Internship Report

I joined The International Union against TB and Lung Diseases (IUATLD) since 21st January, 2011 as a Technical Consultant for ACSM, under the Global Fund Round 9 Project of Stop TB Partnership. For the last few months, I have been working in Uttarakhand in close association with the State TB Cell of Uttarakhand and the NGO, Mamta Samajik Sanstha (MSS), a sub-recipient of The Union and co-ordinating the Project activities in different Districts of Uttarakhand.

IUATLD - Organizational Profile

The Union was founded in 1920 as the International Union Against Tuberculosis when 31 countries banded together to fight one of humanity's oldest and most devastating diseases. They sought to leverage their individual efforts by creating a central resource for education and training, dissemination of research, technical assistance and advocacy for their common cause.

Today The Union has grown into a non-profit Institute with 300 experts in TB, HIV, tobacco control and other issues working out of 12 offices worldwide and a federation of 3,000 organizations and individuals who are committed to the same goals.

Mission Vision and Values

The mission of the International Union Against Tuberculosis and Lung Disease (The Union) is to bring innovation, expertise, solutions and support to address health challenges in low- and middle-income populations. With nearly 10,000 members and subscribers from 152 countries, The Union has its headquarters in Paris and offices serving the Africa, Asia Pacific, Europe, Latin America, Middle East, North America and South-East Asia regions. Its scientific departments focus on tuberculosis, HIV, lung health and non-communication diseases, tobacco control and research. The Union is most widely known for the research that led to the global strategy for treating and controlling tuberculosis. Adopted by the World Health Organization in

1995, The Union model is part of the internationally recommended Stop TB Strategy that has been used to treat 37 million people around the world. Drawing on this first success in addressing TB from medical, political, social and organizational perspectives, The Union has since developed programmes addressing TB/HIV, asthma, childhood pneumonia, tobacco control and other related issues. The emphasis is on providing health solutions for the poor.

History

The Union is the oldest International Non Government Organization dealing with health in the world. It's origins date back to 1867 when International experts convened in Paris to discuss the intractable and pervasive problem of Tuberculosis, then known as the 'White Plague'.

This conference pointed to the need of a central organization to co-ordinate meetings, disseminate the latest research and provide training and other resources.

1902 – The Union Predecessor, The Central Bureau for the Prevention of Tuberculosis was established in Berlin. The Bureau conducted a number of international seminars and conferences to create a platform for Global interest into the menace of Tuberculosis till the first World War.

1920 – With the conclusion of World War 1, there was a sudden upsurge in TB cases world-wide. Post World War 1, in 17 th October, An International Conference was convened in Sorbonne in Paris, where 31 countries pledged to work together to fight Tuberculosis. This led to the formation of IUAT, or The International Union Against Tuberculosis, which replaced the previous Bureau and started working with renewed vigour.

1946 – Post World War 2, the IUAT became the first NGO to be Officially recognized by the World Health Organization (WHO), which was established in 1946 itself. Since then The Union's collaboration with WHO began.

1952 – Significant structural reforms were carried out in IUAT, like the introduction of a Full-Time Executive Director. In 1953, a number of Scientific Committees were created to foster discussion of strategies for TB Control.

1957 – Validation of Prof. John Crofton's "Edinburg Method" of TB Treatment by IUAT efforts. IUAT participated in an international collaborative Clinical Trial of 17,391 patients in 17 countries, which proved the effectiveness of "Edinburg Method" in treating TB cases.

1961 – IUAT launched the Mutual Assistance Programme to encourage transfer of Technology, Resources and Information from the Industrializes Nations to the Developing nations. This project primarily included a series of Travelling Seminars.

1965 – Tuberculosis Surveillance Research Unit (TSRU) was established as an international research body under the auspices of the IUAT and the Royal Netherland Tuberculosis Association.

1969 – The IUAT published it's first Technical Guide for TB – " Sputum Examination for TB by Direct Microscopy in Low Income Countries".

1973 – With the decreasing vulnerability of global population to Tuberculosis, IUAT started expanding it's horizon to Respiratory Medicine, by starting a number of Projects involving other Lung Diseases.

1977 – A new model of TB Treatment was introduced by IUAT and TSRU. This model was implemented in Tanzania, as the treatment norm for the National TB Control Programme of Tanzania.

1984 – IUAT Registered with USAID (United State Agency for International Development).

1986 – IUAT was finally renamed as International Union Against Tuberculosis and Lung Diseases (IUATLD).

1993 – Tuberculosis was declared as a Global Emergency because of the uncontrolled flare up in the number of cases, especially in the Developing and Under Developed countries. IUATLD aggressively started to increase its functional network.

1995 – Finally, DOTS strategy was introduced world wide and IUATLD was one of the prominent advocators of the Strategy.

1995 – UATLD started covering a number of Lung conditions like – Asthma, Pneumonia and Tobacco Control.

1998 – IUATLD joined WHO for the launch of Stop TB Initiative, which later on was known as Stop TB Partnership.

Location The Union has its headquarters in Paris, France and offices serving the seven Union regions: Africa, Asia Pacific, Europe, Latin America, Middle East, North America, and South-East Asia.

- Europe
- Africa
- South East Asia
- Asia Pacific
- North America
- Latin America
- Middle-East

The Union South-East Asia Office in Delhi is The Union's largest region office. USEA works with all scientific departments to implement grants, trainings and technical support programmes with a major focus on TB and tobacco control.

Working in Bangladesh, India, Indonesia and other countries through a network of consultants and strong partnerships with governments, civil society, corporations and international agencies, USEA brings global expertise to Union services in the region. Since 2010, a major civil society TB control project funded by The Global Fund is being managed by a dedicated team from the office, which also houses the Secretariats of the WHO sub-group on TB & Poverty and a civil society Partnership for TB Care and Control in India.

Location of USEA office

C-6, Qutub Institutional Area
New Delhi - 110016
INDIA
Tel: (+91) 11 46 054 400
E-mail: **SouthEastAsia@theunion.org**

Structure, Departments and Area of interest

One of the great strengths of The Union is this dual structure. Through the General Assembly, members participate in setting the agenda for the Institute, approve plans and elect the Board of Directors that governs the whole organization. The chart below depicts the interrelationship between the Institute and the Federation:

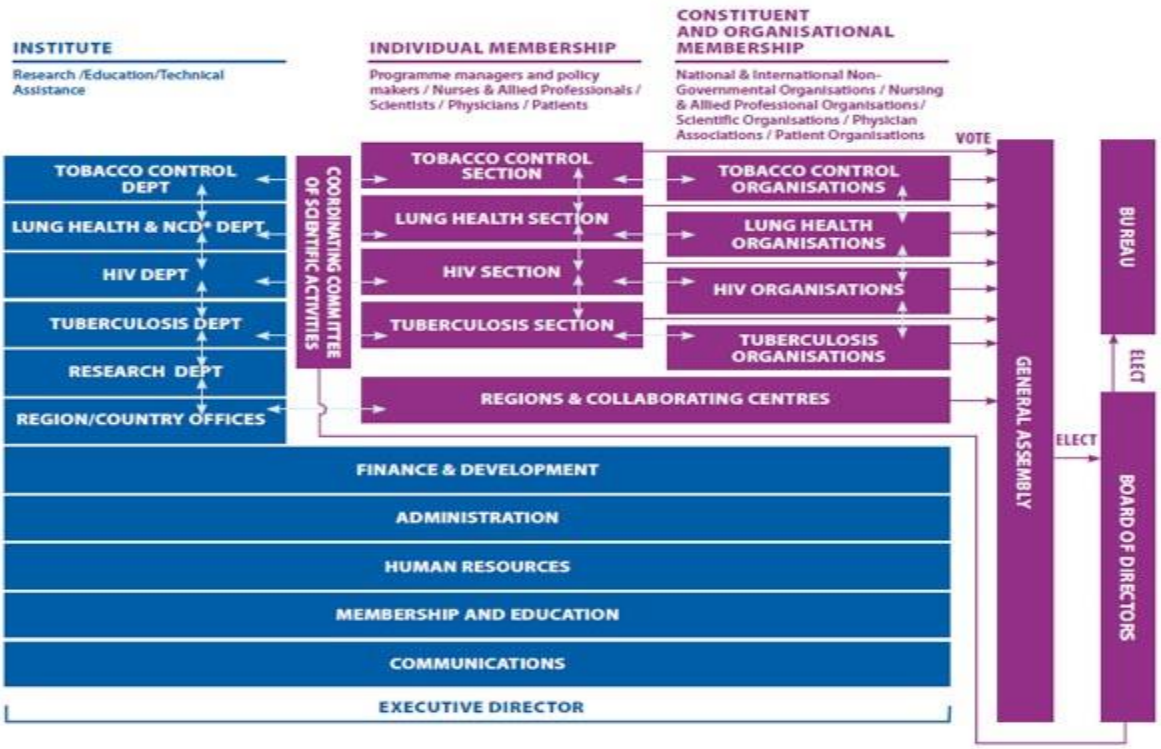


Fig. 1 Institute and Federation

The Federation comprises members in several categories: constituent members (one per country), organizational members (any organization with compatible goals), and individuals (including benefactors, 15-year members and honorary members).

Departments

- Tobacco Control Department
- Lung Health and NCD Department
- HIV Department
- Tuberculosis Department
- Research Department

My Area of Work at IUATLD

I joined IUATLD on 21st January 2011, in Tuberculosis Department, As a Technical Consultant for ACSM for in the GFR9 Project to co-ordinate Union Activities in the state of Uttarakhand. Hence I have been working as a part of the PMU of this ongoing Project, and have been providing technical support to the Sub-recipient of The Union, MSS, a local NGO in implementing Project activities. I have been working in close association with the State TB Cell, and providing them technical support, whenever needed for RNTCP implementation.

About Global Fund Round 9 (GFR9) Project or Project AXSHYA

Fig. 2 Logo Axshya

Project AXSHYA or GFR9 is an initiative to strengthen Civil Society Involvement in Tuberculosis control. This Project aims to improve access to quality TB Care and Control through a partnership between Government and civil society. In India, it supports the RNTCP programme to expand its reach, visibility and effectiveness and engage community based providers to improve TB services, especially for women, children, marginalized, vulnerable and TB-HIV co-infected population.

- International Union Against Tuberculosis and Lung Disease (The Union), New Delhi is the Principal Recipient of this fund.
- Co Principal Recipients are World Vision India and Central TB Division
- Grant document signed between The Global Fund and The Union on May 11, 2010.
- First Phase of the project is from April 2010 to March 2012.
- In India, Project will cover around 23 States and 374 Districts.
- 16 States will be exclusively covered by The Union, 5 states common with World Vision India, and 2 exclusively for World Vision India.
- The States/ Districts were chosen based on the programme performance.
- Phase I coverage- 21 States and 240 Districts (Year 1- 90 Districts and Year 2 - 150 Districts) for The Union.
- Guiding Principles of the Project

    - Universal Access to quality TB services
    - Community Participation
    - Sustainable interventions
    - Equitable Distribution with Social and gender sensitivity.

  Key Interventions –

    - Support to Partnership for TB Care and Control in India
    - Public education - Mass / mid media
    - Social mobilization for greater participation in RNTCP
    - Engage all care providers
    - Capacity building of different cadres of health workers and community volunteers
    - Advocacy to increase political commitment
    - Community systems strengthening – NGOs and the Programme
    - Community TB Care to facilitate diagnosis and treatment

- Demand Generation through community outreach
- TB/HIV coordination
- Coordination at different level with programme
- Operational research and training to strengthen ACSM

As a Technical Consultant for ACSM under this GFR9 Project for the state of Uttarakhand, I have been involved in planning and implementation of ACSM activities in all the project districts of Uttarakhand which include Haridwar, Almora and Dehradun.

In April 2010, Project was launched in Uttarakhand in two Districts – Haridwar and Almora.

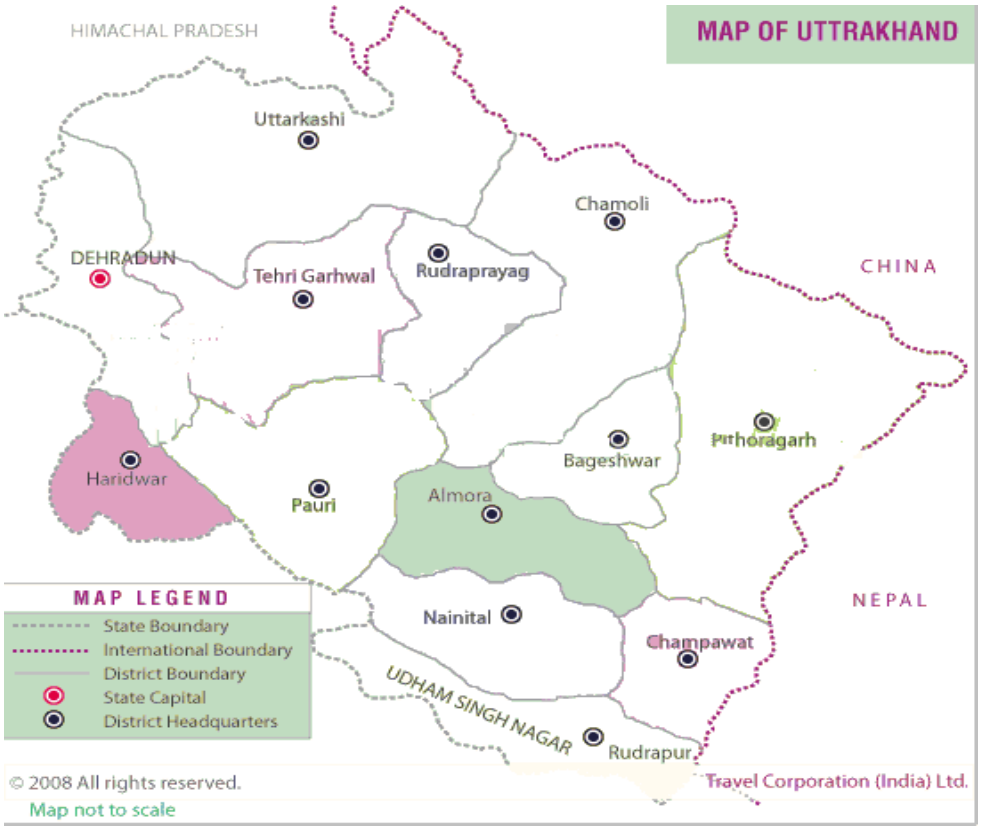


Fig. 3 Project Launch in Uttarakhand Year 1

- In Year 2, i.e. April 2011 onwards, the Project has been launched in 8 other districts of Uttarakhand, namely –

  -Bageshwar
  -Chamoli
  -Champawat
  -Dehradun
  -Garhwal
  -Nainital
  -Pithoragrah
  -Rudraprayag

Fig. 4 Project Launch in Uttarakhand Year 2

Involvement in Managerial tasks

Since my joining the project on 21st January,2011, I have been involved in the following list of activities in the state of Uttarakhand –

Table 1 – Activity list till end of year 1

SL no	Activity	Target	Status	My Role
1	Sensitization meeting with Panchayati Raj Institution (PRI)(1Day)	4 sessions	Completed	Coordinated
2	Sensitization meeting with Self Help Groups (SHG)(1Day)	5sessions	Completed	Coordinated
3	Sensitization meeting with Groups and Associations (1 day)	4sessions	Completed	Coordinated
4	Training for Public sector, Private sector, corporate sector & Public Health Administrators. (1 day)	2sessions	1 session	Organized
5	Trainings for NGOs TOT (1 day)	1session	completed	Coordinated
6	Development of Advocacy tool	Pt.Charter	Developed	Creative input
7	Printing and Dissemination of Advocacy tool	Pt.Charter	Printed	Creative input
8	Meetings-SR Review, GF deliverable		Attended	Technical Input

Involvement in Other Activities

- Participation in Meetings of the PMU Team at The Union SE Asia Office
- Participation in the Meetings with the PMU team and Co-Recipient World Vision India.
- Participation in Modular Training Programme on TB in LRS Institute of Tuberculosis and Respiratory Diseases, in New Delhi
- Participation in OR Workshop in USEAOffice.
- Participation in World TB Day Celebration in Dehradun by the State TB Cell.
- Going to local field visits in Dehradun to the DTC and TUs with the WHO Consultant and the State RNTCP Officials..
- Going for meetings with the DTOs in Haridwar and Almora district.
- Contributed creative input in the Designing of the Logo for Project Axshya.

- Contributed creative input in the designing of Diary for New Financial Year for the Union.
- Attended Re-briefings of Project Activities at USEA Office.

Reflective Learning

Soon after Joining IUATLD, I accompanied Dr. Subhash Yadav , working with The Union as a Technical Officer for Project Axshya , for a visit to Dehradun, to attend a meeting with the State TB Officer and WHO Consultant for Uttarakhand. I had a brief sensitization about the TB scenario in the state.

During another visit to Dehradun to attend the Quarterly Review Meeting of the District TB Officer, I had a detailed insight into the TB scenario of Uttarakhand. I learned that the case detection Rate of New Sputum Positive Cases which is one of the Key indicators in RNTCP is a dismal 60% by year end, 2010; much below the National average and the RNTCP standard of 70% of NSP case detection Rate. The Cure Rate, on the other hand, was showing a satisfactory 85% , which is equal to the RNTCP objective. In the same meeting it also emerged that lack of training activities of the RNTCP staff was a major contributing factor for the poor programme performance. The DTOs of 4 districts around 20 permanent Laboratory Technicians and nearly 40% of MO/MOTCs were not trained in RNTCP.

During another visit to Dehradun to attend the Quarterly Review Meeting of the DTOs, I had a detailed insight into the TB scenario of Uttarakhand. I learned that the case detection Rate of New Sputum Positive Cases which is one of the Key indicators in RNTCP is a dismal 60% by year end, 2010; much below the National average and the RNTCP standard of 70% of NSP case detection Rate. The Cure Rate, on the other hand, was showing a satisfactory 85% , which is equal to the RNTCP objective. In the same meeting, also, emerged as a matter of concern, is the lack of Training Activities of the RNTCP staff, as a major contributing factor for the poor indicators. The DTOs of 4 districts were not trained, around 20 permanent LTs were found to be still untrained, around 40% of MO/MOTCs were not trained on RNTCP. From these figures, I was convinced with the fact that there is insufficient ACSM activities in the state, which is contributing to poor case detection rates in Uttarakhand.

The Modular Training on RNTCP from 31-01-2011 to 12-02-2011 in the LRS Institute of Tuberculosis and Respiratory Diseases in New Delhi proved to be really fruitful for me. The Detailed residential training imparted me the technical knowledge about Tuberculosis Diagnosis and Treatment, apart from the Technical details about RNTCP, like the Organizational structure of RNTCP, Laboratory Diagnosis and Quality Assurance, Infecion Control, Treatment Services, Role and Scope of ACSM in RNTCP, Pogramme Monitoring, Programme Management including role of PPM, Logistics Management Including Preventive Maintenance, Programme Supervision and Evaluation and TB-HIV coordination. The field visits during the training helped me to get a peek into the Documentation involved at various levels.

The regular meetings at USEA Office and the brainstorming sessions helped me to have an idea about the Planning of Strategies for implementation of ACSM activities, like how to decide the Target Audience for these activities, How to conduct the activities, When and where to conduct, How to Take care of the Financial Aspect of the Activities, How to engage Civil Society and Other Stakeholders, What type of ACSM Tools and Materials are to be used, How to develop these materials, How to build an Effective NGO Network, How to Monitor and Evaluate these Activities, How to Mobilize Resources and how to Co-ordinate with the Government Machinery for TB Control as well as the Community Representatives etc.

Once in the field, the Regular visits to the local TUs and the STDCas well as the DTCs, helped me to learn the practical aspects of Programme Implementation and Documentation. The sensitization meetings with the SHGs and PRIs enriched me with the Practical knowledge about Strategy formulation for all the activities, to elicit better penetration and Effective Sharing of Information and Ideas. Especially the visits to Haridwar and Almora helped me to learn Appropriate ACSM Strategies for enhanced involvement and Motivation of the Providers as well as the clients concerned.

While conducting various activities in Uttarakhand, I had a chance to interact with the Providers from Diverse backgrounds, starting from ASHAs to the Doctors from Public, Corporate and other sectoral establishments. These Activities provided me an effective platform for knowledge sharing.

The SR Review Meetings and the Re-briefing sessions gave me the opportunity to interact with the Partner Organizations of IUATLD, which, in turn, gave me a fairly good idea about different strategies and approaches to ACSM activities, about documentation and resource utilization.

Regular Coordination with the STC and interaction with the State TB Officials of Uttarakhand has helped me enormously to Learn about the Demography of the State and to identify the important stakeholders in different areas; and also to identify Gap areas in performance.

Overall, these 3 months at IUATLD have been a great learning experience, which, I believe, would help me with my work for This GFR9 Project.

Introduction

TB or Tuberculosis is an infectious disease caused predominantly by Mycobacterium Tuberculosis. Tuberculosis can be classified as either Pulmonary or Extra-Pulmonary. Pulmonary TB is characterized by the formation of lesions in the lungs. It is further sub-divided into Smear-Positive and Smear-Negative cases.

Smear Positive Pulmonary TB are the cases with one or two sputum smears positive for AFB out of the two sputum specimens subjected for smear examination by direct microscopy ; on the other hand Smear Negative Pulmonary TB are the patients with two initial negative smear results, whose symptoms persist after two weeks of Broad Spectrum Antibiotics and whose repeat sputum examination results are also negative along with radiological abnormalities suggestive of active TB.

Extra-Pulmonary TB is the Tuberculosis of organs other than the Lungs, such as Pleura, Lymph nodes, Intestine, Genito-Urinary Tract, Joint and Bones, Meninges of the Brain etc.

Tuberculosis is a major chronic disease contributing significantly to the Global disease burden. Annually, around 9.4 million people (139/ Lakh/year) are being diagnosed as having TB (Incidence) out of which, in India only, around 1.9 million (168/Lakh/year) cases are being diagnosed annually.

Ideally, according to RNTCP Norms The ratio of New Smear Positive Cases to The New Sputum Negative Cases should be 1:1.2, but for operational feasibility, RNTCP considers a ratio of 1:1 to be optimum in detection of new cases. It indicates, out of all the newly diagnosed cases, at least 50% of cases should be Sputum Positive. Any discrepancy in this ratio is a matter of concern, and is reflective of inadequacy of a number of factors, especially adequate radiological and other diagnostic services. Similarly, Extra-pulmonary TB cases comprises around 15% to 20% of total TB cases. Extra-pulmonary tuberculosis (EPTB) is a milder form of disease in terms of infectivity as compared to pulmonary TB (PTB). Whereas sputum can be easily obtained for the detection of disease in lungs, diagnosis of EPTB is often difficult requiring

invasive and expensive serological/radiological investigations. These are some conditions which determine the case Detection Ratios of New cases .

This study is Cross-Sectional and Retrospective in nature, based on the records of last 8 quarters (2 years) in Almora District in the state of Uttarakhand, and through this study, it is expected to document some valuable information about the case finding trends of New TB cases, the ratio of New Sputum Positive Cases and New Sputum Negative Cases, and the ratio of New Pulmonary Cases to New Extra-Pulmonary Cases; it is also expected to observe the Discrepancies in the ratios and find out the probable reasons for these discrepancies from the perspective of RNTCP programme personnel and local RNTCP staff/ provider.

This study also incorporates the assessment of the intensive ACSM activities in the District of Almora that have been conducted under the RNTCP - ACSM strategy and by The International Union Against TB and Lung Disease and MSS, as a joint initiative, under the aegis of Global Fund Round 9 Project under stop TB Partnership ; and analysis of the effects of such activities on New Case Finding Trends either at process level or at indicator level. The intensification of ACSM Activities is an important component of RNTCP. Especially ACSM activities support the efforts for improving case detection, treatment adherence, combating stigma and Discrimination and mobilizing political commitment.

Background

This study has been based on District Almora. Almora is located in the South West part of the state in the Kumaon Region.

Fig. 5 Districts of Uttarakhand

Fig. 6 Map of Almora District

It is perched on a 5 km horse-shoe shaped ridgeat 5,400 ft atop Kashya Hill in the Katyuri Valley in Central Kumaon. The District Head-quarter, the Almora Town is about 70 km North East of Nainital and around 367 km North East of Delhi. The District records a heavy rainfall and the roads are susceptible to land-slides during the rainy season. The Geographical attributes of the District has been considered a major deterrent for good accessibility of Health care services, for a population of 6,14,000 people (Source : Population Census Data'2011).

Climate - Alpine and Humid subtropical

Temperature Range	•	28 - -2 °C (86 °F)
During Summers	•	28 - 12 °C (61 °F)
During Winters	•	15 - -2 °C (63 °F)

Fig. 7 – Climate and Temperature of Almora

Almora District has 3 TB Units, located respectively in Almora, Ranikhet and Bhikhsyasen. All these three TUs are around 50-70 km apart. These three TUs have altogether 14 DMCs under them. 7 DMCs are under Almora TU, 4 under Ranikhet and 3 DMCs are under Bhikshyasen TU. The DTC is located in Almora Town.

Table 2 District Profile of Almora

1	Population - 2011 Census	614000
2	No. of TUs	3
3	No. of DMCs	14
4	No. of ICTC centers	4
5	No. of PHIs	71
6	No. of DOTS Centres	166
7	No. of ASHAs working as DOT provider	84
8	No. of NGOs involved in signed schemes	2
9	No. of Medical Colleges	0

Genesis of Problem and Rationale of Study

Almora district has recently seen a surge of Migration of its population, which is evident from the Census Data. The latest Data shows that population of Almora is 6,14,000. But the Projected population is around 7,28,000. Another data shows the population was 7,28,619 in 2010. Hence,

it is observed that the sudden surge of out-migration create a drastic change in the Demographic charactrer of the district. Because of this migrated population, the case detection rate of TB may also decrease suddenly. In Almora District, the Case Detection rate of NSP cases have shown considerable Decline in the last few quarters. The Case Detection Rate for NSP in 2010 was as follows - 1st Quarter – 57 %

2nd Quarter – 74%

3rd Quarter – 59%

4th Quarter – 49%

It is evident that the Case Detection Rate is bellow 75% in all the quarters, particularly in the last quarter. This rate is also much lower than the State average, i.e. 60%. It is therefore an important issue in Almora District. The decrease in the Case Detection Rate of NSP cases needs to be further investigated and the reasons for the same should be found out.

Not only NSP cases, The number of NSN cases and EPTB cases registered have also been bellow the RNTCP standard. Looking at the poor performance of the District, as per as the Case finding of New Cases of TB are concerned, it is important to study the Case Finding Trends in the District and document the probable reasons leading to poor results. Not much research has been done into the case finding trends of NSN and New EPTB cases in this Area, although the data from the STC database and publications clearly demonstrates the existence of a discrepancy in the ratio of number of registered NSP and NSN cases and that of PTB and EPTB cases, apart from the significantly low CDR of NSP cases. Looking at the fact that around 56% to 63% of NSN cases may turn into NSP cases, and an equally significant number of EPTB cases may turn into PTB cases, it is imperative to probe further into the case finding trends of NSN and EPTB cases, so that the factors bringing about discrepancy in these ratios can be identified, understood and proper strategic interventions could be taken.

Not much emphasis have been given to the assessment of ACSM activities and the Effects of ACSM activities in Case Finding Trends in the District. Not much research has been done in this matter, despite the fact that Intensified ACSM activities can bring about significant changes in Case finding Trends in the Process level, and in the long run, even in Indicator level. It has also been observed that to develop Need Based ACSM Strategy, it is imperative to carry out a detailed Communication Needs Assessment, involving the expressed or unexpressed requirements of the community/ locality, what is currently being available or the gap between

what exists and and what is required. Identifying the needs is the starting point for any intervention or developing need based ACSM Activities. No evidence of such assessment during last 8 quarters could be found in Almora District, either in the form of research document or official record. This particularly led to the thought that The ACSM activities, being carried out in Almora District need to be assessed for evaluation of success or failure, the effects in processes in RNTCP and Government machinery, to find out the gap areas and to develop an effective and Need Based ACSM strategy. These observations justify the incorporation of Assessment of ACSM activities in this study, especially the assessment of Provider's perspective of ACSM is expected to document a number of important facts and issues.

Problem Statement

The case finding trends of NSP, NSN and EPTB cases is an important indicator of the availability, accessibility, efficiency and effectiveness of the TB services. The discrepancy in these case finding trends and variation from the RNTCP standards, observed in the District of Almora is a matter of concern and the factors responsible for such variations need to be identified for better implementation of RNTCP in the district. Moreover, the assessment of ACSM activities is also proven to be the need of the moment, for identification of the gap areas, to probe into the effects of ACSM in the case finding trends and development of Need Based ACSM Strategies. In Almora District of Uttarakhand, the overall low Case detection rate of NSP cases, comparatively low number of registered cases of NSN and that of EPTB cases and lack of assessment of ACSM activities are the prominent problem areas as per as implementation of RNTCP is concerned. Through this study, it is expected to document information regarding these areas and also to aid-in the betterment of TB Services in the District.

Review of Literature

The Case Finding Trends of New TB Cases is an important indicator of the performance of TB services. The CDR of NSP cases, being one of the two indicators of RNTCP implementation, the low CDR of NSP cases, as compared to the RNTCP standard is reflective of inadequate TB Services and a host of other factors. According to "Module 5 of RNTCP Training Module, CTD,

DGHS, MOHFW", ideally, CDR is an effective indicator only at and above the District level, because of the heterogeneity of Smear Positive TB Incidence at local levels depending on living conditions, socio-economic status, migration etc. Hence for levels below the District level, some other Programme Performance Indicators are used, like –

- Proportion of New Smear Positive Cases among all new pulmonary cases
- Proportion of New Smear Negative Cases among all new TB cases
- Proportion of New Extra-Pulmonary cases among all new TB cases etc.

Hence, though CDR of NSP cases is the principal indicator to study the Case finding trends, other indicators as mentioned above can also be used to elicit information and for monitoring and evaluation.

The Case Finding Rates are very important indicators. The poor number of registered cases of New Pulmonary TB cases indicates the fact that there are missed or delayed diagnosis of TB cases, which in turn Increase the chances of undocumented transmission from these undiagnosed, unregistered cases.

A study conducted at McGill University, Montreal, Quebec; University of Alberta, Alberta; University of Toronto, Toronto, Ontario; and University of British Columbia, Vancouver, British Columbia, Canada indicates – Delayed diagnosis of active pulmonary tuberculosis (TB) among hospitalized patients is common and believed to contribute significantly to nosocomial transmission. This study was conducted to define the occurrence, associated patient risk factors, and outcomes among patients and exposed workers of delayed diagnosis of active pulmonary TB.

Apart from pulmonary TB, Extra-Pulmonary TB is a major concern. While pulmonary tuberculosis is the most common presentation, extra-pulmonary tuberculosis (EPTB) is also an important clinical problem. RNTCP guidelines for Pulmonary TB have been implemented in the country with strict Monitoring. Also, the diagnostic facilities are Accessible and Available. But the same for diagnosis of EPTB is not yet up-to the mark in our country. This brings about discrepancies in case finding rates of New EPTB cases.

A study on Extra-Pulmonary TB conducted in Department of Medicine, All India Institute of Medical Sciences, New Delhi & Sri Venkateswara Institute of Medical Sciences, Tirupati, India has thrown light into the various issues of diagnosis of EPTB. The study reveals that The human immunodeficiency virus (HIV) and acquired immunodeficiency syndrome (AIDS) pandemic has resulted in changing epidemiology and has once again brought extra-pulmonary tuberculosis (EPTB) into focus. EPTB constitutes about 15 to 20 per cent of all cases of tuberculosis in immunocompetent patients and accounts for more than 50 per cent of the cases in HIV-positive individuals. Lymph nodes are the most common site of involvement followed by pleural effusion and virtually every site of the body can be affected. Since the clinical presentation of EPTB is atypical, tissue samples for the confirmation of diagnostic can sometimes be difficult to procure, and the conventional diagnostic methods have a poor yield, the diagnosis is often delayed. Availability of computerized tomographic scan, magnetic resonance imaging laparoscopy, endoscopy have tremendously helped in anatomical localization of EPTB. The disease usually responds to standard anti-tuberculosis drug treatment. Biopsy and/or surgery is required to procure tissue samples for diagnosis and for managing complications.

Similarly, the diagnosis of NSN cases is also a matter of immense concern for better implementation of RNTCP. Unlike NSP cases, Diagnosis of NSN cases requires detailed clinical, radiological and laboratory attention. The Prime focus of RNTCP being concentrated in the diagnosis of NSP cases in the practical context, much focus have been diverted from NSN cases. This may lead to increased infection transmission and further increase in the number of NSP cases, as NSN cases, if not diagnosed and treated timely, may convert to NSP cases. An Article on Tuberculosis in India published in The Indian Journal of Tuberculosis has specifically pointed out that around 50% to 65% of NSN cases, if left untreated, may convert to NSP cases. This is reflective of the grave situation that missed diagnosis of NSN cases may lead to.

Another study on ‘Identifying Pulmonary Tuberculosis in Patients With Negative Sputum Smear Results’ published in the Official Publication of American College of Chest Physician brings into light the following facts that patients with active TB who have negative sputum smear results are also capable of transmitting the infection. The relative transmission rate of smear negative TB patients compared to smear-positive TB patients has been calculated at 22% using a

molecular epidemiologic technique. Although persons with smear-negative TB are less infectious than the smear-positive patients, their overall contribution to disease transmission is considerable because half of all patients with TB can present with negative sputum smear findings. The same study also reveals that Researchers in Sub-Saharan countries have found an increased prevalence of smear-negative TB in their HIV-infected patients. However, this association between HIV and AFB smear-negative disease has not been observed in the United States and is believed to be an association of significant importance in developing Nations including India. Thus, early identification of persons who have TB, whether smear positive or smear negative, is desirable both to enable appropriate isolation procedures and to provide a basis for early institution of therapy. Conversely, correct prediction of persons who are unlikely to have TB is important as well to limit the expense and potential toxicity of empiric therapy.

Despite the initial clinical suspicion of TB, when a patient's sputum smear results are negative for AFB, the diagnosis of TB may by missed. For those patients with a high clinical suspicion, clinicians must face the dilemma of empirically treating or waiting for up to 8 weeks for the final culture results. Though newer rapid diagnostic tests are available in most large medical centers, they are expensive, have poor sensitivity and specificity. Hence, this situation gives rise to the need for developing a better clinical approach to NSN cases, development and establishment of affordable, accessible and effective Diagnostic services like X-ray, Lab services etc. with better penetrability.

Another Study conducted in Pusat Pakar Utara, Kedah on "Tuberculosis – Are We Missing the Diagnosis?" published in Singapore Med J 2002, emphasized upon another aspect of TB diagnosis. The study emphasized upon the role of health care providers in TB diagnosis. According to the study findings, More than 80% of new cases of pulmonary tuberculosis (PTB) are in an advanced stage at the time of diagnosis. The delay in diagnosis is mainly due to incorrect diagnosis by the doctors rather than patients' delay in seeking medical advice. Study findings revealed that most patients had sought medical attention early for symptoms suspicious of tuberculosis. However, omission to do the appropriate investigations or referral for an expert opinion led to failure of diagnosis. The patients had typical clinical features and the chest X-ray changes were highly compatible with PTB. They had seen many doctors including specialists but were not treated because sputum direct smears (often of a single specimen) were negative. In

many countries, approximately half of all tuberculosis cases are not bacteriologically confirmed for one reason or another. It is not uncommon to find smear-negative but culture-positive specimens, as high as 70% has been reported especially in the developing countries. Bronchoscopy is often helpful in the diagnosis of sputum negative cases. It was also found that out of 74 patients suspected to have smear-negative tuberculosis, bronchoscopy confirmed the diagnosis.

The same study also concludes that Sputum culture for M. tuberculosis or bronchoscopy, which is more likely to give positive results, should be more frequently done. In clinically highly probable cases where bacteriological confirmation is not possible, empirical treatment with the current chemotherapy is recommended because it is safe and would prevent spread, morbidity and mortality. Studies have found that 58 - 63% of smear-negative cases developed bacteriologically confirmed pulmonary tuberculosis during a follow-up period of three to 58 months.

The ACSM activities is an Integral part of RNTCP implementation. But Strategic development and implementation of ACSM activities is still at a nascent stage in India. The editorial of The Indian Journal of Tuberculosis' Jan, 2005, titled 'New challenges in RNTCP Implementation in India' reveals that Despite the success of the RNTCP, the visibility of the programme has not been at par with its achievements. Community participation, which is essential for the success and sustainability of any programme has not happened as desired. RNTCP national IEC media strategy has been developed, and prototype IEC material created and disseminated to the states for their use.

An Article on 'Working towards TB elimination the WHO Regional Strategic Plan (2006-2015)' published in Indian Journal of Communicable Disease, has expressed that community awareness and utilization of available services and civil society involvement in TB control continue to be inadequate. NTPs need equally to ensure equitable access to services for all TB patients particularly the poor and the marginalized, in urban slums and shanty towns, remote border areas or among displaced communities, if transmission and thereby the incidence of TB is to be reduced. Advocacy, communication and social mobilization efforts (ACSM) have not been satisfactorily addressed by most national TB programmes. High

profile, well designed and sustained ACSM campaigns are required to have a substantial impact. Thus, ACSM activities in TB Control need to be assessed for their accountability and to facilitate need based planning, which my study is expected to address with specific focus on Almora District.

Objective

General Objective

To study the case finding trends of New TB cases in context in reference to NSP – NSN ratio and PTB – EPTB ratio and the effect of ACSM activities on such trends.

Specific Objectives

- To find out the ratio of New Sputum Positive cases and New Sputum Negative cases, to evaluate this finding in terms of the National Standards as denoted by RNTCP norms.
- To find out the ratio of New Pulmonary TB cases and New Extra-Pulmonary TB cases, to evaluate this finding in terms of the National Standards as denoted by RNTCP norms.
- To highlight the discrepancies in the study finding and analyze the Probable causes of these deviations.
- To get a provider's perspective of the probable reasons and solutions of these deviations.
- To assess the effect of ACSM activities on the case finding trends of New TB cases, either in terms of processes or indicators.

Methodology

Design

This study is a mixed study consisting of both quantitative and qualitative components. To address the objectives outlined above, this study has been designed in two phases –Phase 1- The initial Secondary data based study, based on the Retrospective data or record of the last 8 quarters and the subsequent Phase2 - Qualitative study based on Unstructured interviews with the state, district and sub-district level RNTCP staff. Whether the 1st Phase involved Retrospective chart review, the 2nd Phase involves in-depth interview of a selected sample of providers, to arrive at an analytical summary on the findings of Phase 1 as well as to study the provider's perspective of the problem concerned.

Data Collection

The initial data collection was undertaken at District Alkmora and all the 3 TUs – DTC-TU, Ranikhet Civil Hospital TU and Bhikhyasain TU. During these visits, data related to New case finding were collected after consultation with DTO and MOTCs. The data collection involved retrospective review of records and the target Data comprised of the case finding from 1st quarter 2009 to 4th quarter 2010, in terms of the reporting cohorts. The source of the data was primarily the TU wise case finding report and the TB register entries of the corresponding cohorts. At each TU, total number of Registered cases of NSP, NSN and EPTB of the last 8 quarters, from 1st April 2009 to 31st March'2011 were noted down.

Data Analysis

This data was then compiled and analyzed using Microsoft Office Excel'2007. The analysis included quarter – wise computation of Annualized Case Notification Rate, Case Detection Rate, Ratio of NSP : NSN and that of PTB : EPTB, among all new TB cases.

The information indicators and trends so obtained were compared to RNTCP standardized Ratios and Norms and variations were documented. In the second phase of the study , which is an exploratory qualitative study, an attempt was made to enumerate and delineate the results for

above variations by means of a Qualitative Unstructured Interviews with the following Programme Personnel and Local RNTCP staff. –

- DTO – 1
- MOTC of TU – 3
- STS – 3
- STLS – 3State Level Programme Managers from State TB Cell – 3
- LT of TU and DMC – 3
- DOTS Provider - 2

A total number of 15 Respondents were interviewed using an Open Ended Questionnaire, comprising 10 open ended questions in context of the study objectives.
These responses were documented and presented as a part of discussion, after a qualitative analysis and interpretations. A summary report was prepared based on the responses of the interviews. Finally, based on these interpretations a set of Results and Recommendations were formulated.

Observations and Results

Phase 1

The Phase 1 of the study involved Retrospective review of records. After obtaining the necessary permissions from the DTO, I had reviewed the Quarterly Case Finding Reports at the 3 TUs in Almora District. The Data from the Case fining reports were then cross checked with the Data in the TB Register at each TU. This data basically involved the Total numbers of registered NSP, NSN and EP cases of last quarters. The Case Detection Rates NSP cases of last few quarters were also collected from the STC, to study the Performance Indicators of RNTCP at State and District level. The findings are listed in the subsequent tables –

Table 3 RNTCP Performance Indicators, Uttarakhand , 2006-2010

Performance Indicator	2006	2007	2008	2009	2010
Total Suspects Examined per lakh Population per qtr.	162	176	172	182	184
% CDR of NSP Cases	47	60	57	58	60
%Success Rate of NSP	88	87	85	85	85

From the above table, it is quite evident that, The CDR of NSP case, which is a Prime Indicator of RNTCP, is quite low i.e. 60% at the end of 2010, whether the RNTCP objective is to Achieve at least 70% of case detection rate of New Sputum Positive Cases. Uttarakhand is legging behind as compared to the National average, which is almost equal to the RNTCP standard.

Table 4 RNTCP Performance Indicators, Almora District, 2006-2010

Performance Indicator	2006	2007	2008	2009	2010
Total Suspects Examined per lakh Population per qtr.	185	243	164	219	158
% CDR of NSP Cases	34	47	48	47	48
%Success Rate of NSP	95	95	90	87	85

From the data listed in the table above, It is Evident that the CDR of NSP cases has not been changed much for the last 4 years, and the values since 2006 are significantly low. The last year value of CDR, of NSP cases is only 48%, which is far below the national average and even the state Average, whether the Treatment Success Rate of NSP cases is equal to the RNTCP standard, in 2010. This clearly shows that RNTCP Performance in case finding in Almora District is very poor as compared to treatment success rate.

Case Detection Rate of NSP (CDR) – It is the proportion of Notified NSP Cases out of the Estimated Incidence of Smear Positive Cases in that Population. This is expressed as percentage. This indicator should ideally not be used below the District level. This is because of the heterogeneity of Smear Positive Incidence at local levels.

One of the Objective of RNTCP is to achieve and maintain a CDR(NSP) of at least 70%.

$$\text{Now, CDR} = \frac{\text{Annualized case notification rate of New Smear Positive Cases}}{\text{Incidence of New Smear Positive cases}} * 100\%$$

Fig. Formula for computing CDR of New Smear Positive Cases

Computation of NSP: NSN ratio and PTB: EPTB ratio from TU-wise Data

The basic data which I had collected from the three TUs and the DTC, comprised of three important parameters –

- Total No, of New Sputum Positive Cases registered in each quarter
- Total no. of New Sputum Negative Cases registered in each quarter
- Total no. of New Extra-Pulmonary Cases.

Now, these total number of registered NSP,NSN and EPTB cases were listed in TU-wise tables and then from the tables, using Microsoft Office Excel 2007, the above mentioned ratios were computed, TU wise and quarter wise. The total number of New PTB cases is obtained by adding NSP and NSN cases.

Table. 5 Almora TU, NSP : NSN and PTB : EPTB, 2009 (First 4 quarters)

Indicators/ parameters	1st qtr.	2nd qtr.	3rd qtr.	4th qtr.	Yearly
No. of NSP cases	36	44	28	23	131
No. of NSN cases	10	24	21	5	60
No. of EPTB cases	33	41	27	23	124
NSP : NSN	3.6 : 1	1.83 : 1	1.33 : 1	4.6 : 1	2.2 : 1
PTB : EPTB	1.4 : 1	1.7 : 1	1.8 : 1	1.2 : 1	1.6 : 1

From the above table, the NSP : NSN ratio at the end of 4th qtr. 2009 is 2.2 : 1, The PTB : EPTB ratio is 1.6 : 1, which shows clear deviation from the RNTCP Standard. Especially in the 4th quarter, the ratio is too high – 4.6 : 1.

Table. 6 Almora TU, NSP : NSN and PTB : EPTB, 2010 (Last 4 quarters)

Indicators/ parameters	1st qtr.	2nd qtr.	3rd qtr.	4th qtr.	Yearly
No. of NSP cases	39	55	42	25	161
No. of NSN cases	9	14	4	3	30
No. of EPTB cases	27	32	24	16	99
NSP : NSN	4.3 : 1	4 : 1	10.5 : 1	8.3 : 1	5.4 : 1
PTB : EPTB	1.8 : 1	2.2 : 1	1.9 : 1	1.7 : 1	1.9 : 1

The NSP : NSN and PTB : EPTB ratios are not equal to RNTCP standards.

Table. 7 Ranikhet TU, NSP : NSN and PTB : EPTB 2009 (First 4 quarters)

Indicators/ parameters	1st qtr.	2nd qtr.	3rd qtr.	4th qtr.	Yearly
No. of NSP cases	28	42	28	19	117
No. of NSN cases	6	18	7	4	35
No. of EPTB cases	13	10	15	9	47
NSP : NSN	4.6 : 1	2.3 : 1	4 : 1	4.7 : 1	3.3 : 1
PTB : EPTB	2.6 : 1	6 : 1	2.3 : 1	2.5 : 1	3.23 : 1

Unlike the Almora TU, here on 2nd Quarter, PTB : EPTB ratio is slightly higher than the RNTCP Standards, i. e. 4 : 1.

Table. 8 Ranikhet TU, NSP : NSN and PTB : EPTB 2010 (Last 4 quarters)

Indicators/ parameters	1st qtr.	2nd qtr.	3rd qtr.	4th qtr.	Yearly
No. of NSP cases	17	28	35	19	99
No. of NSN cases	4	18	0	3	25
No. of EPTB cases	9	7	15	9	40
NSP : NSN	4.25 : 1	1.5 : 1	……..	6.3 : 1	3.9 : 1
PTB : EPTB	2.3 : 1	6.6 : 1	2.3 : 1	2.4 : 1	3.1 : 1

Here, at the end of 2nd quarter, the PTB and EPTB ratio is 6.6 : 1. Clearly, lesser number of EPTB cases were registered in that quarter at this TU, because of what, the ratio is higher than the RNTCP Standard. Also, no NSN case was registered in 3rd qtr.

Table. 9 Bhikshyasen TU, NSP : NSN and PTB : EPTB 2009 (First 4 quarters)

Indicators/ parameters	1st qtr.	2nd qtr.	3rd qtr.	4th qtr.	Yearly
No. of NSP cases	27	21	20	21	89
No. of NSN cases	2	3	6	4	15
No. of EPTB cases	5	4	2	2	13
NSP : NSN	13.5 : 1	7 : 1	3.3 : 1	5.2 : 1	5.9 : 1
PTB : EPTB	5.8 : 1	6 : 1	13 : 1	12.5 : 1	8 : 1

Here, in the 1st qtr., this TU shows significantly lower no of NSN cases registered, as compared to NSP cases. In the same manner,

Table. 10 Bhikshyasen TU, NSP : NSN and PTB : EPTB 2010 (Last 4 quarters)

Indicators/ parameters	1st qtr.	2nd qtr.	3rd qtr.	4th qtr.	Yearly
No. of NSP cases	16	30	24	16	86
No. of NSN cases	2	0	0	1	3
No. of EPTB cases	1	3	4	1	9
NSP : NSN	8 : 1	…..	…..	16 : 1	28.7 : 1
PTB : EPTB	18.1	10 : 1	6 : 1	16 : 1	9.8 : 1

Here, in this table, it is evident that absolutely no NSN cases were registered in the 2nd and 3rd quarters. In 4th quarter, the ratio of NSP : NSN is significantly higher.

Table 11 TU-wise Performance in case finding in last 8 quarters

Indicators/ parameters	Almora	Ranikhet	Bhikshyasen
No. of NSP Cases	292	216	175
No. of NSN Cases	90	60	18
No. of EPTB Cases	223	87	22
NSP : NSN	3.2 : 1	3.6 : 1	9.7 : 1
PTB : EPTB	1.7 : 1	3.1 : 1	8.7 : 1

From the Table above, It can be stated that, for last 8 quarters, the Bhikshyasen TU is not Performing well as the case finding of NSN and EPTB are concerned. Altogether, the TU is consistently showing very less number of Registered NSN and EPTB cases. There is gross discrepancy or variation from standard in the NSP : NSN and PTB : EPTB ratios. Overall, all the three TUs showed NSN registration, much lesser to the RNTCP standard., i.e. 1 : 1.

Table 12 Comparative Case finding Trends for last 8 quarters in Almora District

Indicator/ parameters	1stQ09	2ndQ09	3rdQ09	4thQ09	1stQ10	2ndQ10	3rdQ10	4thQ10
NSP cases	91	107	76	63	72	113	101	60
NSN cases	18	45	34	17	15	32	4	5
EPTB cases	51	55	44	34	37	42	53	26
NSP : NSN	5 : 1	2.3 : 1	2.2 : 1	3.7 : 1	4.8 : 1	3.5 : 1	25.2 : 1	12 : 1
PTB / EPTB	2.1 : 1	2.7 : 1	2.5 : 1	2.3 : 1	2.3 : 1	3.4 : 1	1.9 : 1	2.5 : 1

If we go through the table above, we can delineate the case finding trends in Almora District for last 8 quarters. The following points can be highlighted, with special focus on the NSP : NSN ratio and PTB : EPTB ratio –

- At the end of 4th quarter 2010, the NSP : NSN ratio in Almora is 4:1 instead of the ideal 1:1 of RNTCP Standard. Similarly. On the other hand, the PTB: EPTB ratio is 2.5:1, instead of the ideal 4:1 of RNTCP standard.

- The no. of NSP cases registered during last 8 quarters is not showing significant quarter-wise variation. 4th quarter of 2010 showed the least no. of NSP cases registered in last two years.

- The NSP : NSN ratio shows consistent deviation from RNTCP Standard of 1 : 1. There has not been any improvement during last two years. On the Other hand, Last two quarters of 2010 Showed extreme Discrepancy in the ratio. The 3rd

- qtr.2010 has the highest level of deviation. It signifies that during this quarter, a significantly less number of NSN cases were registered, collectively including all the three TUs.

- The PTB : EPTB Ratio, on the other hand, is showing comparatively higher number of registration of EPTB cases, as the ratios in all the quarters showing less deviation as compared to the RNTCP Standard of 4 : 1 (15% to 20% of all registered new TB cases are EPTB cases). This finding may give rise to the possibility that Almora, as a District is a high performing district in EPTB diagnosis and the causes for this high number of EPTB cases need to be explored from both provider's and Client's perspective. In the 2nd phase of this study , an effort has been made to explore the possible causes.

Phase 2

The second phase of the study is an Exploratory qualitative study. The Discrepancies or variations observed, compiled and enumerated in the first phase are taken into consideration for further exploration of the problem, its genesis and possible causes and interventions, from a provider's perspective, is what is expected to be the outcome of this phase of the study. The Respondents were given an open ended questionnaire and their responses were then summarized to arrive at certain conclusions based on their perspective of the research Problem.

The respondents were also asked to express their perspective of ACSM activities in Almora and their opinion about their effects on case finding trends, keeping in the view the fact that Almora is a district where a number of ACSM activities have been conducted by various agencies in the last few quarters. It is expected that the observations and findings from this Assessment of ACSM activities will aid–in developing ACSM annual Action plan, which is an integral part of Annual District Plan for RNTCP.

Keeping in view the fact that Most of the ACSM Activities are being carried out in Almora District by Agencies like IUATLD and MSS from the last two quarters of 2010, it is too early to analyze the effects in terms of changes in the indicators, some process level indicators were developed for the provider to assess the effect of ACSM activities.

Summary of Findings of Phase 2

Almost 80% of the respondents are aware of the TB Case Detection Rate in his or her respective TU or District. The respondents are also aware of the number of Registered NSP, NSN and EPTB cases. But only 40% of the respondents are aware of the significance of NSP : NSN ratio and PTB :'EPTB ratio. These respondents are not aware of the RNTCP standard for these ratios, whether around 70% of the respondents know about the RNTCP objective of achieving 70% of case detection rate of NSP cases.

Majority of the respondents are aware of the trends in case finding of NSP cases of the last 8 quarters and were able to give information about the variations from RNTCP standards, if any. About half of the respondents are not informative about the trends in the case finding of NSN cases and EPTB cases. About half of the respondents opined that the NSP Case Finding Rates of last eight quarters have been consistently low in their respective TUs and Almora District as a whole.

Around 70% of the respondents at TU level have noticed that the number of NSN cases registered in each quarter is much lower in number as compared to NSP cases. Similarly, the same number of respondents informed that EPTB cases registered in most of the quarters in last two years were significantly higher than previous years. They have expressed that in the last few quarters, the number of Registered EPTB cases have been consistently high.

On probing further to explore the probable causes for such discrepancies from the perspective of the Provider, various informative and diverse responses were encountered. The Reasons for low case finding of NSN cases were found to be the following –

- Most of the Respondents believe that the reason for low detection of NSN cases is the lack of Proper Radiological Diagnostic facilities and other necessary Laboratory Diagnostic Facilities.
- Some of the Respondents opined that missed diagnosis of the Sputum Negative cases due to the lack of physicians with clinical expertise is one of the causes of low Detection of NSN cases, moreover, lack of commitment of the private practitioners towards RNTCP guidelines is one of the significant causes of low NSN detection. Most of the Physicians prefer to prescribe some antibiotic once the 1st sputum sample is smear negative, which further decreases the bacterial load for some days.
- A few number of respondents also validated the lack of training of providers as the cause for low NSN registration.
- Some of the respondents believed that lack of awareness among the health seekers and non-compliance is a major reason for low number of NSN cases.

- Almost 80% of the respondents expressed that Almora District, being a hilly terrain, there is communication and commuting problems, this situation is worsened by the fact that the population is very poor in remote areas and cannot afford regular visits to health facilities due to lack of adequate Government Transport facilities.
- Some of the Respondents also indicated that due to lack of adequate diagnostic facilities, providers are forced to transfer the smear negative cases to higher facilities either to Haldwani or Bijnaur.

On probing further about the trends of case finding of EPTB cases, following information was revealed –

- 80% of the the respondents are of the opinion that the reason for relatively high number of registered EPTB cases is due to the fact that majority of the EPTB cases were referred cases from other Departments like Obstetric and Gynaecology, Orthopaedics and Genito-Urinary Department. Since these Departments have very high patient inflow, and also the prevalence of EPTB is very high in these patients, hence, a large number of EPTB cases are being registered in Almora.

In order to elicit the Respondent's perspective on how these Discrepancies can be removed, they were asked to give their opinion on probable solutions. Most of the Respondents mentioned that Improvising on the infrastructure, effectiveness and penetrability of the health services with should bring about desired changes. They also suggested that enhanced IEC and Political motivation along with sustainable resource engagement are some effective strategy too.

To assess the ACSM activities and their effect in Almora, a concise conceptual framework was developed. The open ended questions were designed accordingly to elicit specific information –

Table -13 Conceptual Framework for assessment of ACSM activities

Querries	Information sought	Process Level Indicators	Practical implications	Information obtained
Are you aware of any ACSM activities in your TU/Dist.	Awareness about ACSM activities	Number of activities attended	Technical competence, improved IPC skill	60% of respondent are aware
What are the agencies conducting these activities	Awareness about ACSM , identifying target groups	Number of agencies conducting ACSM	Better ACSM network, better support to RNTCP	40% know the agencies and their activities
What kind of ACSM activities are being conducted	Usefulness, Utility, Effectiveness.	Trainings conducted, Who participated, how many participated	Development of Need based ACSM	Majority have participated in some activity
Have you observed any effect/ gap areas	Existing Gaps, improvements in RNTCP indicators	What are the gap areas, Availability, usefulness of IEC materials	Need based ACSM, Target driven Approach	Many gap areas identified

The following findings emerged out of the assessment of ACSM activities –

- Almora, in certain plcses, significant number of activities have been done like Organizing community based IEC activities- RCH Camp , Mela , Folk Media.

Involving of Akashvani Kendra , Almora. School IEC , Rallies, Quiz Activities in remote areas.Government organization and NGO which specifically carry out TB activity.

A fairly large number of respondents are aware of the ACSM activities being conducted in their jurisdiction, however, a relatively lower number of respondents are aware of ACSM Activities, from the Bhikshyasen TU.

- Many of the respondents opined that Training Activities are not being conducted regularly. The Training of the LTs and MOTCs are not held in Some TUs and DMCs

- Another issue that was raised is that the some of the LTs who are regular or permanent RNTCP staff are particularly not motivated for participating in ACSM activities.

- Some respondents indicated that many ASHAs and other DOT Providers are not RNTCP trained.

- Around 70% of the respondents expressed that there are very less number of activities being conducted in peripheral and rural areas.

- Some opined that a very few numbers of NGOs and CBOs are involved in ACSM Activities in Almora district.

- Around 80% of respondents have expressed that they have not observed any direct effect of ACSM activities in Case Finding Trends of New cases in Almora District. Rest 20% were unable to give any opinion.

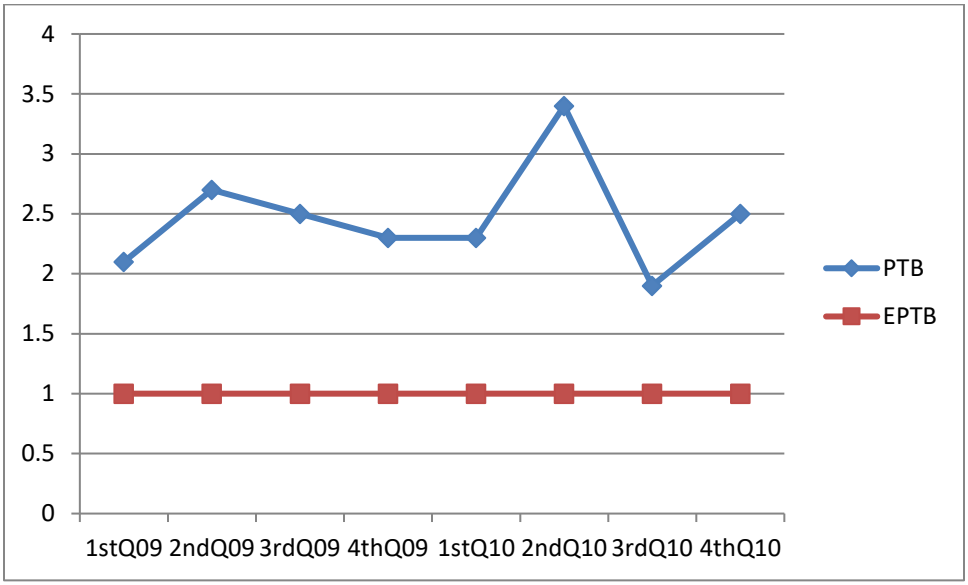
Discussion

In the literature review, a study conducted in Pusat Pakar Utara, Kedah, had emphasized upon an important aspect of TB diagnosis- the role of health care providers in TB diagnosis. According to the study findings, More than 80% of new cases of pulmonary tuberculosis (PTB) are in an advanced stage at the time of diagnosis. The delay in diagnosis is mainly due to "incorrect diagnosis by the doctors rather than patient's delay in seeking medical advice." In my study also, around 40% of the respondents shared the same view. But this figure may not be very reflective of the situation, as my study is limited to the consideration of provider's perspective only. Moreover, during the analysis of data in the 2nd phase of my study, an important aspect of the involvement of the practicing physicians came into light . Most of the respondents are of the opinion that The practicing health professionals from the private sector in Almora are not very committed or interested in RNTCP guidelines. Such providers prefer to treat and follow up their cases themselves. It is evident that such practices negatively affect the Case finding rates in the RNTCP programme, particularly in Almora District. Thus, in this context, it is the lack of commitment of the clinicians more than their lack of clinical expertise that effects the case detection of new TB cases.

A study on Extra-Pulmonary TB conducted in Department of Medicine, All India Institute of Medical Sciences, New Delhi, has emphasized upon the association of HIV/AIDS with the increasing number of extra pulmonary TB cases. According to the study around 50% of AIDS cases, EPTB is prevalent as a n opportunistic infection. In my study, not a single respondent have given opinion about any such observation. In my study, most of the respondents expressed that the increasing number of EPTB cases is mainly due to increased number of referrals from other departments like Obstetric and Gynaecology, Orthopaedics etc. this observation is particularly important because it may falsely project a better and effective RNTCP infrastructure and implementation or a changing trend in epidemiology. To get a clearer picture about this issue, a long duration extensive study is necessary. The trends in EPTB case finding can be easily

interpreted from the following line diagram showing the relative value of the PTB : EPTB ratio for last 8 qtr.s –

Fig.8 Line diagram of PTB : EPTB showing trend in case finding for last 8 Quarters

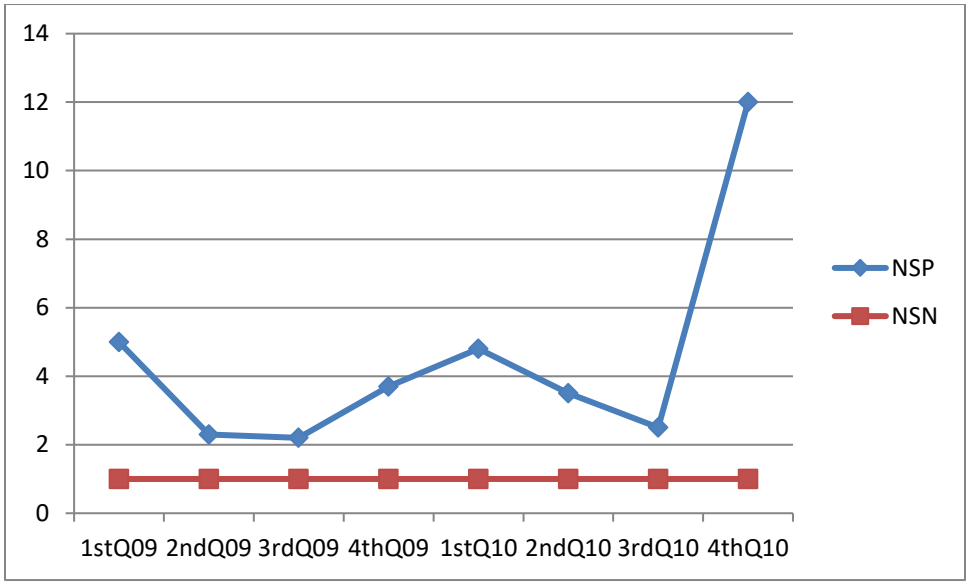


From this line diagram, the deviation from RNTCP standard can be easily interpreted. Those points where there is maximum distance between the lines are the quarters which have the lowest EPTB cases.

Another study on 'Identifying Pulmonary Tuberculosis in Patients With Negative Sputum Smear Results' published in the Official Publication of American College of Chest Physician brings into light the following facts that patients with active TB who have negative sputum smear results are also capable of transmitting the infection. The relative transmission rate of smear negative TB patients compared to smear-positive TB patients has been calculated at 22%. This

finding shows the importance of avoiding missed diagnosis cases. From my study, it is pretty evident that there is extensive deviation or discrepancy in the diagnosis of Sputum Negative cases. The following line diagram shows the trends in NSP : NSN ratios for the last 8 quarters.

Fig 10 Line diagram of NSP : NSN showing trend in case finding for last 8 Quarters



From the above line diagram, it is evident that there is consistent deviation of the NSP : NSN ratio from the RNTCP standard in the last 8 quarters.

A study published in Indian Journal Of Communicable disease has emphasized upon the NTP's need equally to ensure equitable access to services for all TB patients particularly the poor and the marginalized, in urban slums and shanty towns, remote border areas or among displaced communities, if transmission and thereby the incidence of TB is to be reduced. Advocacy, communication and social mobilization efforts (ACSM) have not been satisfactorily addressed by most national TB programmes In the context of wide-ranging partnerships for TB control, advocacy, communication, and social mobilization can help build greater commitment

to, and effectiveness in, fighting TB. Advocacy is intended to secure support of key constituencies in relevant local, national, and international policy discussions and is expected to prompt greater accountability from governmental and international actors. Communication is concernedwith informing and enhancing knowledge among the general public and people with TB and empowering them to express their needs and take action. Encouraging providers, at the same time, to be more receptive to expressed concerns and views of people with TB and community members will make TB services more responsive to actual needs. Social mobilization is the process of bringing together all feasible and practical intersectoral allies to raise people's knowledge of, and demand for, quality TB care and health care in general to assist in the delivery of resources and services and to strengthen community participation for sustainability .

Conclusion

By doing a careful evaluation of the findings in order to achieve the study objectives, the following set of Conclusion have been drawn –

- The Case Finding Trends for the last 8 quarters from 1st quarter of 2009 to 4th quarter of 2010, has shown a consistently lower CDR of NSP cases in Almora district. The CDR of NSP , which is a performance indicator for RNTCP varies between 47 to 48 during last two years. From provider's perspective, the primary reasons attributable for this poor performance are the difficult hilly areas, regular LT are not supportive, migratory population of Almora & Ranikhet. Absence of MO at PHIs level and most importantly lack of LTs and STLS.

- The NSP : NSN ratio in case finding trends reveal that there is significant discrepancy in this ratio in all the 8 quarters in last two years, as compared to the RNTCP standard of 1:1. This ratio for Almora District at the end of 4th quarter, 2010 is 4:1. It indicates, a significantly lower number of NSN cases are being registered. From a provider's perspective, the causes attributable for this discrepancy are – Difficult hilly terrain, Lack of accessible radiological

facilities and advanced Diagnostic procedures, Patient's non-compliance and physician's lack of commitment towards RNTCP and physician's lack of clinical expertise.

- The case finding in relation to PTB : EPTB ratio, reveals a different kind of trend. The PTB : EPTB ratio at the end of 4th quarter of 2010 is 2.5 : 2. This indicates whether the standard RNTCP value for the same is 4 : 1. That shows, a relatively higher number of EPTB cases have been registered during last two years. From provider's perspective, this is mainly because of increasing number of referrals from other departments like Obstetric and Gynaecology, Orthopaedics etc. and not because of improved RNTCP implementation. This result should not present a false picture of better performance, but rather elicit further research into changing epidemiology. No other possible reason could be explored from the provider's responses.

- Based on the interviewee's responses on the probable solutions for these discrepancies from their perspective, some of the conclusions obtained are improved infrastructure and implementation of RNTCP, accessible healthcare services including diagnostic services like X-ray, Sputum culture etc. It is also expected that greater political motivation will bring about positive changes in the case finding trends. Intensification of ACSM activities is also an effective strategy.

- In context to one of the study objectives, the conclusion that could be derived about the effect of ACSM on Case finding trends is that almost 80% of the respondents have not observed any specific effect. It is reasonably acceptable as, in two years span, it is difficult to observe changes in indicator levels. However if some process level indicators are identified and followed over a long duration, then some of the effects can be traced.

- However, most of the respondents mentioned that there are some Gap areas of low RNTCP performance like peripheral and rural area. There is also lack of training and IEC material and proper need based ACSM development.

Recommendations

- In order to improve the Case Detection rate of NSP cases in Almora, I shall recommend a comprehensive Approach to RNTCP implementation. The vacant post of LT, RNTCP in Ranikhet should be filled up immediately, Proper training and retraing of the LTs and MOTCs in Bhikshyasen should be conducted without any further delay and the LT or any other staff who exhibit gross lack of motivation and commitment should be subjected to disciplinary action.

- I also strongly recommend increased effort to create more dot providers and increased sputum collection and transport facilities in order to nullify the problems in accessing TB diagnostic care.

- In order to improve the case finding of NSN cases, most immediate recommendation would be provide X-ray facilities at the PHIs and creating an effective network with the local radio-diagnostic facilities. This should be parallely reinforced by regular training of MOTCs and MO at PHIs, in order to avoid missed Diagnoses.

- Better care and commitment for RNTCP from the private providers need to be ensured, either by Sensitization meeting about RNTCP and /or convincing them to be DOT providers.

- There should be better facilities of Diagnostic services even though the number of EPTB cases registered in each facility is misleadingly high.

- I recommend the further exploration of the provider's perspective based on the findings of this study, after that, another study can be carried out to get the client's perspective of the case finding trend.

- ACSM is an integral component of RNTCP. Improvisions are recommended to carry out such activities, I recommend Target based approach, engagement of local NGO/CBOs, resources and and strong media advocacy and Policy advocacy.

- Frequent PRI and SHG sensitization meetings should be held for penetration into backward, hilly and rural areas.

- The most important aspect of TB Diagnosis, The Review of External and Internal Quality Assessment of TB Lab Services is beyond the limit of the study. Hence, I would like to express the need of a more detailed study to probe into this aspect.

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