REVIEW ARTICLE

Revised National Tuberculosis Control Programme Indian Perspective

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ABSTRACT

The global tuberculosis programme has promoted the revision of National Tuberculosis Programme by strengthening the focus on Directly Observed Treatment Short-course (DOTS). National Tuberculosis Control Programme (NTCP) which was established in 1962 had less than 30 per cent treatment completion. Based on an in-depth review of the programme by a high level committee in 1992, a Revised National Tuberculosis Control Programme (RNTCP) was envisaged with a view to achieve a cure rate of at least 85 per cent amongst newly detected sputum positive cases under DOTS. By December 1999, 130 million of population had been covered in the country under DOTS. However, there are many challenges that are required to be met before RNTCP can become a success story in our country.

Key words : *Tuberculosis, Control and DOTS.*

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INTRODUCTION

Since 1985 tuberculosis has been notified in numerous countries due to the occurrence of an epidemic of HIV. In terms of absolute numbers the total number of cases have increased in India and other developing countries because of population growth. In developed countries where tuberculosis no longer remains a public health problem the care services have been closed. Globally if the current epidemiological tendencies are taken into consideration then it is estimated that by the end of year 2000 there will be 88 million new cases of tuberculosis and 30 million people will die of tuberculosis in this decade alone. However, this can be reversed and multi drug resistant tuberculosis can be prevented globally, if effective TB control programmes are implemented.

Global tuberculosis programme has promoted the revision of National Tuberculosis Programmes in developing countries with the focus on short course Directly Observed Treatment (DOT). Programme review has helped in securing the Government's commitment in re-orientation of TB control programme and has helped in replanning the activities.

The programme has two important components, good quality diagnosis and treatment. The National Tuberculosis programme defines the priorities of anti-TB measures, as per local conditions. WHO set up a surveillance and monitoring project in 1995[1], in which efforts have been made to assess the performance of national TB programmes and also

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to assess the implementation of the DOTS strategy in different countries. Results indicate DOTS strategy has been implemented in 75 countries and in 39 of these, implementation was countrywide. In 1995, 32, 97, 688 cases of tuberculosis were reported of which 35% were sputum smear positive. The sputum smear positivity was found to be 54% where new strategy was under implementation as against 35% in non-strategy area. Further, of the patients registered for treatment in 1994 that used DOTS strategy, 92% were analysed for outcome and it was found that 75% were treated successfully as compared to 42% in non strategy area, indicating the success potential of DOTS strategy[2].

RNTCP - INDIA

India has the dubious distinction of contributing to nearly *¼th* of the global burden of tuberculosis. There are an estimated 19 million people suffering from the disease of which a quarter are smear positive and highly infectious. A patient dies of tuberculosis every minute in the country.

To combat this problem a National TB Control Programme (NTCP) was established in 1962 which was aimed at an early case detection and effective treatment. The programme is implemented through District Tuberculosis Centres (DTCs) which act as nodal points for entire TB control activities which are delivered through the primary health care infrastructure. The DTP is supported by a state level organization for coordination of TB activities in the State and supervision of DTP Currently DTCs have been established in 446 of the more than 500 districts and 292 of these have been provided with highly effective short-course drugs. In addition, TB clinics have been established in big towns and cities. There are on an average 1.4 million cases reporting to the programme every year, of which 30% complete the treatment. It is estimated that about 50% of the TB cases seek treatment from non-governmental sector including private practitioners.

The incidence and prevalence of the disease remained more or less static over the years because of the low levels of case finding and treatment completion, leading to practically no epidemiological impact.

In fact, with population growth, the absolute number of TB cases has been on the increase. The impending threat of the TB - HIV co-infection and the emergence of MDR tuberculosis has added urgency to the situation and prompted the Government of India to accord a renewed priority to NTCR An in-depth review of the programme was done by a committee of national and international experts in 1992. Some of the observations of this committee were : *(i)* less than 30 percent treatment completion; *(ii)* inadequate budgetary outlay and shortage of drugs; *(iii)* undue emphasis on x-ray diagnosis; *(iv)* poor quality of sputum microscopy; *(v)* emphasis on case detection rather than cure; *(vi)* poor organizational set up and support for TB; and *(vii)* multiplicity of treatment regimens. On the basis of the recommendations of this Committee and as endorsed by the Central Council of Health, a revised strategy for NTCP has been evolved.

OBJECTIVES OF RNTCP

General Objectives

(a) To reduce morbidity and mortality due to tuberculosis.

(b) To break the chain of transmission so that TB cases to be major public health problem.

Operational Objectives

(a) To provide SCC to all detected TB patients for the recommended duration of treatment till they are cured.

(b) To treat annually on an average about 750 sputum positive cases per million population as against the existing rate of 375 per million population.

(c) To administer anti-tuberculous drugs under direct observation during the intensive phase and maintaining good quality supervision of drug administration during the continuation phase. Treatment services will be made most accessible to the patients through the involvement of the peripheral health functionaries with a view to achieve a cure rate of at least 85% amongst all newly detected sputum positive cases.

(d) To detect at least 70% of the estimated incidence of smear positive pulmonary tuberculosis patients. Efforts at case detection

to be made only after achieving 85% cure rate.

STRATEGY[3]

Strategies Relating to Case-finding

Case-finding will be passive. Emphasis will be laid on diagnosis through sputum examination. The quality of diagnosis will be improved by : (*i*) provision of binocular microscopes; (*ii*) uninterrupted supply of good quality reagents, slides and sputum cups; *(iii)* training and supervision of microscopist; *(iv)* three sputum smears for diagnosis; *(v*) establishing quality control with a cross checking mechanism at sub-district, state and national level through networking of laboratories; and *(vi)* monitoring the proportion of cases diagnosed without bacteriological confirmation.

Strategies Related to Treatment and Case-holding

All identified TB patients will be given SCC as per treatment regimens for different categories of patients. The intensive phase will be directly observed through responsible peripheral functionaries and continuation phase appropriately supervised by observing the intake of the first dose of the medicine during the weekly drug collections and checking of empty foils of combipacks at the time of collection of next dosages and by random check by health workers.

Strategies Related to Operational Management

Strengthening at the Central, State and District levels will be done by providing necessary manpower, equipment and training to facilitate monitoring, supervision and training.

A tuberculosis unit (TU) will be established at the sub-district in an existing CHC/Block PHC/Taluk hospital which function as the managerial unit of the programme for 0.3 to 0.5 million population and comprise of a Senior Treatment Supervisor (STS) and a Senior TB Laboratory Supervisor (STLS). This team will be responsible for implementation and supervision of all facets of the programme in their area of jurisdiction, maintenance of the records and preparation of progress reports. The team will be under supervision of one of the medical officers in position at the TB Unit who shall be designated as MO-TC.

Strategy for Other Key Areas

For regular monitoring and evaluation of programme activities a health information network will be established. NGOs and private practitioners will be appropriately involved to support the RNTCR. An effective IEC strategy will be developed involving professional organizations and communication experts. Emphasis will be laid on awareness of community with regard to symptoms and signs of TB and availability of diagnostic and treatment centres.

ACTIVITIES

Case-finding

In the rural areas the existing laboratories at the PHCs/CHCs level upto maximum of one per lakh population will be strengthened to function as a Microscopic Centre.

Treatment and Case-holding

DOTs three days a week will be given throughout the intensive phase. Facility of treatment will be made available at sub-centres/treatment centres close to patients' residence/village, to enhance patient compliance.

Information, Education and Communication (IEC)

For programme success it is of paramount importance to enhance the knowledge and awareness of providers, users and community at large about different aspects of tuberculosis and its control measures.

Training of Staff

The training institutes at Central, State and District levels will be appropriately strengthen in terms of staff, equipment, vehicles and civil works. It is proposed to train the key trainers at Central and State levels and these in turn will train District trainers who will be responsible for giving training to all categories of staff within the district.

Management Information System (MIS)

Cohort analysis of treatment results as per specially designed RNTCP formats would be the

main indicators of programme effectiveness.

PROGRESS IN IMPLEMENTATION OF DIRECTLY OBSERVED TREATMENT, SHORT-COURSE (DOTS)

Dr Hiroshi Nakajima, Secretary-General of the World Health Organization, has declared that, "The DOTS strategy represents the most important public health breakthrough of the decade, in terms of lives which will be saved". India has adopted this as a comprehensive strategy for TB control under the Revised National Tuberculosis Control Programme (RNTCP). Since its adoption more than two hundred lac of population has been covered in various parts of the country with excellent results.

The DOTS is a systematic strategy which has five components and each of these component is a part of management package provided by WHO to the developing countries. The components of DOTS are : (i) political and administrative commitment; (ii) good quality diagnosis, (iii) good quality drugs, *(iv)* the right treatment, given in the right way; and *(v)* systematic monitoring and accountability.

Since tuberculosis can be cured and the epidemic can be reversed, therefore it warrants top most priority which the Government of India has already accorded.

The Revised National Tuberculosis Control Programme was started in India in 1993 as pilot strategy (Phase-I) at five places in the country and it could achieve a cure rate of more than 90 per cent. Encouraged by these results, the startegy was extended to cover 14 million population in order to study technical soundness and operation feasibility of RNTCP in phase-II. After this successful testing the RNTCP phase-Ill was launched in 1997. It is expected that by the end of 2000 nearly 250 million population will be covered by the DOTS strategy. The central piece of DOTS strategy includes the full package of services for TB control in 102 districts and metropolitan cities covering a population of 400 millions in 15 States by 2000. The diagnosis and management under RNTCP has been shown in flow chart-1.

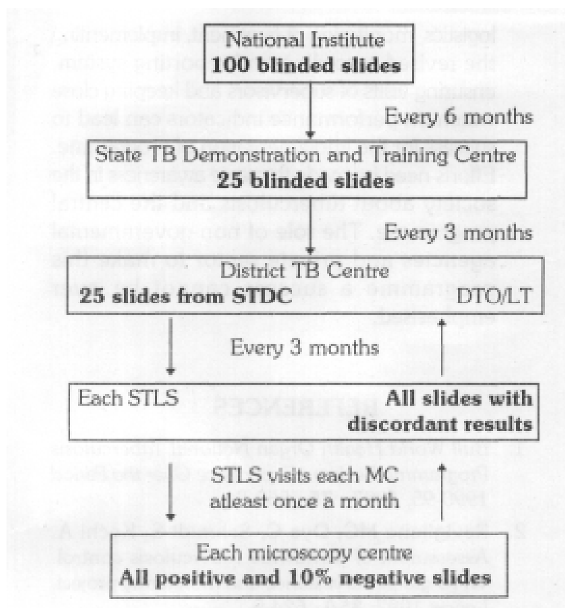
In Delhi the pilot strategy (Phase-I) of RNTCP was commenced at Chest Clinic, Gulabi Bagh and in

Flow Chart-1. Indicating diagnosis and management under RNTCP

1995 (Phase-II) LRS Institute of TB and Allied Diseases (Chest Clinic) was included in the extended pilot project phase-II along with two more Chest Clinics. By December, 1999; 130 million of population had been covered in this country under DOTS. In January, 1999, whole of Delhi with a population of about 10 million was covered under RNTCP; with 14 chest clinics and 102 DOTS centres.

QUALITY ASSURANCE AND SPUTUM MICROSCOPY

The quality assurance in sputum microscopy under RNTCP had been given a prime place. Microscopy has been an essential tool both for the diagnosis and follow up of the TB patients particularly in the RNTCP areas where declaring a patient cured is dependent on laboratory results. To ensure reliable high quality laboratory services, quality assurance network is an important addition under RNTCP. The Senior TB Laboratory Supervisors (STLS) are expected to visit the designated microscopy centres at least once a month to examine all positive slides and at least 10 per cent of the randomly selected negative slides. The quality assurance network consists of a three-tier system which is shown in the flow chart-2. The supervisor calculates the false positive and false negative after



Flow Chart-2. Quality assurance network in sputum microscopy.

comparing the results of the two observers.

MAJOR CHALLENGES IN IMPLEMENTATION OF DOTS

1. *Expansion.* The expansion of the DOTS programme is slow and, therefore, the targets set in the second and third phase appear difficult to be achieved. At the end of 1999, only 130 million population had been covered which is much below the expectations. Poor infrastructure facilities in several states will not allow a quick expansion and, therefore it will take a long time to achieve the desired results for control of the tuberculosis in the country. All India cure (77%) under RNTCP is below the targeted cure rate of 85 percent. Even in the model areas, the detection of the cases is not above 60 per lac population as compared to expected 135 per lac population (60% of expected incidence). Default rate in many centres is still high ranging from 15-20% and, therefore these centres are not able to achieve cure rates as desired.
2. *Private Sector Involvement* A large percentage of affected individuals are left uncovered under RNTCP because they are going to private practitioners and not reporting at all to the DOTS centres. As no active case finding is recommended under the RNTCF, therefore, this percentage is not going to be reduced by the revised strategy. It is, therefore, important to involve these practitioners by quickly carrying out operational researches on different models and implementing the best model of involvement of non-governmental sector.
3. *IEC and Health Education.* The programme does not have emphasis on active health education and appropriate counselling of the patients. It has been a common observation that many patients with pulmonary tuberculosis are having associated diseases like COPD. Such patients usually continue to have the symptoms even after effective anti-TB therapy and if they are not quickly examined and proper treatment is instituted, they may lose faith in the health services.

   Further, in India, due to religious practices such as *fasts* when people do not take food (specially Muslims during *Roza* days and Hindus on *fasts)* it is difficult to convince such people to take anti-TB therapy under RNTCP schedule. There are many interventional programmes that are required, such as a mass awareness campaign for control and prevention, community involvement through IEC programme, are to be started in a phased manner in the country.
4. *Multiplicity of Programmes.* Slow expansion of the RNTCP programme has led to a situation where in some districts four modes of treatment are in operation. In majority of the rural districts, conventional drug regimen is still being given. In some districts, short course chemotherapy daily regimen has been in operation and in others, DOTS under RNTCP has been adopted. Medical institutions use their own regimens. This creates obvious difficulties in ensuring a uniform strategy. Since under the RNTCP, there is a change in the rhythm of administration and duration of treatment, (intermittent chemotherapy) there has been some confusion particularly in the minds of private practitioners who for a long time have

been using daily regimens.

5. *Migratory Population.* In majority of the cities there is a large number of migratory population. Under RNTCP such people finds difficulty in getting themselves registered and are, therefore, deprived of benefit of DOTS. RNTCP has still to formulate guidelines for this group which may constitute 25-30% of the population in large cities.
6. *Social Stigma.* A strong social stigma is attached to tuberculosis that hinder community acceptability of TB treatment in the community. These patients may avoid visiting the DOTS Centres. There are very little information, education and communication activities which are essential for the change in the attitude of the society.
7. *Integration.* In a rural model of RNTCP where TB control activities have to be integrated with the other central programmes there is a problem of integration of activities and setting priorities, both for health workers and doctors.

Timely procurement of drugs and other logistics, monitoring of treatment, implementing the revised recording and reporting system, ensuring visits of supervisors and keeping close watch on performance indicators can lead to success for the implementation of programme. Efforts need be made to create awareness in the society about tuberculosis and the central programme. The role of non-governmental agencies and private sector to make this programme a success cannot be over emphasised.

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