a team, we will be able to make a difference in the TB care in our areas and the country at large.

No	Ashanti	Code
1	Adansi North	01/AND/12/___
2	Adansi South	01/ADS
3	AfigyaKwabre	01/AFK
4	Ahafo-Ano North	01/AAN
5	Ahafo-Ano South	01/AAS
6	Amansie Central	01/AMC
7	Amansie East	01/AME
8	Amansie West	01/AMW
9	Asante-Akim North	01/ASN
10	Asante-Akim South	01/ASS
11	Asante-Mampong	01/ASM
12	Atwima-Kwanwoma	01/ATK
13	Atwima-Mponua	01/ATM
14	Atwima-Nwabiagya	01/ATN
15	Bosome-Freho	01/BOF
16	Bosomtwe	01/BOS
17	Ejisu-Juaben	01/EJJ
18	Ejura-Sekodumasi	01/EJS
19	Kumasi	01/KUM
20	Kwabre	01/KWA
21	Obuasi	01/OBU
22	Offinso	01/OFF
23	Offinso North	01/OFN
24	Sekyere Central	01/SEC
25	Sekyere East	01/SEE
26	Sekyere South	01/SES
27	Sekyere-Afram Plains	01/SAP

No	BrongAhafo	Code
1	Asunafo North	02/AUN/12/__
2	Asunafo South	02/AUS
3	Asutifi	02/AST
4	Atebubu-Amanten	02/ATE
5	Berekum	02/BER
6	Dormaa	02/DOR
7	Dormaa East	02/DOE
8	Jaman North	02/JNO
9	Jaman South	02/JSO
10	Kintampo North	02/KPN
11	Kintampo South	02/KPS
12	Nkoranza North	02/NKN
13	Nkoranza South	02/NKS
14	Pru	02/PRU
15	Sene	02/SEN
16	Sunyani Municipal	02/SUN
17	Sunyani West	02/SUW
18	Tain	02/TAI
19	Tano North	02/TAN
20	Tano South	02/TAS
21	Techiman	02/TEC
22	Wenchi	02/WEN

No	Central	Code
1	Abura-Asebu-Kwamankese	03/AAK/12/_
2	Agona East	03/AGE
3	Agona West	03/AGW
4	Ajumako-Enyan-Essiam	03/AEE
5	Asikuma-Odoben-Brakwa	03/AOB
6	Assin North	03/AIN
7	Assin South	03/AIS
8	Awutu Senya	03/AWS
9	Cape Coast	03/CAC
10	Efutu	03/EFU
11	Gomoa East	03/GOE
12	Gomoa West	03/GOW
13	Komenda-Edina-Eguafo-Abirem	03/KEA
14	Mfantseman	03/MFA
15	Twifu-Hemang-Lower Denkyira	03/THL
16	Upper Denkyira East	03/UDE
17	Upper Denkyira West	03/UDW

No	Eastern	Code
1	Akwapim North	04/AKN/12/___
2	Akwapim South	04/AKS
3	Akyemmansa	04/AKM
4	Asuogyaman	04/ASG
5	Atiwa	04/ATI
6	Birim Central	04/BIC
7	Birim North	04/BIN
8	Birim South	04/BIS
9	East Akim	04/EAK
10	Fanteakwa	04/FAN
11	Kwaebibirim	04/KBR

No	Eastern	Code
12	Kwahu East	04/KWE
13	Kwahu North	04/KWN
14	Kwahu South	04/KWS
15	Kwahu West	04/KWW
16	Lower Manya-Krobo	04/LMK
17	New Juaben	04/NEJ
18	Suhum-Kraboa-Coaltar	04/SKC
19	Upper Manya-Krobo	04/UMK
20	West Akim	04/WAK
21	YiloKrobo	04/YIK

No	Greater Accra	Code
1	Accra	05/ACC/12/___
2	Adentan	05/ADE
3	Ashaiman	05/ASA
4	Dangme East	05/DAE
5	Dangme West	05/DAW
6	Ga East	05/GAE
7	Ga South	05/GAS
8	Ga West	05/GAW
9	Ledzekuku-Krowor	05/LEK
10	Tema	05/TEM

No	Northern	Code
1	Bole	06/BOL/12/__
2	Bunkpurugu-Yunyuo	06/BUY
3	Central Gonja	06/CGO
4	Chereponi	06/CHE
5	East Gonja	06/EGO
6	East Mamprusi	06/EMA
7	Gushegu	06/GUS
8	Karaga	06/KAR
9	Kpandai	06/KPD
10	Nanumba North	06/NAN
11	Nanumba South	06/NAS
12	Saboba	06/SAB
13	Savelugu-Nanton	06/SAN
14	Sawla-Tuna-Kalba	06/STK
15	Tamale	06/TAM
16	Tolon-Kumbungu	06/TOK
17	West Gonja	06/WGO
18	West Mamprusi	06/WMA
19	Yendi	06/YEN
20	Zabzugu-Tatale	06/ZAT

No	Upper West	Code
1	Jirapa	08/JIR/12___
2	lambussie	08/LAM
3	Lawra	08/LAW
4	Nadowli	08/NAD
5	Sissala East	08/SIE
6	Sissala West	08/SIW
7	Wa	08/WAU
8	Wa East	08/WAE
9	Wa West	08/WAW

No	Upper East	Code
1	Bawku	07/BKU/12/__
2	Bawku West	07/BAW
3	Bolgatanga	07/BOG
4	Bongo	07/BON
5	Builsa	07/BUI
6	Garu-Tempane	07/GAT
7	Kassena-Nankana	07/KAN
8	Kassena-Nankana West	07/KNW
9	TalensiNabdam	07/TAL

No	Volta	Code
1	Adaklu-Anyigbe	09ADA/12/__
2	Akatsi	09/AKA
3	Biakoye	09/BIK
4	Ho	09/HOV
5	Hohoe	09/HOH
6	Jasikan	09/JAS
7	Kadjebi	09/KAD
8	Keta	09/KET
9	Ketu	09/KEU
10	Ketu North	09/KEN
11	Kpando	09/KPA
12	Krachi East	09/KRE
13	Krachi West	09/KRW
14	Nkwanta	09/NKW
15	Nkwanta North	09/NWN
16	North Tongu	09/NTO
17	South Dayi	09/SDA
18	South Tongu	09/STO

No	Western	Code
1	Ahanta West	10/AHW/12/___
2	Aowin-Suaman	10/AOS
3	Axim	10/AXI
4	Bia	10/BIA
5	Bibiani-Anhwiaso-Bekwai	10/BAB
6	Ellembelle	10/ELL
7	Jomoro	10/JOM
8	Juabeso	10/JUA
9	Mpohor-Wassa East	10/MWE
10	Prestia-Huni-Valley	10/PHV
11	Sefwi-Akontombra	10/SEA
12	Sefwi-Wiawso	10/SEW
13	Sekondi-Takoradi	10/SET
14	Shama	10/SHA
15	Tarkwa-Nsuaem	10/TAR
16	Wassa-Amenfi East	10/WFE
17	Wassa-Amenfi West	10/WFW

Korle Bu Teaching Hospital	KBT/12/___
Komfo Anokye Teaching Hospital	KAT/12/___
Tamale Teaching Hospital	TTH/12/___