Theme: TB MANAGEMENT IN INDIA
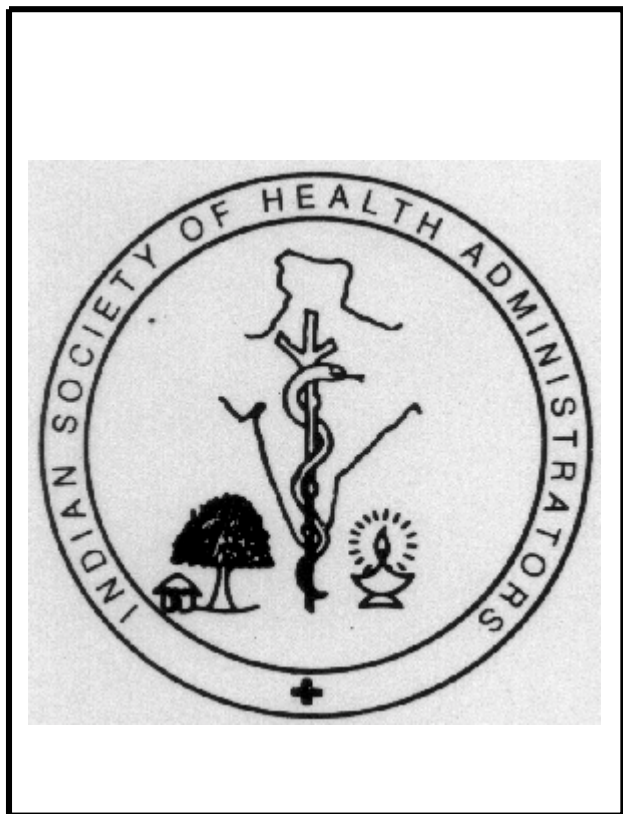
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TUBERCULOSIS CONTROL STRATEGIES:
CHALLENGES TO HEALTH MANAGEMENT RESEARCH

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The rapid expansion of RNTCP implementation in this vast and diverse county with quality maintenance demands proactive involvement of policy makers, programme managers, researchers and health functionaries.

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Mid-term goal for the programme have to be defined. Problems in achieving these objectives have to be identified and a research agenda needs to be formulated to answer the constrains identified. Research, by being linked to the constrains and objectives, will always be relevant to TB control programme and the findings would influence policy and practice. Operational research should become an integral component of the programme management.

I.   INTRODUCTION

Control of tuberculosis (TB) has been evading humankind despite more than a century after identification of the causative organism, and more than half a century of effective anti-tuberculosis treatment being available. The failure in controlling tuberculosis is attributed to poor management of TB control programmes. To top it all, confounding HIV scenario has worsened the situation of TB disease forcing the World Health Organization to declare TB as a global emergency in 1993. TB control programmes to be effective, they are recommended to be integrated with the general health care delivery system (1). In recent years DOTS (directly observed treatment, short-course has emerged as the most cost effective strategy ever adopted (2) and is developed based on scientific evidence and recommends the use of a uniform protocol throughout the world. The strategy comprises five components, namely, political and administrative commitment, quality diagnosis based on sputum microsoopy, use of quality drugs, directly observed treatment, and maintenance of a recording and reporting system.

The national tuberculosis control programme (NTP), formulated and launched in 1962 in India, also integrated tuberculosis control activities with the general health services (3). However, a programme review, done in 1992, after three decades of implementation of NTP, showed that it had not created a significant epidemiological impact mainly due to managerial weakness, and inadequate funding; over-reliance on x-ray for diagnosis, use of non-standard treatment regimens, low rates of treatment completion, and lack of systematic information on treatment outcomes were other drawbacks of the NTP (4). India therefore adopted the DOTS strategy in 1998 under the Revised National Tuberculosis Control Programme (RNTCP), after pilot testing in 1993 (5), It is now being implemented in a phased manner. Today RNTCP has become the second largest and the fastest-growing DOTS programme in the world (5), covering more than 450 million of India's one billion population (6). The rest of the population is covered by the national tuberculosis programme (NTP) which is being phased out gradually. The RNTCP is expected to cover 80% of the country by 2004 and the entire population by 2005 (7).

The challenges with the RNTCP are manifold, related to the structure and technology as well as programme implementation and personnel, material and financial management.

II.   STRUCTURAL CHALLENGES

The delivery of health care services in India is through the organized government health services, public sector undertakings, and by a large private sector that includes individual private providers, corporate sector, and non-governmental organizations.

The organogram of the government health sector for tuberculosis control, presented in figure 1, shows that the technical hierarchy is well defined (8); but the administrative hierarchy of the programme is complex. Health being a stats subject, each state in India has its own priority agenda and methodology of implementation. To cite a few examples, some states have a single directorate for health services responsible for all issues of health; some have separate directorates for medical education and health services, and still others have more refined, specific and separate directorates for medical education, medical services and public health services. Thus the administrative power equations and hierarchy differ between states.

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This dual structure of the health system in India, i.e., separate administrative and technical control, creates lack of uniformity in the implementation strategies between states and makes it difficult for the programme planners and implementers.

In the RNTCP, the sub-district level (tuberculosis unit-TU) is the functional unit for the management and implementation of the control programme. The TUs send the programme (technical and logistics) report on a quarterly basis to the district. The district in turn consolidates the reports and sends it to the central level with a copy marked to the state level programme officers. As the financial accountability of the stats is minimal, the ownership of the programme is relatively low at this level, This has resulted in lack of adequate involvement of the state in programme monitoring and supervision. Managerial research is needed for identification of effective methods of monitoring, which are, simple, effective and quick to use, but at the same time satisfying every level of hierarchy for implementation.

One diagnostic facility (microscopy center-MC, where sputum examination is done) is made available for every one lakh population. Each MC caters to about 3 primary health care centers (PHC). This is the only component of DOTS that is centralized as different from the earlier NTP. This is to maintain the quality of diagnosis. The drawback here is that a large number of patients need to travel long distances for sputum examination resulting in dropouts. Managerial efficiency is required to minimize dropout rates in the programme.

Though the government health system is complex, it is well organized. However, there is evidence that more than 50% of the tuberculosis patients approach private providers (PP) first for relief (7). The private health sector in India is one of the largest in the world, comprising 80% qualified doctors, 75% dispensaries and 60% hospitals (7). The PP has become the de facto primary health care provider in India. The relative advantages of PP include easy access, convenient timings, better communication and greater confidentiality, as observed in a study conducted by the Tuberculosis Research Centre (under publication). In addition, is the patient's perception that the private sector offers better quality of care. There is thus no escaping the fact that the health system of the country has to evolve appropriate methods in order to involve this large sector in the tuberculosis programme delivery. Their participation in the programme is necessary for achieving the "global target" of 70% case detection and 85% cure for tuberculosis control. Also, the various public sector undertakings (e.g., railways, employees state insurance hospitals, central government health services, etc), responsible for the health of their employees and families, should be involved effectively in the RNTCP and made committed and responsible to the programme.

III. TECHNOLOGICAL CHALLENGES

For the effective implementation of any control programme, a situation analysis and estimation of the burden of the disease is essential to ascertain the materials and finances required. There is no countrywide estimate available at present, for the burden of tuberculosis infection or disease in India. Currently, the burden of disease is calculated on an average annual risk of tuberculosis infection (ARTI) of 1.7% (9) for the entire country, (This estimate was based on a few regional observations). No countrywide estimate is available for ARTI. The materials and financial requirements for the programme are also calculated based on the caseload estimation of 50 new bacillary positive pulmonary tuberculosis patients per lakh per year for an ARTI of 1% (10).

Human immuno-deficiency virus (HIV) infection is changing the scenario of tuberculosis in India (11). It is fueling the tuberculosis epidemic, since HIV promotes progression to active disease in people with tuberculosis infections with an estimated 7% developing TB annually (12), either acquired recently or in the past. The break down rate of tuberculosis in individuals with HIV/TB co-infection needs consideration for determining the caseload and procurement of logistics.

In the context of drug procurement, that is based on the disease burden as well as the impact of DOTS implementation in the following years, research should be initiated to assess the actual disease burden. As a disease survey providing the actual disease burden is not cost effective, there is a need to develop better tools to monitor.

IV. CHALLENGES IN PROGRAMME IMPLEMENTATION

India has evolved a national level programme guideline for RNTCP. With its geographic and cultural diversity, the policy needs constant evaluation and changes, if required.

The administrative unit of the TB control programme is the district, with the district tuberculosis officer (DTO) as programme manager. The DTO is responsible for preparing the district for implementation and to ensure effective functioning of the programme in his area. To achieve this there is a need to plan strategies for programme implementation. A blue print of the work schedule needs to be prepared and implemented in a realistic way. Decision of who will do what, otherwise termed 'organizing', needs to be done. For an effective programme, training of health workers, development of Information Education and Communication (IEC) and advocacy materials, uninterrupted drug supply and coordination with Non Government Organisations (NGOs), PPs and, the health care service needs to be in place. Grouping of related activities, and networking of positions for effective communication channels needs planning and organizing. Delegation of decision-making

authority to subordinates, where needed, is the power of the manager.

V. PERSONNEL MANAGEMENT

Recruitment of suitable subordinates and their motivation is a major requisite for successful continuation of the programme. Influencing the behaviour of these subordinates by balancing the level of authority and relationship would result in successful programme implementation. A good leader needs to be dynamic, i.e. capable of changing leadership style depending on the situation. This calls for managerial capacity building for programme managers at all levels. The mode of training, modules for training, and implementation of the skills acquired for improving the programme performance need management research.

One of the main reasons for not obtaining the desired results with NTP in India was lack of supervision (7). There was only one supervisory team for the entire &strict and the supervisory officer was the DTO. Under the RNTCP, an additional supervisory unit has been created for every 500,000 population, with a senior treatment supervisor (STS) and a senior tuberculosis laboratory supervisor (STLS) performing supervision on a daily basis, and a medical officer in charge of TB control activities (MO-TC) performing periodic supervision. Delegation of supervisory powers does not mean giving away responsibility. In fact, this helps to decentralize supervisory powers, thereby making it more effective.

In the current programme, supervision of the supervisory staff is not in place. So, there is a need to evaluate the existing system in terms of its efficacy. Also, at present the 83% and STLS in most places are on contractual appointment. The programme should attract the right kind of people with the capacity to learn and be committed to the programme. The ability of the health system to give emotional acceptance to these staff in the form of job security is also a concern.

Since the TB control programme is integrated into the primary health care, there is a need to build capacity at the peripheral level for all categories of staff. The training materials have been designed to bring uniformity in the technical aspects of case management and programme management. Training of the key personnel is done at the central resource institutes, who in turn train the other staff. Selection of key staff for training is a crucial issue, since they are responsible for training of workers at the grassroots level. Moreover, there is no system to ensure uniformity of training. Though an immediate assessment of the training is done using pre and post-test scores, there is no method to assess the long-term impact of training. A system for long-term assessment needs to be evolved. Frequent transfer of the trained personnel is another bottleneck of the RNTCP. Training should also include capacity building to manage, and to undertake operational research that will help in improving the performance. Methodologies for in-service training have to be developed. Adherence of the health care staff to the guidelines of RNTCP needs to be monitored.

VI. MATERIALS MANAGEMENT

Presently, the drugs are purchased through a global tender that is approved by the department of health and the World Bank. They are being distributed to the districts directly and a stock is supplied to the Government Medical Stores Depot. The districts in turn supply the required drugs to the sub district level, from where it is distributed to the health facilities. A more effective procurement and distribution system for drugs, that is timely and cost-effective, needs to be evolved. Other consumables are also procured and distributed from the district to the lower levels.

Maintenance of stocks at various levels needs to be optimal without interference with the supply. As the shelf life of the drugs is too short, ensuring proper inventory control is a challenge. Ways to minimize wastage and pilferages are also required, as anti-tuberculosis drugs are costly and misuse can lead to emergence of drug resistance.

VII. FINANCIAL MANAGEMENT

The financial resources for the RNTCP are distributed directly to the districts through the district tuberculosis control societies (DTCS). Avoiding cumbersome administrative and financial procedures, the DTCS is expected to ensure smooth flow of funds for utilization at the community level. Moreover, as the states are to have state tuberculosis control societies, the interplay of power equations between both these societies (state and district) need to be monitored and evaluated for optimal use of the scarce financial resources. The DTCS implements the programme functionally, administratively and annually. Also, it improves coordination between the government and non-government functionaries at the grassroots level...

Adequate capacity building is needed for all the district level programme officers for managing finance in an optimal way. An ongoing continuous mechanism is required to evaluate the utilization of funds at he district level. Farther the decentralization, more difficult it is to monitor and supervise, and keep the providers accountable to the system. So, there is a need to evaluate

the efficacy of financial decentralization in the current context and take appropriate steps to improve the quality of financial management.

VIII. CONCLUSION

The rapid expansion of RNTCP implementation in this vast and diverse country with quality maintenance demands proactive involvement of policy makers, programme managers, researchers and health functionaries. Though the current reporting and recording system of RNTCP assists in regional- and state-wise evaluation of the programme peformances. India needs to evaluate current strategies and consider changes in implementation of alternative strategies, wherever deemed necessary, if it ahs to control the TB scourge. There is a lot of scope for health management research in TB control toderive the most appropriate, effective, and feasible organizational structure and to test the adaptability for other areas, paving way for uniform health delivery system in this diverse country.

Close interaction between researchers, programme managers and policy makers will help to fine-tune and make midcourse corrections. Mid-term goal for the programme have to be defined. Problems in achieving these objectives have to be identified and a research agenda needs to be formulated to answer the constrains identified. Research, by being linked to the constrains and objectives, will always be relevant to TB control programme and the findings would influence policy and practice. Operational research should become an integral component of the programme management.

REFERENCE

1. Raviglione M C, Pio A. Evolution of WHO policies for tuberculosis control, 1948-2001. *Lancet 2002*; 359 (9308): 775-80.

2. Adauto Castelo, Pedro A Mathiasi, Roberto Lunescet al. The global challenge of tuberculosis: cost-effective and affordable treatments. *Pharmaco Economics 1995;* 8(5): 385-99.

3. Bordia NL. National Tuberculosis Programme. *Ind J Tub 1967;* 14 (4): 183-85.

4. Khatri OR, Frieden T R. The status and prospects of tuberculosis control in India. *Int J Tuberc Lung Dis 2000;* 4 (3): 193-200.

5. Khatri G R. The revised national tuberculosis control programmer: a status report on first 1,00,000 patients. *Int J Tub 1999*; 46: 157-66.

6. Progress towards tuberculosis control, India,2001. *Weekly Epidemiological Record 2002;* 77 (12): 89-93.

7. Joint Tuberculosis Programme Review, India,February 2000. World health Organization, *WHO, SEA-TB-224,* 5 May 2000.

8. Revised National Tuberculosis Control Programme. Operational guidelines for tuberculosis control. Central TB Division, Directorate General of Health Services, Nirman Bhavan, New Delhi, India, 1999.

9. S.Mayurnath, R.S. Vallishayee, M P Radhamani, R. Prabhakar. Prevalence study of tuberculosis infection over fifteen years, in a rural population in Chingelpet District (south India), *Indian J Med Res 1991;* 93: 74 - 80

10. K. Sytblo. The relationship between the risk of tuberculosis infection and the risk of developing infectious tuberculosis. Bulletin of International Union against tuberculosis 1985; 60 (3-4): 117 - 19.

11. DeCock KM, Weiss HA. The global epidemiology of HIV/AIDS. *Tropical Medicine and International Healtth 2000;* 5: A3-9.

12. Swaminathan S, Ramachandran R, Baskaran G, Paramasivan CN, Ramanathan U, Venkatesan P et al. Risk of development of tuberculosis in HIV infected patients. *Int J Tuberc Lung Dis 2000;* 4: 839-844

13. CDC. Progress towards tuberculosis control, India, 2001. MMWR, March 23, 2002; 77 (12): 89-93.

Figure 1: Organogram of the government health care delivery system for tuberculosis control

National level
(Deputy Director General - Tuberculosis)

National Institutes
(TRC, NTI, LRS, AIPH&H)

State level
(STO, STDC)

District level
(DTO)

Sub-district level (one per 500,000 population)
(MO-TC, STS, STLS)

Microscopy centre (one per 100,000 population)
(LT)

Primary health care level (one per 30,000 population)
(PHC, CHC, Dispensary)

Sub-centre level (one per 5000 population)
(Sub-centres, treatment centres)