Government of India
Ministry of Health and Family Welfare
National AIDS Control Organization
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HIV/TB MODULE FOR HEALTH CARE WORKERS

May,2016

Vihaan
Care & Support

DOTS
Pura course, Pakka ilaaj

NACO

Central TB Division
Directorate General of Health services
Ministry of Health and Family Welfare
Government of India, New Delhi

Basic Services Division
National AIDS Control Organization
Ministry of Health and Family welfare
Government of India, New Delhi

Adapted from National Framework for HIV TB in India 2013, Integrated HIVTB module 2016 ,NACO-CTD ,MoHFW GOI and Vihaan program guidelines

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Background

The Global Fund supported Vihaan programme, implemented by India HIV/AIDS Alliance, works to expand access to essential services, increase treatment adherence, reduce stigma and discrimination, and improve the quality of life of people living with HIV (PLHIV), in collaboration with the National AIDS Control Organization (NACO)in 32 states in India. With treatment PLHIV have longer better life, but TB still remains the most common of the opportunistic infections. Out of the 2.1 million people living with HIV in India, 95,000 are co-infected with tuberculosis (NACO, 2015). Community-based outreach is the backbone of the Vihaan, serving as a comprehensive approach to provide support for retention in treatment, adherence, positive living, referrals to other health services, linkages to social welfare schemes, and strengthening enabling environment for PLHIV

Through an integrated approach of expanded HIV-TB services into Vihaan's, it is proposed to achieve the following objectives:

- Increase the screening among PLHIV and early detection of TB
- Immediate ART initiation of all PLHIV detected TB
- Improve and sustain treatment adherence of HIV-TB co-infected clients.

Purpose of the Module

Vihaan HIV-TB training module is developed in coordination with NACO and the Central TB Divisionto build the capacity of the staff of the programme's Sub Recipient partner organizations who in turn will train the staff of CSCs to address this key health priority. This training module covers the skills and strategies required in Vihaan staff at every level to ensure that HIV-TB co-infection is promptly and properly addressed. While emphasis is made on responding to the needs of clients at service level, the module will also describe coordination mechanisms developed at national, state and district level.

Learning Objectives:

- Understand the importance of strengthening HIV-TB coordination.
- Increase awareness on management of HIV-TB among PLHIV.
- Develop strategies to effectively work with the government, and enhance collaboration on the national and regional/state level.

How to Use the Module

The curriculum stresses participation. Depending on the objectives of each session, the existing expertise of participants, and availability of resources, one may choose to use all or just some of the sessions. Duration of sessions is described in each module. Each session outline contains a list of resources needed to run that session. Some understanding and knowledge of PLIHIV and other issues related to management of TB is desirable, but workshop facilitators do not need to be medical experts in HIV.

Intended Audience for the Module

These modules have primarily been developed to build the knowledge and skills of health care workers, community volunteers, program coordinators/ managers, counsellors, peer counsellors and outreach workers of NGOs and DLNs who work directly with PLHIV and Key communities.

In the context of Vihaan, the module will be useful to guide a trainer from an SR partner who will train the staff of sub-sub-recipient (SSR) NGOs / DLNs in key topic areas.

Table of Contents:

Activity Index:					
No.	**Activity Name**	**Time**	**Materials**	**Audio Visual Resources**	**Take Home Material**
Day One					
1	Introductory session: Objectives and methodology of this training module	60 minutes	· Pre-test forms · Chart / Colour pen · White board with marker pens	N/A	N/A
2	HIV-TB co infection and impact	180minutes	· Hand-out on Paediatric HIV-TB · Chart / Colour pen · White board with marker pens	Presentation on HIV-TB co-infection	Extra reading material on HIV-TB
(followed by lunch break)					
3	HIV-TB collaborative activites	120 minutes	· Chart / Colour pen · White board with marker pens	Presentation on HIV-TB coordination and structures at national, as well as state and district level	Extra reading material: national framework for joint HIV/TB collaborative activities
4	Tuberculosis – Identification, Diagnosis and treatmen	120 minutes	· Chart / Colour pen · White board with marker pens	Presentation on basics, diagnosis and treatment of TB; Directly Observed Treatment Short Course (DOTs)	Extra reading material: Intensified TB case finding (ICF)
Day Two					
5	Role of Care and Support Centres	180 minutes	· Operational Guidelines for Care and Support Centres, DAC (NACO), 2013 · Chart / Colour pen	PowerPoint slides titled Introduction to Vihaan – Setting the Context	N/A
6	Psychosocial Aspects of HIV/TB, counselling, pill burden and adherence	120 minutes	Extra reading material: Psychosocial aspects and management of HIV/TB co-infection	Presentation on Psychosocial Aspects of HIV/TB and adherence	N/A
(followed by lunch break)					
7	Reporting and documentation of HIV/TB activities at CSC level	180 minutes	M&E tools (K-format)	Slides titlereporting on HIV-TB	Vihaan HIV-TB implementation plan
1[1]Overhead projector, laptop, sound system and whiteboard should be made available for every training					

Session1. Introductory session: Objectives and methodology of training module

Learning objectives:

By the end of this session the participants will

- Get to know each other and the trainers
- Be aware of the objectives of the training
- Complete the baseline assessment of knowledge
- Decide on ground rules to be followed during training
- Address expectations of roles and concerns

Duration: 1 hour

Methodology: Discussion and sharing from participants

Materials and Methods:

- Small group discussion
- Pre-test forms
- Chart / Colour pen
- White board with marker pens

Training steps:

Welcome all participants. Sometime language could be observed as a barrier for a successful training in terms of 100% participation. Hence, if there is any language related issue, that needs to be taken care of by identifying possible options. For example, participants from same state could be requested to sit together for better understanding and if necessary they can help each other.

- To carry on the process, brainstorm with the participants “what do you think you will learn in this training”. Write points down on the White board/flip chart. Then introduce the main learning’s expected from the training

At the end of the training participants should:

- ✓ *Provide correct information on symptoms of TB and available diagnosis &treatment.*
- ✓ *Explain the effect of TB on HIV and effect of HIV on TB infection*
- ✓ *Clarify the myths and misconceptions related to TB*
- ✓ *Identify patients with symptoms suggestive of TB*
- ✓ *Refer the TB suspects to TB testing units for TB Investigations and further management.*
- ✓ *Be able to keep a record of patients referred from CSC to TB testing units.*
- ✓ *Motivate patients with symptoms suggestive of TB to undergo sputum examinations and any necessary examinations.*

- Get participants to introduce themselves using either one of the below methods:
  - ✓ Ask participants to introduce themselves (name, place, one hobby). The next person must first mention the name of the previous name and then introduce him/herself, the third person the first two names and then self...continue till the end.
  - ✓ They could also be told to find some “adjective” to describe the person based on the name, e.g. Swathi-Sweet/Simple/Silent
- Next discuss the whole agenda of the training. Name the different sessions and briefly mention the methodology – brainstorming, discussion, case studies, group work etc.
- Also make some ground rules to make the training successful. Tell the participants to come up with ground rules and list them on a flip chart.
- If there is any logistic related announcement that could be taken care too during this time.

Session 2.HIV-TB co infection and impact

Learning objectives:

By the end of this session, the participants will be able:

- Get an overview about TB burden (with special focus on HIV-TB) at national and global level
- To understand that People living with HIV are at a higher risk getting TB.
- To understand management of paediatric tuberculosis
- Get clarity on Revised National TB Control Programme
- To understand structure of RNTCP at national, state, as well as district level

Duration: 2 hours and 30 minutes

Methodology: Brain storming, presentations and sharing from participants

Materials and Methods:

- Presentation on HIV-TB co-infection
- Extra reading material on HIV-TB
- Hand-out on Paediatric HIV-TB
- Chart / Colour pen
- White board with marker pens

Training steps:

- Start the session by brainstorming with participants about what is the most occurring opportunistic infection after getting infected by HIV?
- Now discuss with the participants why it is important to get tested for TB after getting infected by HIV and also impact of HIV on TB.
- Explain to participants that amongst PLHIV, TB is the most common opportunistic infection. The mortality due to TB in AIDS cases is very high. People living with HIV and with TB have a higher risk of relapse and failure. HIV infected patients may have a higher risk of exposure to all forms of TB including drug resistant forms of TB, and are likely to have a higher rate of mortality than TB patients that are not HIV infected.

- Explain to participants that TB in children is indeed a “hidden epidemic” for many years because of number of challenges; particularly in resource-poor settings. Also because many children cannot cough up sputum for TB testing. Even when sputum from a child is available, TB is diagnosed only in 30% of cases. Highlight following facts and figures, referring to WHO, 2014; it estimates that every year:

✓ *Childhood TB accounts for 6% to 10% of all TB cases worldwide*
✓ *In countries with a high rate of TB disease, children account for as much as 40% of all new TB cases*
✓ *At least half a million children worldwide get sick with TB disease each year*
✓ *More than 74,000 children die from the disease each year.*
(Ask participants to refer to hand-out on paediatric HIV-TB for more clarity around it)

- Now it is time for the participants to get an overview about the Revised National TB Control Programme. Start the session by discussing that - India’s Revised National TB Control Programme is the largest TB Control Programme in the world, placing more than 100,000 patients on treatment every month.
- Ask the participants if they know already that Government of India provides free diagnostic and treatment services to all TB patients.
- Give participants 5 minutes to brainstorm on how TB cases are detected and referred for treatment under RNTCP. Mention that – the RNTCP laboratory network for sputum smear microscopy comprises a three-tier system of National Reference Laboratories (NRLs), Intermediate Reference Laboratories (IRLs) and Designated Microscopy Centres (DMCs) offering appropriate, affordable and accessible quality assured diagnostic services.
- Explain Treatment services provided under RNTCP to the participants
- Now, divide the participants into 4/5 groups and give them a group work for 10 minutes regarding structure of RNTCP at state level. Ask them to list –

✓ Different departments involved in the process
✓ Designated people who are involved in the process

After the presentation from each group, show the state structure of RNTCP and explain them.

- Next step is to give participants an overview about TB burden at national and global level. Start the session by giving basic facts and figures about TB and TB/HIV confection from global and national perspective
- Mention that globally India is at number one position in terms of TB incidence.
- Now, brainstorm with participants on ‘why TB and HIV are related to each other in terms of co-infection?’ Provide related and necessary data in this regard mentioned in the module (detailed reading section).

In a HIV-infected TB patient, the immune response to TB increases HIV replication. As a result of the increase in viral load in the body, there may be more rapid progression of HIV infection and patient starts developing symptoms of various opportunistic infections. Thus the health of the patient who has both diseases may deteriorate more rapidly than with HIV infection alone. In addition, TB treatment complicates ongoing HIV treatment because of pill burden, additional side effects, and drug-drug interactions.

Thus, the interaction of both the diseases results in:

- Increased load of active TB cases among PLHIV
- Difficulties in diagnosing TB among PLHIV due to atypical clinical presentation of TB disease
- Increased morbidity and mortality from TB among PLHIV
- High risk of TB transmission in HIV care settings, due to high TB load and concentrated presence of many vulnerable patients.

Burden of TB & HIV in India

TB is caused by a bacterium called as *"Mycobacterium Tuberculosis".* Mycobacterium tuberculosis can affect almost any part of the body. Almost 80% of the cases have tuberculosis of the lungs. Tubercle bacilli are generally present in the sputum of the pulmonary cases. When such patients cough or sneeze, the TB bacilli are released into the air in the form of tiny particles (droplets). A person who inhales these bacteria becomes infected with TB(TB infected) and may subsequently develop the disease. As mentioned previously a patient whose sputum shows presence of TB bacilli can infect others, if untreated. Thus it is of paramount importance to detect all cases of TB, especially sputum positive cases, in the early stages and treat them effectively.

TB -HIV global scenario:

- At least one-third of the 34 million people living with HIV worldwide are infected with latent TB. Persons co-infected with TB and HIV are 21-34 times more likely to develop active TB disease than persons without HIV
- In 2012, 1.1 million (13%) of 8.6 million people who developed TB worldwide were HIV-positive
- In the same year, 1.3 million died from TB, of which 320, 000 were people living with HIV

HIV problem in India

HIV:

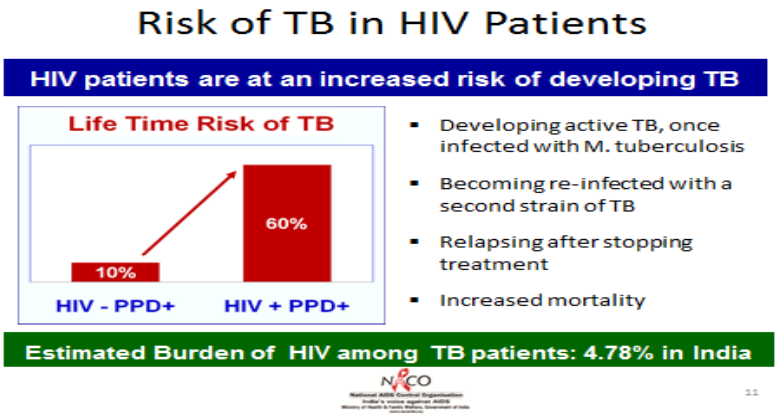
- *Estimated 2.1 million persons infected with HIV*
- *0.27% adult prevalence*
- *Heterogeneous distribution*

TB:

- *Estimated 2.2 million incident TB cases/yr*
- *5% of TB patients estimated to be HIV-infected with high mortality*

Impact of HIV on TB

HIV infection makes persons much more susceptible to developing TB disease, more likely to die from TB, and even more likely to develop TB again. An HIV infected person who is newly infected with TB is more likely to develop the TB disease as compared to an HIV non-infected person. The risk of developing TB in HIV infected person is many times higher as compared to the risk in HIV non-infected person. There are higher chances for death of HIV infected TB patients than HIV non-infected TB patients during or after treatment for TB. The risk of recurrence of TB even after successful TB treatment is much higher in HIV-infected persons.



The following consequences are likely to be seen wherever HIV and TB are both very common:

- Increased load of people with TB disease and burden on health services;
- Increased death and suffering in TB patients, from both TB and from HIV-associated opportunistic infections;
- Frequent adverse drug reactions;
- Delay of access to health services by TB suspects due to the stigma of HIV-AIDS;
- Spread of TB in health facilities that serve HIV-infected persons;
- Increased rates of TB recurrence.

Activities to reduce burden of HIV among TB patients:

- Provider initiated HIV testing and counselling (PITC) among TB patients
- Provision of co-trimoxazole preventive therapy (CPT) for HIV infected TB patients
- Provision of Anti-Retroviral Therapy (ART) for HIV infected TB patients
- Provision of HIV prevention education for patients with presumptive or diagnosed TB cases

Activities to reduce burden of TB among HIV infected individuals:

National Framework for HIV/TB Collaborative activities in India (Nov, 13) emphasises on 3 Is' :

- Intensified (TB) case finding (ICF) at ICTC ,ART centres ,Link ART centres ,TI sites
- Implementation of Isoniazid preventive treatment (IPT) for all PLHIV (On ART + Pre-ART)
- infection control measures for prevention of TB transmission at HIV care settings

The 3"I"s

1.Intensified Case Finding (ICF)

The vast majority of people living with HIV do not know their HIV status and seek health care from general service providers. HIV testing and counselling for people with diagnosed or presumptive TB offers an entry point for a continuum of prevention, care, support and treatment for HIV and for TB

HIV services refer people living with HIV for TB screening, diagnosis and treatment.

Intensive case finding for TB should be undertaken in clinically and socially vulnerable populations. All such screening has to be recorded in the prescribed recording format .

2.Isoniazid Preventive Therapy (IPT):

Isoniazid is the most effective **bactericidal drug** currently available. It protects both against progression of latent TB infection to active disease (reactivation) as well as from reinfection when exposed to active TB case. Implementation of programme for IPT is planned for all HIV infected patients NOT having active TB disease.

3.Infection Control for prevention of TB in HIV care settings (IC)

There is the risk of transmission of tuberculosis infection occurring in health care facilities including the laboratory when patients remain undiagnosed and untreated for tuberculosis. This may be curtailed by early diagnosis and immediate initiation and adherence to RNTCP treatment regimens. This prompt and timely action will make infectious TB patients rapidly non-infectious.

It is now mandatory that any Infection Control plan of the facility should include infection control for TB and TB/ HIV. Broadly, infection control needs to be addressed at three different levels: administrative, environmental and personal.

HIV-TB co-infection is one of the most challenging issues in the effort to scale up ART since more than 60% of PLHIV develop TB. Patients with TB merit special consideration because the co-management of HIV and TB is complicated by drug interactions between rifampicin and NNRTIs and PIs; IRIS; pill burden; adherence; and drug toxicity. Active TB is the commonest OI among HIV-infected individuals and is also the leading cause of death in PLHIV.

The management of patients with HIV and TB poses many challenges, including patient acceptance of both diagnoses. HIV-infected persons with TB often require ART and WHO recommends that ART be given to: all HIV TB co infected (pulmonary/Extra pulmonary) regardless to the CD4 count. ART reduces the incidence and recurrence of TB, as well as the fatality rates. Co-trimoxazole prophylaxis should be given to HIV-TB patients as per the guidelines.

Paediatric TB

TB in a child represents recent and ongoing transmission of TB bacteria. Young children are most likely to become exposed and infected with TB by close contacts, such as family members. Children can develop TB disease at any age, but the severe forms of TB are most common among children between 1 and 4 years of age. Children can get sick with TB disease very soon after being infected with TB bacteria, or they can get sick at any time later in life. They can even infect their own children, decades later, if not treated.

TB in adults and children is curable if identified and treated appropriately. Children at risk of developing TB disease can be identified using simple methods and screening tools. Many children with TB disease can be diagnosed with a clinical evaluation by a trained health care worker.

TB symptoms:

- Current Cough
- Weight loss or failure to gain weight
- Fever and/or night sweats
- Fatigue, reduced playfulness, less active

Especially if symptoms persist (>2 weeks) without improvement following other appropriate therapies (e.g. broad-spectrum antibiotics for cough; anti malarial treatment for fever; or nutritional rehabilitation for malnutrition)

Diagnosis – well-defined symptoms

- Characteristics of cough: persistent (>2 weeks), unremitting and unresponsive to antibiotics
- Fatigue, reduced playfulness
- Documented weight loss, failure to thrive (in preceding 3 months)
- Less useful in young < 3 years

Key points :

- TB is an important cause of morbidity and mortality among CLHIV
- **HIV infected children at increased risk of exposure to TB and therefore TB infection**
- **HIV-infected children at high risk of TB disease Clinical approach to TB diagnosis in HIV-infected** children is similar as for HIV-uninfected children

- Management of TB more complicated in HIV-infected children with significantly poorer outcomes
- Clinical diagnosis is more difficult especially for PTB as other HIV-related lung disease is common
- **CPT and ART have a role in reducing TB-related death which is especially common within the first months following TB treatment**
  - Most disease occurs within 2 years after exposure/infection
    - ✓ The majority within 1 year
- Most cases in children are pulmonary TB
  - ✓ Smear negative or smear not done are the majority
  - ✓ Extrapulmonary TB is also common and the type depends on age
  - ✓ Smear positive disease is usually older children

Mortality is significantly higher in HIV-infected especially if not receiving ART

Session 3.HIV-TB coordination

Learning objectives

By the end of this session, the participants will be able:

- To understand national framework for joint HIV/TB collaborative activities
- Get clarity on activities that can be collaborated at state, as well as district level
- To understand importance prevention, early detection of TB/HIV, prompt treatment of TB/HIV and management of special TB/HIV cases

Duration: 2 hour

Methodology: Discussion on handouts of national framework for joint HIV/TB collaborative activities and presentation.

Materials and Methods:

- Presentation on HIV-TB coordination and structures at national, as well as state and district level.
- Extra reading material: national framework for joint HIV/TB collaborative activities
- Chart / Colour pen
- White board with marker pens

Training steps:

- It is important for participants to understand that in India, HIV and TB related services goes hand in hand with a successful collaborative approach. To give more clear idea, explain the national framework for joint HIV/TB collaborative activities
- Next, explain what are the HIV/TB coordination mechanism at national, state and district level
- The next part of this section is to mention the participants about the purpose of national framework and the objectives
- Explain the TB/HIV coordination approach using the diagram consists of four steps– prevention, early detection of TB/HIV, prompt treatment of TB/HIV and management of special TB/HIV cases

National Framework for HIV-TB collaborative activities in India :

India's National AIDS Control Programme (NACP) and RNTCP recognized importance of HIV/TB co-infection, in their control efforts, as early as 2001. The two programmes jointly developed interventions to ensure early detection and prompt linkage of TB and HIV cases to care, support and treatment. These interventions were governed by joint national policy called National Framework for joint HIV/TB Collaborative Activities. The National Framework is a dynamic document that evolved as the programmes gained experience of field implementation, also assimilating the changes in global guidelines and evidence generated through operational research. The current revision of national Framework coincides with finalization of the vision documents of both national programmes for next 5 year i.e. the NACP-Phase IV and RNTCP National Strategic Plan, (NSP) 2012-2017, and update in WHO HIV/TB policy recommendations.

HIV/TB coordination mechanism:

National	**National TBHIV Coordination Committee** • **National technical working Group**
State	**State Coordination Committee** • **State Working Group**
District	**District Coordination Committee** • **DTO-DAPCU / HIV Nodal officer (HIV TB) Meet**

Purpose of National Framework for HIV TB :

The overall purpose is to articulate the national policy for TB/HIV Collaborative Activities between RNTCP and NACP so as to ensure reduction of TB and HIV burden in India.

Objectives:

1. To maintain close coordination between RNTCP and NACP at National, State and District levels.

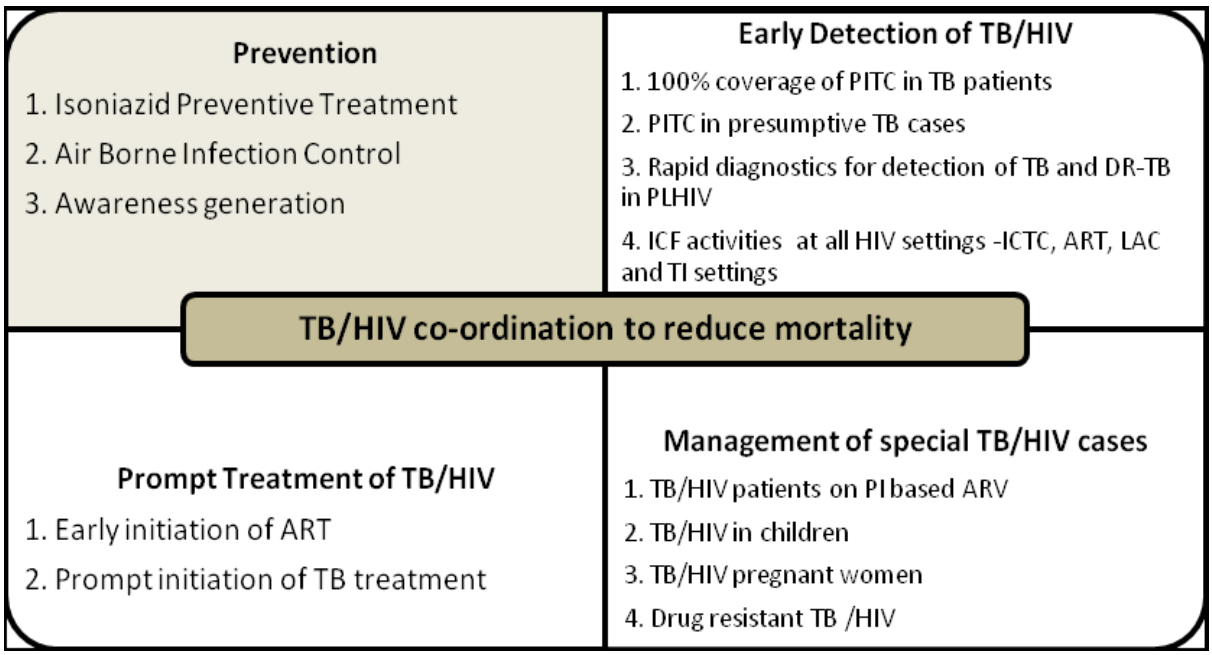
2. To decrease morbidity and mortality due to TB among persons living with HIV/AIDS.

3. To decrease impact of HIV in TB patients and provide access to HIV related care and support to HIV-infected TB patients.

4. To significantly reduce morbidity and mortality due to HIV/TB through prevention, early detection and prompt management of HIV and TB together.

The four pronged strategy summarised below is based on the foundation of strong collaboration between NACP and RNTCP:

TB/HIV coordination approach:



Overview of the Revised National TB Control Programme:

The Government of India provides free diagnostic and treatment services to all TB patients. Under the Revised National Tuberculosis Control Programme (RNTCP), for every one lakh population (0.5 lakh in tribal/hilly areas) there is one RNTCP Designated Microscopy Centre (DMC), which is a health centre or hospital where quality-assured microscopy is available. While a DMC is important for diagnosis, the

DMC only provides microscopy service. Actual TB diagnosis, assignment of treatment, and treatment initiation can be done by a doctor at any health centre, no matter how large or small.

Each TB Unit is staffed by a Medical Officer (designated from the health facility), a Senior Treatment Supervisor and a Senior TB laboratory Supervisor. The overall responsibility of the TB control programme in the district is with District TB Officer or City TB Officer in case of a Corporation. TB unit is at Block level presently and 1 DMC for 1 Lakh population and for hilly and tribal 50000 population.

Session 4.Tuberculosis – Identification, Diagnosis and treatment

Learning objectives

By the end of this session, the participants will be able:

- To understand different types and sub types of TB
- Get clarity on different diagnostic processes of TB
- To generate better understanding around the symptoms, diagnosis and treatment for TB

Duration: 2 hour

Methodology: Discussion on handouts of Intensified TB case finding (ICF) and presentation.

Materials and Methods:

- Presentation on basics, diagnosis and treatment of TB; Directly Observed Treatment Short Course (DOTs)
- Extra reading material: Intensified TB case finding (ICF)
- Chart / Colour pen
- White board with marker pens

Training steps:

Initiate the session by discussing that this is an important session of the day as it includes basics, diagnosis and treatment of TB; Directly Observed Treatment Short Course (DOTs).

- Start the discussion with the participants, keeping the importance of this session in mind and request participants to brainstorm on various types of Tuberculosis. They can be randomly asked what the different types of Tuberculosis are.

- After receiving their comments, show the slides describing different types and sub types of TB.
- Further taking it forward, discuss about the different diagnostic processes of TB with the participants.
- Process of DOTs need to be discussed in details. What does it mean and how CSC can take part in facilitating the process in terms of referring a client to the DOT centre could be discussed in this session. To start the discussion about DOTs, participants can be asked what the full form of DOTs is.
- To generate better understanding around the symptoms, diagnosis and treatment for TB, case studies will be shared among the participants (hand-out II). Participants could be divided in four or five groups or each table could be given a case study to discuss about the possible measures based on the case.
- After 15 minutes of discussion each group / table can share the way outs as discussed.
- Facilitator will sum up the discussion here regarding the best possible measures for such case study.
- It is important to discuss about the psychological aspects of HIV/TB. There are slides/patients charters and those could be shared with the participants.

Note: Explain – Intensified TB case finding (ICF),three “I” recommended by WHO, INH Preventive Therapy, airborne infection control Measures at HIV/AIDS care settings in India, CBNAAT, fixed dose combination (FDC) in daily regimen

This is an intense session with more than one important topic. Hence, before concluding this session facilitator can ask the participants if they have any query and accordingly those could be addressed.

Symptoms of TB

The most common symptoms of Pulmonary Tuberculosis is persistent cough, usually with sputum. When cough persists more than 2 weeks, the chance of TB is greater. Any of the following symptoms are suspected of TB :

- ✓ Cough
- ✓ Fever
- ✓ Weight loss
- ✓ Night sweats

Amongst Extra-pulmonary TB, TB lymphadenitis (lymph node swelling), pleural effusion (collection of fluid between lung and its outer covering), abdominal TB, bone and joint TB, miliary TB (numerous TB lesions in the lungs and throughout the body) and meningeal TB (Brain TB) are commonest.

In case of Extra-pulmonary Tuberculosis, depending on the organ affected, the patient will have specific symptoms. Example, Tuberculosis of the lymph nodes presents with swelling of the lymph node. When TB affects the pleura (an outer lining of the lungs), there is fluid collection between the lung and pleura. Such patients present with breathlessness and the severity varies depending on the amount of fluid present. Tuberculosis of the joints presents with swelling and pain of the affected joints, meningeal tuberculosis (TB affecting the brain) presents with headache, fever, neck stiffness and mental confusion.

Features commonly associated with different forms of extra-pulmonary TB include:

- ✓ Lymph node swelling
- ✓ Ongoing pain in back or joint
- ✓ Breathlessness
- ✓ Headache, neck stiffness, confusion
- ✓ Swelling in abdomen from fluid
- ✓ Weight loss
- ✓ Any unexplained fever

HIV testing of TB patients :

Provider Initiated HIV Testing and Counselling (PITC) of TB patients is now implemented across the country. It is critical that the offer of HIV testing should be done early after TB diagnosis and results are promptly communicated to referring provider so as to ensure early linkage to HIV care and support.

HIV testing of TB patients should be done at ICTC (stand-alone or F-ICTC or PPP ICTC). All TB patients are offered HIV testing .

The measures to bridge the gap in these states include –

1. Promote establishment of Facility Integrated ICTC at all the 24*7 facilities below CHC level
2. Promote establishment of HIV screening centres using whole blood figure prick test at RNTCP DMC at facilities not having co-located ICTC or F-ICTC

Patients screened for HIV using whole-blood finger prick test if found “non-reactive” do not require further testing, while if results is “reactive”, it should be confirmed at nearest ICTC.

HIV testing of presumptive TB cases:

An operational research study instituted by Central TB Division showed very high yield of HIV among TB suspects (7 to 10%) in high prevalence settings. This is as high as that observed in TB patients. In addition this intervention contributed significantly in detection of new HIV infection in the study area (by up to 35%). Also the updated WHO policy on TB-HIV Collaborative Activities of 2012 recommended implementation of PITC among presumptive TB cases. Considering the country evidence and global recommendation, the National Technical Working Group on HIV/TB recommended that the programmes implement PITC among TB suspects in all "high" HIV prevalent settings in India (A and B category districts) in a phased manner. Operationalization of this strategy requires availability of co-located TB and HIV testing facilities.

Diagnosis of TB

Case Definitions:

I. **Microbiologically confirmed TB case** refers to a presumptive TB patient with biological specimen positive for acid fast bacilli, or positive for Mycobacterium tuberculosis on culture, or positive for tuberculosis through Quality Assured Rapid Diagnostic molecular test.

Classification based on anatomical site of disease

a) **Pulmonary tuberculosis (PTB)** refers to any bacteriologically confirmed or clinically diagnosed case of TB involving the lung parenchyma or the tracheo-bronchial tree.

b) **Extra Pulmonary tuberculosis (EPTB)** refers to any bacteriologically confirmed or clinically diagnosed case of TB involving organs other than the lungs such as pleura, lymph nodes, intestine, genitourinary tract, joint and bones, meninges of the brain etc.

i. Milliary TB is classified as PTB because there are lesions in the lungs. A patient with both pulmonary and extrapulmonary TB should be classified as a case of PTB.

II. **Clinical TB case** refers to a presumptive TB patient who is not bacteriologically confirmed, but has been diagnosed with active TB by a clinician on the basis of X-ray abnormalities, histopathology or clinical signs with a decision to treat the patient with a full course of Anti-TB treatment.

In children, clinical TB case is diagnosed based on the presence of abnormalities consistent with TB on radiography, a history of exposure to an infectious case, evidence of TB infection (positive TST) and clinical findings suggestive of TB in children in event of negative or unavailable microbiological results

Microbiologically confirmed or clinically diagnosed cases of TB are also classified according to:

- anatomical site of disease;
- history of previous treatment;
- drug resistance;

2.1 Presumptive Pulmonary TB

Presumptive TB refers to a person with any of the symptoms and signs suggestive of TB including cough >2 weeks, fever > 2 weeks, significant weight loss, haemoptysis, any abnormality in chest radiograph.

Note: In addition, contacts of bacteriologically confirmed TB Patients, PLHIV, diabetics, malnourished, cancer patients, patients on immune-suppressants or steroid should be regularly screened for sign and symptoms of TB

All people living with HIV should be regularly screened for four symptoms viz., current cough of any duration, fever of any duration, significant weight loss or drenching night sweats, during every visit to a health facility and every contact with a health-care provider. Those with history of coughing blood and sputum and with any pulmonary abnormality in chest X-ray should also be evaluated for TB. Similarly, children living with HIV who have one or more of the following symptoms – failure to thrive, fever or cough of any duration or history of contact with a TB patient should be evaluated for TB.

2.2 Presumptive Extra Pulmonary TB refers to the presence of organ specific symptoms and signs like swelling of lymph node, pain and swelling in joints, neck stiffness, disorientation, etc and/or constitutional symptoms like significant weight loss, persistent fever for ≥2 weeks, night sweats.

2.3 Presumptive paediatric TB refers to children with persistant fever and/ or cough for more than 2 weeks, loss of weight[1]/ no weight gain and/ or history of contact with infectious TB cases[2].

2.4 Presumptive MDR TB-refers to those TB patients who have failed treatment with first line drugs, paediatric TB non responders, TB patients who are contacts of MDR-TB (or R resistance), TB patients who are found positive on any follow-up sputum smear examination during treatment with first line drugs, previously treated TB cases, TB patients with HIV co-infection

[1]History of unexplained weight loss or no weight gain in past 3 months ; loss of weight is defined as loss of more than 5% body weight as compared to highest weight recorded in last 3 months.

[2] In a symptomatic child, contact with a person with any form of active TB with in last 2 years may be significant

Classification based on history of previous TB treatment

a) New case - A TB patient who has never had treatment for TB or has taken anti-TB drugs for less than one month is considered as a new case.

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

I. **Recurrent TB case**-A TB Patient previously declared as successfully treated (cured/treatment completed) and is subsequently found to be microbiologically confirmed TB case is a recurrent TB case.

II. **After Treatment failure** patients are those who have previously been treated for TB and whose treatment failed at the end of their most recent course of treatment .

III. **Treatment after loss to follow-up** patients have previously been treated for TB and was declared lost to follow-up at the end of their most recent course of treatment

IV. **Other previously treated patients** are those who have previously been treated for TB but whose outcome after their most recent course of treatment is unknown or undocumented.

V. **Transferred In:** A TB patient who is received for treatment in a Tuberculosis Unit, after registered for treatment in another TB unit is considered as a case of transferred in.

Classification based on drug resistance

a. Mono-resistance (MR):A TB patient, whose biological specimen is resistant to one first-line anti-TB drug only.

b. Poly-Drug Resistance (PDR):A TB patient, whose biological specimen is resistant to more than one first-line anti-TB drug, other than both INH and Rifampicin.

c. **Multi Drug Resistance (MDR):** A TB patient, whose biological specimen is resistant to both isoniazid and rifampicin with or without resistance to other first line drugs, based on the results from a quality assured laboratory.

Rifampicin Resistance (RR): resistance to rifampicin detected using phenotypic or genotypic methods, with or without resistance to other anti-TB drugs. Patients, who

have any Rifampicin resistance, should also be managed as if they are an MDR TB case.

d. Extensive Drug Resistance (XDR): A MDR TB case whose biological specimen is additionally resistant to a fluoroquinolone (ofloxacin, levofloxacin, or moxifloxacin) and a second-line injectable anti TB drug (kanamycin, amikacin, or capreomycin) from a quality assured laboratory.

Under RNTCP, the acceptable methods for microbiological diagnosis of TB are:

Sputum Smear Microscopy (for AFB):

- Sputum smear stained with Zeil-Nelson Staining or
- Fluorescence stains and examined under direct or indirect microscopy with or without LED.

Culture:

- Solid(Lowenstein Jansen) media or
- Liquid media (Middle Brook) using manual, semi-automatic or automatic machines e.g. Bactec , MGIT etc.

Rapid diagnostic molecular test:

- Conventional PCR based Line Probe Assay for MTB complex or
- Real-time PCR based Nucleic Acid Amplification Test (NAAT) for MTB complex e.g. CBNAAT (GeneXpert)

A) Investigations for patients with suspected pulmonary TB

i. Sputum Examination

The first step for diagnosing TB is sputum examination. It is essential to examine two sputum specimens of a single patient. Two sputum samples should be tested for diagnosis of sputum positive TB.

A sputum specimen taken during visit to the laboratory, called a “spot” specimen” is collected on the patient's first visit. The patient is also given a sputum container to bring the early morning sputum sample the next day. Result of sputum examination is given to the patient at the earliest.

Those persons whose sputum shows the presence of TB bacilli are called as sputum-positive pulmonary TB. Patients with sputum-positive pulmonary TB are the most infectious to others, and priority is given to their care for this reason. Thus the counsellor/ peer counsellor/ outreach worker should ensure that information on cough hygiene is strongly reinforced. The counsellor/ peer counsellor/ outreach worker should also inform the patient that if he/she is diagnosed with sputum positive TB, they should get their contacts tested for TB at the nearest health facility. Any child in the family aged less than 6 years should also be provided with chemoprophylaxis for TB from the nearest DOTS centre.

The sputum test detects only those patients with serious infectious pulmonary TB. Many patients with negative sputum smear results still can have TB, and can be quite ill. These patients require completion of diagnosis based on clinical findings and x-ray results.

Counsellor/ peer counsellor/ outreach worker have to inform clients while referring to DMC that, even if the sputum result is negative they have to see the medical officer. They may need to undergo other procedures to rule out TB.

If the sputum does not show TB bacilli the patient is given a course of antibiotics for 5-7 days. If patient's symptoms do not fully subside the smear examination is repeated. If the smear is negative the patient is further examined by doing a Chest X-ray. If X-ray shows TB lesions, the patient is called as sputum-negative pulmonary TB. Many patients will have their symptoms caused by other conditions, such as

other pulmonary infections or non-infectious pulmonary conditions. All patients should have their conditions properly diagnosed and treated; this is particularly important for HIV-infected patients, who frequently also suffer from serious non-TB chest infections.

The clients need to be informed about X ray examination, in case of sputum negative results. It is important to clearly tell clients without pulmonary TB, but present with cough to consult doctors for ruling out other possibilities. Counselors can encourage such clients who are diagnosed with HIV to disclose their HIV status to the treating physician for better management. Please note that all patients with negative sputum smears should not be labelled as 'Sputumnegative Pulmonary TB'. They need to be labelled Sputum-negative Pulmonary TB only after they have been diagnosed by a doctor after examinations are complete.

Thus Pulmonary TB can be of two types: Sputum-positive pulmonary TB and sputum negative pulmonary TB.

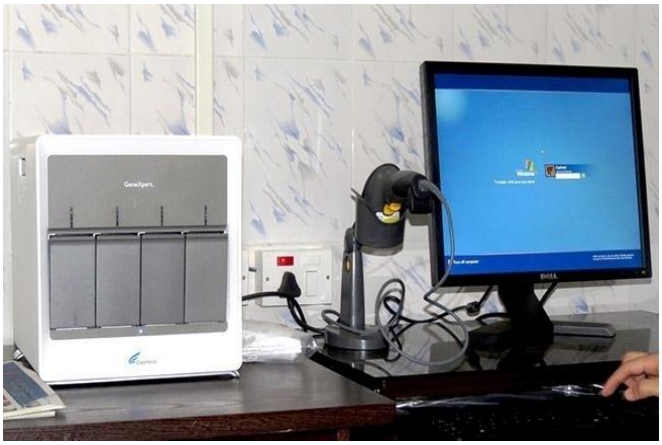
Under RNTCP sputum examination is done with strong preference for RNTCP DMC. These microscopy centres are located with existing laboratories in government hospitals, Medical colleges, and PHCs; they may also be in certain NGO Clinics or Private laboratories. DMCs have a skilled laboratory technician, trained intensively for a sputum examination with External Quality Assurance system (EQAS) in place. Sputum examination is done free of cost at all the government health centres. All referrals from ICTC for sputum microscopy should ONLY be to an RNTCP DMC

ii. X-Ray Chest

X-rays are useful in smear-negative patients but are difficult to interpret. There is high chance of wrongly diagnosing a patient as tuberculosis if X-ray alone is used for diagnosis. Most patients with an abnormal X-ray suggestive of tuberculosis do not actually have the disease. Nevertheless Chest X-ray is an important tool for diagnosis in certain cases of TB. When a sputum-negative patient does not respond to treatment with 10-14 days of general antibiotics, an Chest X-ray may be required. In some cases of Extra-pulmonary TB, , chest X-ray is required for diagnosis.

iii. Newer Diagnostic tests: CBNAAT,C&DST for DRTB

Cartridge Based- Nucleic Acid Amplification Test (CB-NAAT)



All PLHIV at ART centre who are presumptive TB cases (suspected of having TB) will be referred to CBNAAT facility for diagnosis of TB / Rif resistant TB. CBNNAT (Cartridge based Nucleic acid amplification test) is a novel diagnostic tool for rapid and specific detection of Mycobacterium Tuberculosis in pulmonary samples. The new test – "CBNAAT", a computerized test, detects the infectious organism that causes TB within two hours. The test identifies both the presence of TB in the patient's sputum sample and drug resistance to Rifampicin, a critical drug in treatment of TB. The advanced TB test would be offered free to all PLHIV at ART centre who are suspected of having TB.

Those patients who are having TB-HIV co-infection are considered as presumptive drug resistant TB cases i.e MDR TB suspects ,who are are linked to Culture & DST facilities for diagnosis of Drug resistant TB cases by the concerned medical officer.

Certain tests commonly used in the private sector, such as TB-ELISA or PCR, are *not* recommended in national or international guidelines for TB diagnosis. Such tests burden the patient with unnecessary expense, are frequently inaccurate, and are not required to diagnose TB. In some special circumstances, sputum specimens may be sent to a specialized laboratory for culture and testing for drug resistance.

Referral of clients suspected of TB to DMC: The patient suspected of TB ,will be reffered to nearest RNTCP Designated microscopic centre (DMC) using REQUEST FOR LAB DIAGNOSIS FORM .The patient will undergo the same process as any other TB suspect, i.e. the diagnostic algorithm of RNTCP will be followed. The Laboratory Technician will enter the details of the patient, including correct residential address, in the TB Laboratory Register and clearly mention the name of the referring unit in TB laboratory register. The results are provided to the medical officer and patients by Lab technicain based on the test conducted Medical Officer, who will decide on further management.

Counsellor/ peer counsellor/ outreach worker should tell the clients that the TB tests available under RNTCP are adequate to diagnose TB and are accurate. If they do undergo testing at the government facilities, they can avoid unnecessary expenses also

B) Investigations for Extra-Pulmonary TB

The investigation of Extra-pulmonary TB depends on the organ affected. It may not be easy for the counselor to suspect Extra-pulmonary TB. However, the counselor may check for complaints like swelling around neck, swelling and pain in joints, breathlessness, headache, fever and neck stiffness.

In case of suspicion of extra-pulmonary TB, or any unexplained illness, the patient should be referred to a medical officer for further evaluation. The counselor should explain to the patient that they should be evaluated by a doctor for their symptoms, with the possibility of TB in mind.

In case of Extra-pulmonary TB, the CSC will refer the patient to the Medical Officer, who will further refer the patient for necessary investigations. After obtaining the test results, the Medical Officer will decide further course of management.

C) Follow up Sputum Examination

During the course of treatment, follow up sputum examination is done every two months till the end of treatment to monitor their response to treatment. Thus sputum examination both helps with the diagnosis, and is used to monitor response to treatment. Patients who remain sputum positive are provided additional treatment or are referred for evaluation for drug-resistant TB.

D) Examination of Contacts of Sputum-positive TB Patients

TB is transmitted by sharing air between TB patients and others. Patients with sputum-positive TB are the most infectious, and their household contacts need to be considered for TB. Any household contact of sputum-positive person who has a productive cough should have two sputum examinations done, irrespective of the duration of his symptoms.

E) TB prevention in children

All children below six years of age who are household contacts of sputum-positive cases should be examined for TB disease, and if the child has TB disease, then anti-tuberculosis treatment is given. If the child does not have TB, preventive treatment with Isoniazid is given for 6 months, to reduce the risk of TB.

Treatment of TB

Drug regimen for Drug sensitive TB

Daily regimen for TB among HIV/TB patient in India

The National Expert Committee on drug regimen for TB and Standards of TB care in India recommend daily regimen for all drug sensitive TB among PLHIV in India.

For new TB cases, the treatment in intensive phase (IP) will consist of eight weeks of Isoniazid, Rifampicin, Pyrazinamide and Ethambutol in daily dosages as per four weight band categories. There will be no need for extension of IP. Only Pyrazinamide will be stopped in the Continuation Phase (CP), while the other three drugs will be continued for another 16 weeks as daily dosages.

For previously treated cases of TB, the IP will be of 12 weeks, where injection Streptomycin will be stopped after 8-weeks and the remaining four drugs (INH, Rifampicin, Pyrazinamide and Ethambutol) in daily dosages as per weight bands will be continued for another 4-weeks. There will be no need for extension of IP. At the start of CP, Pyrazinamide will be stopped while the rest of the drugs **–** Rifampicin, INH and Ethambutol will be continued for another 20 weeks as daily dosages in the CP.

The CP in both new and previously treated cases may be extended by 3-6 months in certain forms of TB like CNS TB, Skeletal TB, Disseminated TB etc. based on clinical decision of the treating physician.

Type of TB Case	Treatment regimen in IP	Treatment regimen CP
New	(2) HRZE	(4) HRE
Previously treated	(2) HRZES + (1) HRZE	(5) HRE

Mono/Poly Drug resistant TB

On receiving the reports showing Mono/Poly DRTB from the quality assured CDST laboratory, patients and their family members are counselled. Patient is referred for evaluation & initiation of the regimen for mono/ poly DR TB to the DR TB center.Repeat rifampicin DST is to be done in case, result of mono or poly drug resistant TB is available after 6-8 weeks.

The DR TB Center committee carries out the pre-treatment evaluation (including clinical and radiological evaluation) of the patient and initiates him/her on the treatment regimen.

- **Mono Drug Resistant TB-**The treatment regimen is consisting of Injectable SLD + FQ + Rifampicin + two out of the first line drugs (from H,E & Z) to which the patient is sensitive to make a total of 5 effective drugs regimen given daily.

- In case of **reported baseline additional resistance to other FLDs**, the regimen is Inj SLD + FQ + Rifampicin + any FLD to which patient is sensitive + one of the remaining Group 4 drugs (Ethionamide, Cycloserine ,PAS).

In addition, High Dose INH is added to the regimen if LPA shows inhAmutation or culture reports show low level INH resistance.

The total duration of treatment will be 9 to 12 months. The Intensive Phase (IP) is for 3 months with scope for extension to a maximum of 6 months. The Continuation phase (CP) is for a fixed duration of 6 months.The patient is initiated on treatment at DR-TB Centre, and then sent back for ambulatory treatment to the DTO for continuation of treatment regimen and regular follow-up.

Type of TB Case	**Treatment regimen in IP**	**Treatment regimen CP**
Rifampicin Sensitive INH Resistant[2] TB & DST of SEZ not known	(3-6) Km Lfx R E Z *(modify treatment based on baseline DST report to E,Z,KM, CM,Lfx, Mfx)*	(6) Lfx R E Z

Mobile based Drug adherence tracking mechanism for daily anti TB treatment used at 3Is pilot sites

Side-Effects to Anti-Tuberculosis Drugs

In most TB patients, Anti Tuberculosis Treatment (ATT) is well tolerated. However, some patients may experience some side-effects to these anti-tuberculosis drugs. These side- effects may be classified as minor or severe.

Minor Side-Effects include mild gastrointestinal upset, mild itching, joint aches, and drowsiness. Most of these will go away within a short time.

Serious Side-Effects are rare but also occur. These include burning sensation in the hands and feet, impaired vision, ringing in the ears, loss of hearing, dizziness, loss of balance, ongoing nausea, or jaundice requires to be immediately reported to the medical officer for evaluation.

Counsellor/ peer counsellor/ outreach worker should encourage the clients to promptly seek medical opinion in case of side-effects and not stop medicines on their own.

Session5: Role of Care and Support Centres

Learning objectives

By the end of this session, the participants will be able:

- Understand the rationale and context for Vihaan program and CSCs
- Be able to articulate the objectives of the Vihaan program
- Know the facilities available pertaining to management of TB clients.

Duration: 2 hours and 30 minutes

Methodology: Discussion on *Operational Guidelines for Care and Support Centres*and presentation.

Materials and Methods:

- *Operational Guidelines for Care and Support Centres*, DAC (NACO), 2013
- PowerPoint slides titled*Introduction to Vihaan – Setting the Context*
- Chart / Colour pen
- White board with marker pens

Training steps:

- Start the sessionby using the MS PowerPoint slides titled *Introduction to Vihaan – Setting the Context*, explain the background and rationale for Project Vihaan and CSCs. Compare the information in the slides with the key points noted on the whiteboard and summarize.
- Further, undertake a brainstorming exercise. Ask participants ‘what are the roles of CSC staff if they find a TB positive case?’
- Each table should be given a chart paper to list down the steps to be followed
- After 15 minutes each table or group can share the presentation

- Next, sum up the session through facilitating a discussion based on the roles and responsibilities of CSC staff. Explain the TB-HIV activities taken cared under Vihaan, both for registered and new clients.
- Use the diagram/flow chart that will help to understand the different steps in order to help the client to access the required services.
- Share the patient charter with the participants

Mechanishm for management of TB cases in Vihaan in summed up below in two flow charts:

Vihaan TB / HIV Activity - Flow chart – New Client

Vihaan TB / HIV Activity - Flow chart – Registered Client

Detailed Reading:

HIV/TB integration into CSC activities:

Community-based outreach is the backbone of the CSC, serving as a comprehensive approach to provide support for retention in treatment, adherence, positive living, referrals to other health services, linkages to social welfare schemes, and strengthening enabling environment for PLHIV. This is a part of the national response to meet the needs of PLHIV, especially those from high-risk groups, and women and children infected and affected by HIV. CSCs are implemented by PLHIV networks, community-based organizations, and NGOs.

Through an integrated approach of expanded HIV-TB services into CSCs, it is proposed to achieve the following objectives:

- Increase the screening among PLHIV and early detection of TB
- Immediate ART initiation of all PLHIV detected TB
- Improve and sustain treatment adherence of HIV-TB co-infected clients.

In order to achieve the above mentioned objectives, the following activities will be carried out by the trained CSC staff:

- ICF for TB for new clients
- ICF for TB for existing clients
- Follow-up of PLHIV with TB for ATT
- Support Group Meeting on TB related issues at CSC and field
- Other TB prevention activities:
    a) Referral of family members for TB testing
    b) TB referral services for key populations
    c) TB referral services for children
    d) Immediate ART initiation for TB cases

Mechanisms to be adopted at CSC level:

- HIV-TB coordination meetings (at DTC/DAPCU level)
- Follow up mechanisms set for screening of clients and their families

- HIV-TB planning and coordination (to facilitate referral and linkages)
- HIV-TB monitoring and evaluation management
- HIV-TB counselling and support mechanisms
- HIV-TB on site trainings and information sharing

Family screening process:

- Families of TB +ive/-ive will be screened for TB during home visits. 'Symptoms and signs' hand-out will be shared with clients during the first counselling session; once a client is tested for TB.

Challenges to be addressed for management of HIV-TB clients:

- Referrals for TB screening to undergo an x-ray also along with sputum testing
- Difference in screening for active and passive TB :
    - ✓ Guidelines
    - ✓ Checklist for screening
    - ✓ Follow –up mechanisms
- Treatment literacy to be enhanced. Handouts will be developed on:
    - ✓ Routine need assessment for TB
    - ✓ Awareness and information on TB
    - ✓ Self-care and management post ATT
    - ✓ Pulmonary and non-pulmonary TB
    - ✓ Pediatric TB: signs and symptoms

Intensified Case Finding (ICF)

ICF for TB for new clients: Every PLHIV needs to be verbally screened at the time of registration for the presence of four clinical symptoms – 1.Current cough, 2.Weight loss, 3. Fever and 4.Night sweats – to identify those with presumptive TB. Identified presumptive TB cases need to be referred to the nearest TB testing facility.

ICF for TB for old clients: Those clients already registered with the programme also need to be verbally screened at the time of their visit to CSC during TB screening campaign or during home visits conducted by ORW. Identified presumptive TB cases need to be referred to the nearest TB testing facility. This needs to be done twice in year for all PLHIV including those who completed ATT in the past.

INH Preventive Therapy (IPT):

IPT is strongly recommended for PLHIV in whom TB has been ruled out irrespective of TST, previous TB, CD4 count, ART status and pregnancy. It is important to understand that symptom-screening is enough to rule out TB. Chest x-ray (CXR) is widely used for diagnosing and screening pulmonary tuberculosis (PTB), yet its validity is debatable and its costs are relatively high. In order to nation-wide scale up, National Technical Working Group (NTWG) decided to implement pilot test regarding feasibility of IPT**.**

Infection control:

National Airborne Infection Control Committee (NAICC) has been constituted to provide for a multi-lateral national level coordinating body, to develop these national guidelines, and provide technical guidance for their implementation, evaluation, and revisions. Key National level activities include:

- Developing and strengthening coordination bodies
- Promote the incorporation of infection control considerations into health facility design, construction, renovation, and use
- Conduct surveillance and assessment at all levels of the health system
- Conduct monitoring and evaluation
- Facilitate operational research

Infection control measures in HIV care settings are included in the ART TB/HIV module and what are the managerial and administrative, environmental and personal protection measures, are specifically mentioned in the same.

It was also decided that risk assessments to be initiated at all ART centres, followed by site-specific interventions.

Airborne Infection Control Measures at HIV/AIDS care Settings in India includes –

- Ensuring implementation of National Airborne Infection Control Guidelines in HIV/AIDS care settings.
- Sensitisation of ICTC/ART centre Staff in AIC guidelines especially personal protection measures
- Ensuring Administrative, Environmental and Respiratory protection measures
- Health Workers screening for TB

Linkage of HIV- infected TB patients to CPT and ART:

- Co-trimoxazole can also be given routinely for the prevention of opportunistic infections in HIV-infected persons; this strategy is called Cotrimoxazole prophylaxis therapy.
- Anti-retroviral treatment is highly effective at reducing mortality among HIV-infected TB patients;
- As per National guidelines all HIV-infected TB patients are to be linked to CPT and ART services irrespective of CD4 Count.

Patient charter:

PATIENTS' RESPONSIBILITIES

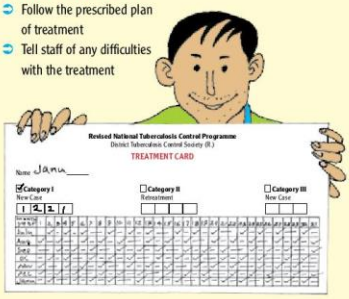
You have the responsibility to:

Share Information

- Inform healthcare staff all about your condition
- Tell staff about your contacts with family, friends, etc.
- Inform family and friends and share your TB knowledge

Follow Treatment

- Follow the prescribed plan of treatment
- Tell staff of any difficulties with the treatment



Contribute to Community Health

- Encourage others to TB-Test if they show symptoms
- Be considerate of care-providers and other patients
- Assist family and neighbors to complete treatment

Show Solidarity

- Show solidarity with all other patients
- Empower yourself and your community
- Join the fight against TB in your community

TB-FREE AXSHYA

DOTS Pura course, Pakka ilaaj

This illustrated version of Patient Charter is made available and distributed through project AXSHYA

Patients' Charter for Tuberculosis Care

The Charter outlines the Rights and Responsibilities of People with Tuberculosis. It empowers people with the disease and their communities through this knowledge. It is endorsed by the WHO, Stop TB Partnership, national governments and civil society organizations.

Know Your Rights and Fulfill Your Responsibilities

PATIENTS' RIGHTS

You have the right to:

Care

- Free and equitable care for Tuberculosis (TB)
- Quality care meeting the International Standards (ISTC)
- Benefit from Community Care Programs

Dignity

- Be treated with respect and dignity
- Social support of family, community and national programs

Information

- Information about available care services
- Be informed about condition and treatment
- Know drug names, dosage and side effects
- Access to your medical records in local language
- Have peer-support and voluntary counseling

Choice

- A second medical opinion, with access to records
- Refuse surgery if drug treatment is at all possible
- Refuse to participate in research studies

Confidence

- Have privacy, culture, religious beliefs respected
- Keep your health condition confidential
- Care in facilities that practice effective infection control

Justice

- File a complaint about care, and to have a response
- Appeal unjust decisions to a higher authority
- Vote for accountable local, national patient representatives

Organization

- Join or organize peer support groups, clubs and NGOs
- Participate in policy making in TB programs

Security

- Job security, from diagnosis through to cure
- Food coupons or supplements if required
- Access to Quality Assured drugs and diagnostics

Session 6: Psychosocial Aspects of HIV/TB, counselling, pill burden and adherence

Learning objectives

By the end of this session, the participants will be able:

- To understand psychosocial aspects of HIV/TB
- Understand what adherence is and how it prevents resistance.
- Assess what helps and hinders adherence.
- Examine actual cases of adherence to ART.

Duration: 2 hour

Methodology: Brainstorming, Discussion & Case Studies role plays.

Materials and Methods:

- Presentation on Psychosocial Aspects of HIV/TB and adherence
- Extra reading material: Psychosocial aspects and management of HIV/TB co-infection
- Chart / Colour pen

Training steps:

- Start the session by mentioning that HIV and TB are also associated with stigma and how awareness around both can reduce the misconception among the common people.

- Let the participants brainstorm around five minutes to think why counselling of TB patients for HIV testing is important. After randomly taking their feedback explain that - Although most patients with HIV do not have TB, there are a large number of HIV patients who may be suffering from undiagnosed TB infection.

- Mention the participants, as per the RNTCP guideline - Designated Microscopy Centres/ OPD/ wards may refer TB patients for counselling and diagnosis of HIV infection. Diagnosed TB patients who have symptoms/signs suggestive of HIV infection will be referred by the medical officer to the ICTC. Thus, these diagnosed TB patients may be referred from DMC, DOT Centre, Out-patient clinics, TB ward, TB Clinic etc. Sometimes the patient may simultaneously be investigated for TB and HIV. The doctor should first complete the investigations for TB and then refer for HIV investigations. While referring to the ICTC, the doctor should write a referral note to ICTC in which the TB status of the person is mentioned.

- There are several important areas, as a counsellor one has to face and solve accordingly. To make this process more clear organise a role play for 10-15 minutes. Choose two volunteers from the participants. One as a client and another as the ART counsellor. Explain the case to the client – “If the community member registered with CSC refuses TB testing***”.*** Now, conclude the role play by emphasising that once an individual is detected with TB his entire family needs to be screened.
- The next step is to explain the percipients what is pill burden. Explain that pill burden is a term that refers to the number of pills (tablets or capsules, the most common dosage forms) that a patient takes on a regular basis, along with all associated efforts that increase with that number - like storing, organizing, consuming, and understanding the various medications in one's regimen.

  This is extremely important to mention the participants that - Higher pill burden is associated with poorer adherence to HIV therapy and reduced chances of achieving an undetectable viral load.
- Regarding adherence, divide participants into 4 groups and give two groups 15 minutes to come up with the factors affecting adherence to TB treatment and interventions for improving it

- Now explain the following factors for both the cases–

HIV/AIDS	**Factors affecting adherence**	**Interventions to improve adherence**
Socioeconomic-related factors	(-)Women: stress of childcare; low income; lack of social support (+) Support of family and friends;	Family preparedness; mobilization of community- based organizations; intensive education on use of medicines for patients with low levels of literacy; assessment of social needs
Health care team/health system-related factors	(-) Lack of clear instructions from health professionals; poor implementation of educational interventions (+) Good relationship between patient and physician; support of nurses and pharmacists	Good patient - physician relationship; multidisciplinary care; training of health professionals on adherence; training of health professionals on adherence education; training in monitoring adherence; training caregivers; identification of the treatment goals and development of strategies to meet them; management of disease and treatment in conjunction with the patients; uninterrupted ready availability of information; regular consultations with nurses/physicians; non-judgemental attitude and assistance; rational selection of medications
Condition-related factors	(-) Asymptomatic patients (+) Symptomatic patients; understanding the relationship between adherence and viral load	Education on use of medicines; supportive medical consultation; screening for comorbidities; attention to mental illness, as well as abuse of alcohol and other

		drugs
Therapy-related factors	(-) Complex treatment regimens; close monitoring; severe lifestyle alterations; adverse events; adverse effects of treatment; lack of clear instructions about how to take the medications (+) Less frequent dose; fewer pills per day; fewer dietary restrictions; fitting medication to individual's lifestyle; belief that medication is effective	Simplification of regimens; education on use of medicines; assessment and management of side-effects; patient-tailored prescriptions; medications for symptoms; education on adherence; continuous monitoring and reassessment of treatment; management of side-effects
Patient-related factors	(-) Forgetfulness; life stress; alcohol use; drug use; depression; hopelessness and negative feelings; beliefs that alcohol and drug use interfere with medications (+) Positive beliefs regarding the efficacy of antiretroviral medications	Monitoring drug and/or alcohol use; psychiatric consultation; behavioural and motivational intervention; counselling/psychotherapy; telephone counselling; memory aids and reminders; self-management of disease and treatment

Conclude the session explaining integrated 10 points counselling tool on TB/drug resistant TB

Factors that influence adherence to TB treatment

Many factors have been associated with adherence to TB treatment including patient characteristics, the relationship between health care provider and patient, the

treatment regimen and the health care setting (*10*). One author has defined no adherence as "an unavoidable by-product of collisions between the clinical world and the other competing worlds of work, play, friendships and family life"*.* Factors that are barriers to adherence to TB drugs can be classified as shown below.

A. Economic and structural factors

TB usually affects people who are hard to reach such as the homeless, the unemployed and the poor. Lack of effective social support networks and unstable living circumstances are additional factors that create an unfavourable environment for ensuring adherence to treatment.

B. Patient-related factors

Ethnicity, gender and age have been linked to adherence in various settings. Knowledge about TB and a belief in the efficacy of the medication will influence whether or not a patient chooses to complete the treatment (*16*). In addition, cultural belief systems may support the use of traditional healers in conflict with allopathic medicine. In some TB patients, altered mental states caused by substance abuse, depression and psychological stress may also play a role in their adherence behaviour.

C. Regimen complexity

The number of tablets that need to be taken, as well as their toxicity and other side-effects associated with their use may act as a deterrent to continuing treatment. The standard WHO regimen for the treatment of TB involves using four drugs for an initial "intensive phase" (2 - 3 months), and two or three drugs for a further "continuation" phase. Drugs may be taken daily or "intermittently" three times a week.

D. Supportive relationships between the health provider and the patient

Patient satisfaction with the "significant" provider of health care is considered to be an important determinant of adherence but empathic relationships are difficult to forge in situations where health providers are untrained, overworked, inadequately supervised or unsupported in their tasks, as commonly occurs in countries with a high TB burden.

E. Pattern of health care delivery

The organization of clinical services, including availability of expertise, links with patient support systems and flexibility in the hours of operation, also affects adherence to treatment. Many of the ambulatory health care settings responsible for the control of TB are organized to provide care for patients with acute illnesses, and staff may therefore lack the skills required to develop long-term management plans with patients. Consequently, the patient's role in self-management is not facilitated and follow-up is sporadic.

Like HIV, TB is also a disease with much stigma, but to a different extent. The first step is to help spread awareness of TB, and to correct common mistaken beliefs about what causes TB, how it is transmitted, whether it can be cured. In spite of awareness about TB, patients are afraid to seek medical opinion for fear of being diagnosed as TB. Thereby many persons prolong their sufferings and many unwilling to accept the diagnosis of TB shop around for another doctor in the hope of a more acceptable diagnosis.

TB can occur to any person. In the early stages, patients tend to ignore their symptoms and used to go to physician only when they are seriously ill. Patients with cough or other symptoms frequently seek private treatment first, but are unable to afford expensive diagnostic testing or complete treatment from the private facility. Many patients and their families incur huge debts, are forced to sell off their assets and are pushed further into poverty. Ifthe sole bread earner of the family is suffering from TB, the situation may be further complicated by loss of daily wages if he is unable to attend to his work. Counselors should check with the client whether they have taken any medicine before, while screening for TB. While telling clients about treatment from RNTCP, it is to be specified that DOTs is free of cost

Patients frequently discontinue their treatment as their health improves, within few months of treatment. The motivation to take regular medication for a long period is lacking even when medicines are provided free of cost. Patient starts forgetting to take medicines. Alternatively, takes less than the prescribed medicines or decides that he does not require any more treatment. Very often, in spite of knowing the consequences, patient stops the treatment before completing the full course of treatment.

Adherence for TB treatment

Clients need to understand that TBis curable; not a hereditary disease; and after a short period of treatment, no longer infectious. This can increase acceptance of people with TB; and create a supportive environment to encourage diagnosis, treatment and effective cure.

- CSC staff to ensure timely follow up of patient and undertake retrieval actions in case of treatment interruption;
- Coordinate with local RNTCP staff to ensure smooth transfer in case of anticipated migration of patient
- Monitoring recording on TB treatment cards by CSC staff

As per NACO guideline, CPT of 6 months to be tracked by the programme staff and delay in initiation of CPT and ART to be tracked district wise by comparing the data of conversion and RT reports vis-a-vis the treatment outcomes of patients. ART centres should follow the Intensive Case finding (ICF), Infection Control (IC) and INH Prophylaxis Treatment (IPT) and all the staffs should be trained for the same.

Integrated 10 points counselling tool on TB/drug resistant TB:

1. Tuberculosis (TB) is the most common opportunistic Infection in people living with HIV (PLHIV) and leading cause of death in PLHIV.

2. Tuberculosis is an infectious disease caused predominantly by Mycobacterium Tuberculosis. The infection occurs most commonly through droplet nuclei generated by coughing, sneezing etc., inhaled via the respiratory route. TB usually affects the lungs, but may affect other parts of the body as well.

***An H*IV negative person infected with TB has a 10% life-time risk of developing TB disease. HIV increases the risk of progression from TB infection to TB disease and PLHIVs have a 60% lifetime risk of developing TB disease.**

3. Persons having cough of 2 weeks or more, with or without other symptoms, are referred to as pulmonary TB suspect (Presumptive TB case). They should have 2 sputum samples examined at Designated Microscopy Centre (DMC).

4. A person with extra-pulmonary TB may have symptoms related to the organs affected along with symptoms like enlarged cervical lymph nodes, Chest pain, Pain and swelling of the joints etc. Extra-pulmonary TB can be confirmed by other investigations.

5. All people living with HIV should be regularly screened for TB using a clinical symptom-based algorithm consisting with any one of the symptoms of Cough of any duration, Fever, Weight loss or Night sweats at the time of initial presentation for HIV care and at every visit to a health facility or contact with a health-care worker afterwards.

6. Diagnosis and treatment services for TB are available free of cost through the Revised National TB Control Programme (RNTCP)

2 sputum smear examinations are necessary for the diagnosis of pulmonary TB. During the course of treatment the progress is monitored by means of follow up sputum examinations.

Anti TB drugs are provided in patient-wise drug boxes, which ensure that the full course of treatment is available at the start of treatment. Treatment is provided by “DOT provider “at a place near the patient’s home.

Cure from TB can only be ensured by taking complete and regular treatment. Without correct and complete treatment, a patient can become very ill or develop Drug resistant TB.

7. PLHIV diagnosed with TB should be linked to ART services at earliest, irrespective of CD4Count. Co-trimoxazole preventive therapy should be provided to all HIV-TB co-infected patients to prevent opportunistic infection.

8. An HIV/ TB co-infected patient should be referred to nearest RNTCP certified Culture and Drug sensitivity laboratory facility /CBNAAT facility for diagnosis of Drug resistant TB.

9. The client's information is to be kept confidential and this information is not furnished under any circumstances to any other person except 'Shared confidentiality' with the treating physician and public health system DOT provider for better case management & to get benefit of prophylactic/ treatment options available for him.

10. All TB/ Drug resistant TB patients should maintain cough hygiene (putting a cloth on nose & mouth while coughing or sneezing) to prevent transmission of TB/DRTB.

Session 7.Reporting and documentation of HIV/TB activities at CSC level

Learning objectives

By the end of this session, the participants will be able:

- Become familiar with tools for documentation of HIV-TB cases (K-format)
- Discuss reporting mechanism using different types of forms
- Explain their role in documentation and reporting at each level

Duration: 2 hours and 30 minutes

Methodology: Discussion on *HIV-TB reporting formats (K-format)*and presentation.

Materials and Methods:

- Vihaan HIV-TB implementation plan
- M&E tools (K-format)
- PowerPoint slides titledreporting on HIV-TB
- Chart / Colour pen
- White board with marker pens

Training steps:

Materials and Methods:

- HIV-TB reporting tools to be used by functionaries at CSC level *(hard copy of all tools should be provided to participants for reference and practice in this session).*
- Brainstorm, what are your roles? Write points on the board/flip chart. Discuss how they could fulfil these roles in line with only the M&E tools to be filled by functionaries at CSC level.
- Discuss ways by which they could monitor their work. Get inputs from them before you explain information and tools. Ask them to go through all the tools provided. Encourage them to ask questions on how to fill the same. Give examples for them to know exactly how they could fill each report and the consolidated report.
- Ask a volunteer to sum up the main points of discussion

Hand-outs

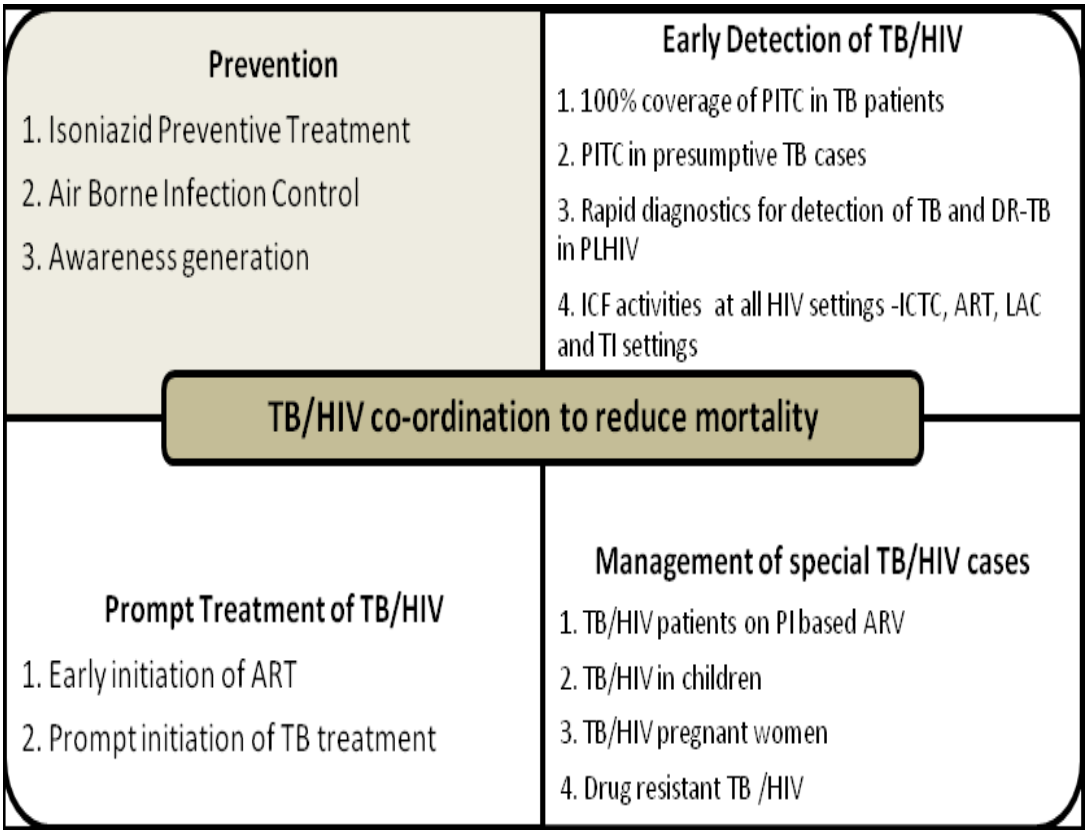
Hand-out: I
HIV-TB Case Study

Jancy, aged 14 years, is a registered member of the CSC in Kasaragod District. Her father passed away when she was two years old. She lost her mother at the age of four. Her father lived in Mumbai and married from Kerala. Her family members knew that her parents died due to HIV/AIDS. Even then they did not send the child for HIV testing. Vihaan Outreach Worker came to know about Jancy through a nurse in the nearby Health Centre. Staff nurse informed the ORW about Jancy having consistent fever and cough. The ORW contacted her caretakers and advised them to send Jancy or HIV testing. In the meantime, she was admitted in the general hospital with high fever but the doctors did not refer her for HIV testing. Finally the ORW took her for testing and confirmed that she was also infected with HIV. By this time, her condition deteriorated badly, CD4 decreased to 187 and weight to 26 kg. She was very good at study but because of the continuous illness she dropped out of studies. She was bedridden also. Later on, it was found that she was co-infected with TB. The CSC staff gave counseling to her family members about HIV/AIDS and the mode of transmission and the need of treating HIV/AIDS and TB at the early stages. They were thinking that there is no medicine for treating HIV/AIDS so they did not enquire further about it. The disease and parents' bereavement caused many problems to the child. Mentally and physically she was very week. The CSC concentrated on the child and provided counseling many times. She was motivated her to continue her studies. Now she is taking ART medicine and TB medicine. There is a great change in her health and mental condition. She is planning to prepare for the SSLC examination by studying from home.

Reflecting on the case study, discuss with your group; that many of people affected with HIV- TB have no knowledge about it and way of treating the diseases. Suggest three immediate actions to be undertaken, once an individual is identified with HIV-TB. Also, mention appropriate referrals that need to be undertaken at CSC level. What follow up mechanisms will be put in place in such circumstances?

Hand-out: II

HIV / TB Coordination Approach



RNTCP Request Form For Examination Of Biological Specimen For TB
(Required for Diagnosis of TB, Drug Sensitivity Testing and Follow up)

Patient Information			
Patient Name		Age (in yrs)	Gender:☐ M ☐ F ☐ TG
Patient Mobile No. or other contact no.		Specimen Date of Collection (DD/MM/YY).....	Sputum ☐ Other(specify) ☐
Patient address with landmark		HIV Status: ☐Reactive ☐ Non Reactive ☐ Unknown	
		High Risk Group: ☐ Contact of TB/DRTB Case ☐ Diabetes ☐ Tobacco ☐Smoker ☐ Prison ☐ Miner ☐ Health –care worker ☐ other (Specify).....	

Name referring facility (PHI/DMC/DR-TB Centre/Laboratory/ Others): Health Establishment ID(NIKSHAY):.....	CDL NIKSHAY ID: ___.____._.C._____ RNTCP TB Reg No._____ Or ☐ Not Applicable
State:_____ District:_____ Tuberculosis Unit (TU):_____	

Reason for Testing:

Drug Sensitive TB	
Diagnosis (NIKSHAY ID_____)	Follow up (Smear and culture)
H/o anti TB Rx for > 1month: ☐ YES ☐ NO	RNTCP TB Reg No._____ NIKSHAY ID:_____
☐ Presumptive TB	Regimen : ☐ New ☐ Previously Treated
☐ Private Referral	Reason: ☐ End IP ☐ End CP
☐ Presumptive NTM	Post Treatment:☐ 6M ☐12M ☐ 18M ☐24M

Drug Resistant TB		
Drug Susceptibility Testing(DST)		Follow-Up (Smear and Culture)
☐ Presumptive MDR TB (provide first line DST	☐ New ☐ Previously treated ☐ At diagnosis ☐ Contact of MDR/RR TB ☐ Follow-up SM +ve ☐ Private referral ☐ Discordance resolution	PMDT TB Reg No._____ DR TB NIKSHAY ID:_____ Regimen: ☐ Regimen for H Mono/Poly resistant TB ☐ Regimen for MDR/RR -TB ☐ Regimen for MDR/RR -TB + FQ/SLI resistant ☐ Regimen for XDR-TB ☐ Regimen with Bedaquiline for MDR TB+ FQ/SLI resistance ☐ Regimen with Bedaquiline for XDR-TB ☐ Regimen with Bedaquiline for failure of regimen for MDR - TB ±FQ/SLI resistant ☐ Regimen with Bedaquiline for failure of regimen for XDR-TB ☐ Regimen for mixed pattern resistance Treatment ☐ Month ☐ Week:_____
☐ Presumptive H mono/poly (provide first and second line DST)		
☐ Presumptive XDR TB (provide first and second line DST)	☐ MDR/RR TB at Diagnosis ☐ ≥4 months culture positive ☐ 3month for persistent culture positive(treatment month_____) ☐ Culture reversion ☐ Failure of MDR/RR-TB regimen ☐ Recurrent case of second line treatment ☐ Discordance resolution	

Test Requested:

☐ Microscopy ☐ CBNAAT ☐ Culture ☐ DST ☐ Line Probe Assay ☐ Gene Sequencing
☐ Other (Please Specify):_____

Requestor Name, Designation and Signature:_____

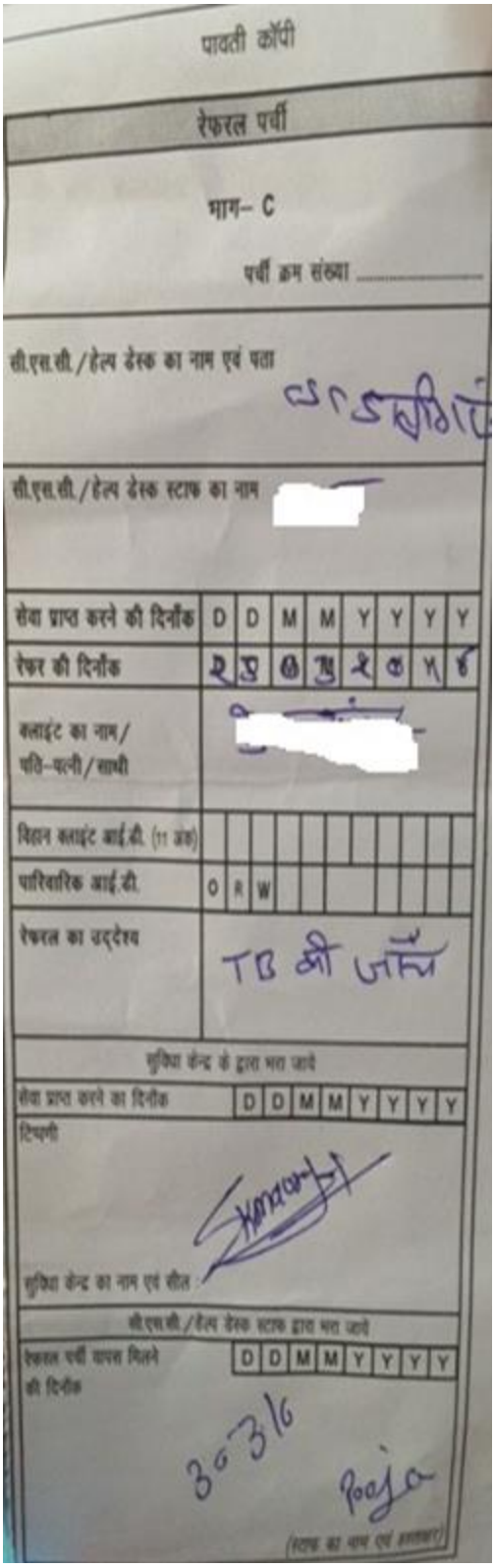
Contact Number:_____ Email ID:_____

Results: **CDL NIKSHAY ID Generated:_ _- _ _ _-_ - C-_ _-_ _ _ _ _**

			Microscopy (☐ ZN ☐ Florescent)				
	Lab Sr. No.	Visual appearance	Result				
			Negative	Scanty	1+	2+	3+
Sample A							
Sample B							

Date tested: _____ Date Reported: _____ Reported by: _____

(Name and Signature)



पावती कॉपी

रेफरल पर्ची

भाग– C

पर्ची क्रम संख्या .....

सी.एस.सी./हेल्प डेस्क का नाम एवं पता

सी.एस.सी./हेल्प डेस्क स्टाफ का नाम

सेवा प्राप्त करने की दिनाँक	D	D	M	M	Y	Y	Y	Y
रेफर की दिनाँक	२	७	०	३	२	०	१	६
क्लाइंट का नाम/ पति-पत्नी/साथी								
विशेष क्लाइंट आई.डी. (11 अंक)								
पारिवारिक आई.डी.	O	R	W					
रेफरल का उद्देश्य	TB की जाँच							

सुविधा केन्द्र के द्वारा भरा जाये

सेवा प्राप्त करने का दिनाँक	D	D	M	M	Y	Y	Y	Y

टिप्पणी

सुविधा केन्द्र का नाम एवं सील

सी.एस.सी./हेल्प डेस्क स्टाफ द्वारा भरा जाये

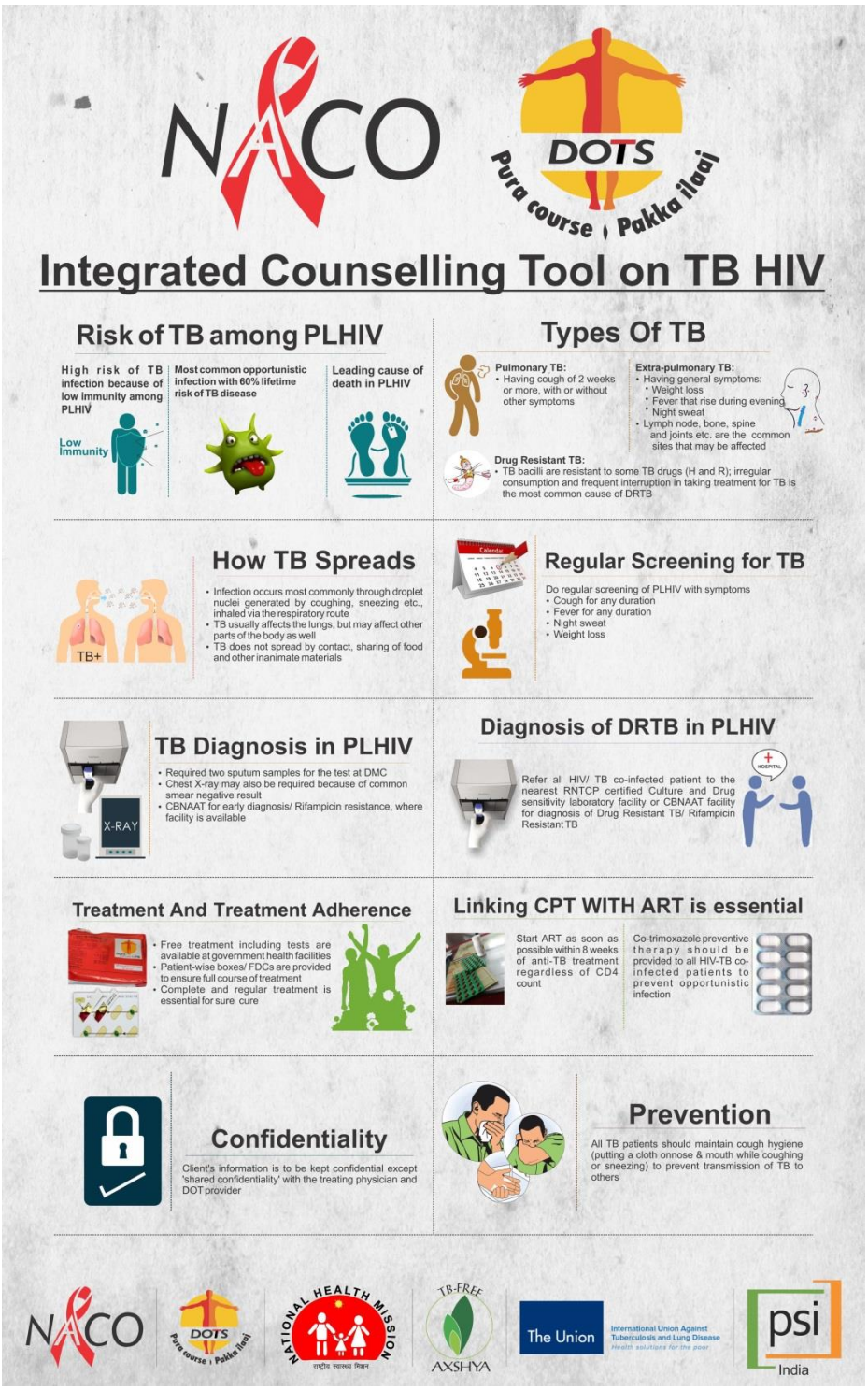
रेफरल पर्ची वापस मिलने की दिनाँक	D	D	M	M	Y	Y	Y	Y

30-3-16

Pooja

(स्टाफ का नाम एवं हस्ताक्षर)

Referral slips: Used for referring TB suspects from CSC to RNTCP DMCs



Integrated 10 point counselling tool to be used by counsellors and peer- counsellors