1. BCG-vaccin-policy 1980 p58
2. 100% Centrally sponsored to
50% " aided - 1978 - p57

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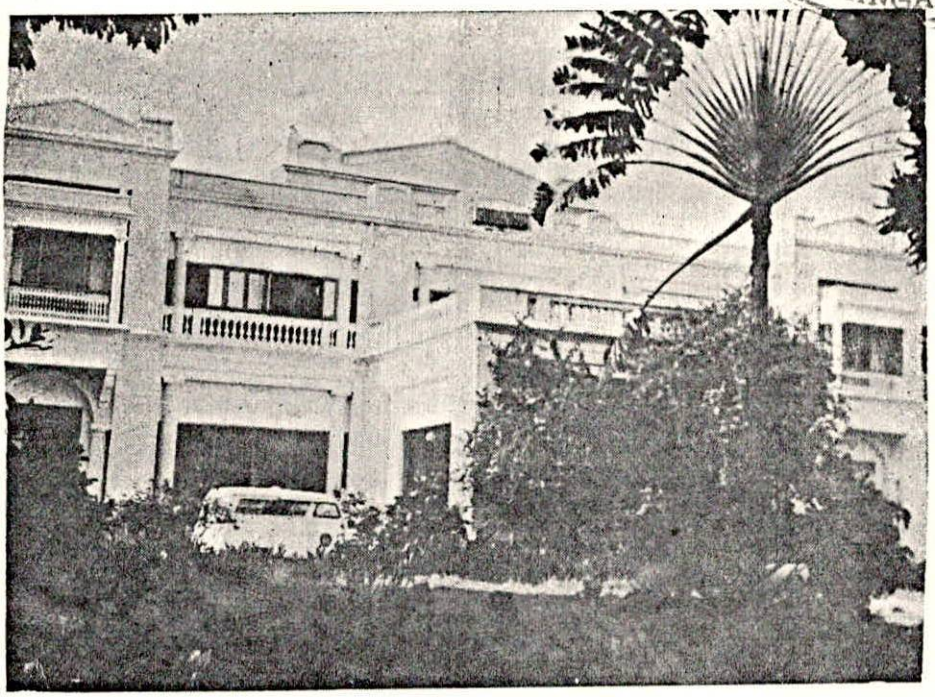
NATIONAL TUBERCULOSIS INSTITUTE

BANGALORE



REPORT

of

WHO – GOVERNMENT OF INDIA

WORKSHOP

on

TUBERCULOSIS AND PRIMARY HEALTH CARE

5th—8th December 1981

INTRODUCTION

India is one of the signatories to the Alma Ata Declaration of 1978, committed itself to provide Primary Health Care for all by 2000 A.D. Achievement of this objective is a big challenge to any country with a huge population.

To achieve this goal, each country has to prepare its own strategy and plan of action, depending upon the prevailing health problems, priorities and available resources. In this gigantic endeavour, it is not possible for health services alone to undertake this heavy responsibility, it needs sustained efforts and co-operation of all the departments which are involved in the overall development of the country. This plan cannot be regarded as a separate entity, but an integral part of the over-all development of the country where each sector contributes to the total socio-economic development.

The National Tuberculosis Institute (NTI), Bangalore, was entrusted with the task of organization of the Workshop on Tuberculosis and Primary Health Care, in collaboration with the WHO. It was in the fitness of things that the NTI was asked to take up this responsibility, since the tuberculosis programme was formulated by this Institute. The Workshop was held from 5th to 8th December 1981. The inaugural session was held at the Faculty Hall of the Indian Institute of Science, Bangalore, and was inaugurated by Dr. I.D. Bajaj, Director General of Health Services, Dr R.M. Varma, Professor Emeritus, gave the key note address, wherein he stressed the importance of the Alma Ata Declaration and India's commitment to it. He emphasised that this Alma Ata Declaration should not remain as a slogan, but a definite plan of action has to be formulated by this Workshop. Dr V. Narayanaswamy, Director of Health & Family Welfare Services, Karnataka, presided over the function and explained the tuberculosis activity of Karnataka and how the State Government has already taken action to introduce the concept of Primary Health Care in the health Services. Dr A. Banerji gave a brief resume of Tuberculosis Programme in the country.

The Scientific Session was held in the premises of the NTI with a talk by the Guest Speaker Dr Wallace Fox, Director, British Medical Research Council, on the latest concepts in Short-Course Chemotherapy. This was followed by a review of epidemiological situation of tuberculosis in the country, followed by sociological dimensions of problem of tuberculosis in the country. These formed a back-drop for the exposition of the District Tuberculosis Programme (DTP).

This was followed by a session on National Tuberculosis Programme and Primary Health Care, where certain areas were identified in the context of DTP.

The final session reviewed the various National Health Programmes, such as the Family Welfare Programme, National Malaria Eradication Programme, National

Leprosy Control Programme and these programmes were reviewed in the context of tuberculosis programme.

A field programme was arranged in Mysore District for the demonstration of the DTP.

The Workshop was attended by officials from the State Health Directorates, State Tuberculosis Officers, eminent tuberculosis specialists, social scientists, professors and associate professors of community health from several medical colleges of the country. The Workshop provided a unique opportunity of bringing together participants from various disciplines to formulate proposals for organizing tuberculosis programme through the out-reaches of the Primary Health Centre (PHC).

WELCOME ADDRESS

by

Dr. A. BANERJI
Director-in-Charge, N. T. I.

Dr Bajaj, Dr Varma, Dr Narayana Swamy, distinguished friends and colleagues, Ladies & Gentlemen.

This workshop on tuberculosis & Primary Health Care is an important milestone in the Governmental efforts to deal with the problem of tuberculosis. Most of us assembled here have had the privilege of working in the field of tuberculosis. For some the entire career has been devoted in this field. This workshop provides us a singular opportunity to share our experiences and channelise them to the future that holds the promise- the promise that diagnosis and treatment facilities for tuberculosis will be accessible to each and every victim of the disease.

About twenty years ago, this Institute, made a giant stride in the field of public health in formulating the tuberculosis programme within the existing ganeral health services. Today it has the expectation to see the programme unfurled to the fullest extent through Primary Health Care – the strategy that would make health services available to those in need of them, especially the economically deprived people in rural areas.

Tuberculosis through the centuries has been considered as an affliction of the individual rather than a public health problem. Not being endemic with territorial distinctions and not being observable in epidemic proportions it has been a 'silent disease' (though its main symptom—cough is by no means silent). Tuberculosis does not provoke communities to get together to fight against it. Nor does it provide a cause which readily gets the attention of those who guide the destiny of the nation. Tuberculosis happens to be a disease, the magnitude of which is realised mostly on the basis of facts and figures on the prevalence of the disease, the suffering in many aspects such as physical, mental and economic and in terms of the immensity of the programme that has to be mounted in the country to provide adequate services.

It was in 1912, full thirty years after the discovery of mycobacterium tuberculosis that the Sanitary Commissioner to the Government of India urged that tuberculosis be dealt with as a public health problem. The response from the Government was to open sanatoria and institutions for treatment in different parts of the country. This approach emphasised individualising the patient in his treatment and isolating him from his physical and social environment. It also gave a firm hold to the concept of treating tuberculosis patient under specialised care.

The inadequacy of beds and treatment facilities for tuberculosis in institutional care, perforce lead to explore alternative ways of caring for the patient. Organized Home Care Programme taken up by the Tuberculosis Association of India, demonstrated that it was indeed possible to care for the tuberculosis patient within his home. Education on hygienic practices in respect of the patient, the Seal Sale Campaign etc helped to create an awareness in the community regarding tuberculosis.

During the crucial years of the overall development of the country immediately after independance, it seemed possible to embark on effective programmes which would have a well marked effect on the problem of tuberculosis. Prevention of tuberculosis by BCG vaccination had obtained world wide acceptance and in 1951, India launched a mass national vaccination programme, the biggest in the world, in terms of population and area covered. The fiftees were also the time, when successful treatment of tuberculosis by anti-tuberculosis drugs in clinical trials indicated the enormous potential of the drugs on domiciliary basis. The Madras Tuberculosis Research Centre demonstrated that domiciliary treatment of patients with anti-tuberculosis drugs under the prevalent socio-economic conditions in India achieved the same measure of success as treatment in sanatoria. The conviction emerging at the time that control of tuberculosis were within reach can be matched only with the conviction at the time when tubercle bacilli were discovered-that the end of tuberculosis was in sight.

After launching the mass BCG vaccination programme - what was then believed to be a preventive measure against tuberculosis, attention of the Government was focussed on determining the size and extent of the problem of tuberculosis as a prelude to its diagnosis and treatment. The National Sample Survey under the Indian Council of Medical Research revealed the pervasiveness of the problem and other epidemiologic features which indicated that a community oriented approach was the only way to tackle the problem. It was given to the National Tuberculosis Institute to pool together all scientific information, available through studies and surveys and clinical trials, and generate fresh data to formulate what is known as the National Tuberculosis Programme.

The Institute has since its inception done unparallelled investigations on the problem of tuberculosis in the country under operations research. Based on measurement of disease, the suffering of the patient, and the logistics of the health care delivery system we have detailed the programme which is eminently accessible to the people and which is well within the general health services. Standardization, uniformity and continuity are its watch words. In order to disseminate the essence of the programme in its pristine state, we have encapsulated the essentials of the programme in several manuals which guide the work of the numerous health and tuberculosis personnel throughout the country.

Training of key personnel in charge of the implementation, supervision and consolidation of tuberculosis programme has been the privilege of the Institute - a responsibility which we have discharged in full meassure, so that no District Tuberculosis Centre need be handicapped due to shortage of trained personnel. Our early satisfaction in training

was to draw their imagination to the great potential of the programme through which persons with symptoms suggestive of tuberculosis could be provided diagnosis and treatment free of cost close to their homes and communities, on ambulatory basis. Today in addition, we lay emphasis on the changing and developing field of general health services where integration has an added dimension with other national programmes in the health sector, dovetailing with other socio-economic programmes. Reaching out to the people through multipurpose workers & community health volunteers/village guides are also themes that highlight our training programme. Today we have also the opportunity to get from our trainees valuable feed back as obtained in their work situations.

Often our optimism of coming to grips with the problem is clouded, not because of any upward trend of the disease, but because of the country's sagging commitment to the cause. The malaise takes various forms such as dislocation of key personnel meant to function as a team, improper utilisation of resources, haphazard and disproportionate allocations of supplies, etc.

The technical and operational soundness of the National Tuberculosis Programme does not provide much scope for modifications except of course may be in the event of a major breakthrough in the feasibility of short-term regimens under community conditions. Today, modifications necessary in entrenching the programme within the health care delivery system is of utmost importance. It has to be carried out providing great resilience to the tuberculosis programme so that it can function within the recurring changes and modifications of the health system. The clarion call to provide Primary Health Care should find a response in the National Tuberculosis Programme as well. We in this Workshop hope to give the necessary direction to the National Tuberculosis Programme which is worthy of the strategy expected to provide health for all by 2000 A.D.

The participants of this Workshop on Tuberculosis & Primary Health Care are drawn from the length and breadth of this country; people with commendable experience in health planning, policy decisions, health administration and medical education. It is our belief that the deliberations during the various seminars and subsequent recommendations, will help in establishing tuberculosis services as an intrinsic and vital component of Primary Health Care throughout the country. Providing a momentum to it in 1982 will be a fitting tribute to the memory of Robert Koch.

SCIENTIFIC SESSION II
"National Tuberculosis Programme and Primary Health Care"

Moderator : Dr. D. Banerji
Rapporteur : Mr. V.A. Menon
Miss. M.A. Seetha
Speakers : Mrs. Radha Narayan - Primary Health Care
Dr. G.V.J. Baily - Primary Health Care and District Tuberculosis Programme

The outline of Primary Health Care was sketched as a backdrop to District Tuberculosis Programme (DTP) in the context of Alma Ata Declaration, namely that "Primary Health Care is essential health care made universally accessible to individuals and families in the community by means acceptable to them through full participation and at a cost that the community and country can afford. It forms an integral part both of the country's health sytem of which it is the nucleus and the overall social and economic development of the community".

It was pointed out that the country's health system embodies the concepts enunciated in the declaration. In the span of more than three decades since the Health Survey and Development Committee's recommendations, there has been consistent efforts to improve the delivery of primary health care.

The demographic and socio-economic features of the country and the present health system in rural areas were discussed in detail.

The following concepts embodied in the Primary Health Centre were enunciated with illustrations:

1. Regionalization.
2. Reaching out to people.
3. Spectrum of services.
4. Integration.
5. Two-way referral.
6. Governmental responsibility.

At the conclusion of the presentation, areas for discussion were as follows:

1. Can health secetor give a lead to other sectrors of development?
2. Can there be equitable distribution of health services ?
3. How much flexibilty in implementation is possible between States and within States?

4. Does multi-purpose work meet the needs of the people or is it for the convenience of the health system ?

5. what is the recognition given to other systems of medicine ?

6. Can voluntary agencies be complementary or are they subsidised units of Government?

7. Are we willing to transfer responsibility for health care to people ? If so, to what extent ?

Dr. Baily presented the District Tuberculosis Programme performances in relation to Primary Health Care. It was presented as follows :

Firstly, what is expected of the health services in relation to the National Tuberculosis Programme (NTP)? The District Tuberculosis Centre (DTC) is expected to perform 6 main functions viz., the clinical service, referral service, implementation of the programme at the PHIs, supervision, provision and maintenance of equipment, supplies and reporting. Peripheral Health Institutions (PHI) are expected to perform three functions viz., clinical service (diagnosis and treatment), referral of patients and reporting. It was emphasized that all these functions are relatively very simple. It has been demonstrated that they can be performed without any difficulty.

However, from the performances of the DTPs, the following main observations can be made :

1. that the DTPs are functioning differentially in different States of India; whereas in some States of India, the programme is functioning relatively satisfactorily, in others it was not so satisfactory;

2. that while a substantial number of trainees have been trained, a large number of DTCs were still without trained staff;

3. that implementation and maintenance of the programme had not improved over time, but reporting had improved substantially. It was felt that improvement in the functioning of the programme would follow the improvement in the reporting.

Apparent reasons for short-comings were identified. The reasons were related to :

1. Health structure in the States, District and PHI level.
2. Health activities; case-finding, treatment, referral and reporting.
3. Interaction of resources—four resources were identified :
   a) Knowledge of the health care delivery personnel.
   b) Facilities, i.e., equipment, supplies, etc.
   c) Man-power; professional, technical and supportive, and
   d) Efficiency in use.
4. Reasons attributable to the community.

At this stage, Dr. Baily briefly dealt on the primary health care and reiterated that the NTP satisfies all the concepts of the primaty health care, since it was envisaged as an integrated programme. However, two aspects that it did not encompass at present was the out-reach from the Primary Health Centre (PHC) downwards, through the Multi-Purpose Worker (MPW) and Community Health Volunteer (CHV) schemes and community participation.

Discussion—Major points of discussion were ;

1. At the present context, the District Tuberculosis Officer (DTO) and DTC have no functions to perform and they should be scrapped.

2. DTO cannot be functioning as manager for various reasons and that function to be shifted to PHC doctors.

3. Rethinking on medical education has to be done to include management as a component in it.

4. The present health system does not allow for improvement or to provide primary health care. Lessons from a few successful projects like Jamkhed, Mini Health Centres, etc., have to be taken for drawing up a plan of action.

5. The MPWs and CHVs have a great role to play in DTP and primary health care.

6. Involving the community or community participation.

7. Role of voluntary agencies.

The definition of Primary Health Care as given by the speaker Mrs. Radha Narayan, was suggested to be changed so that more inputs could be provided. But, Prof Banerji said, that there was no need for any new definition, as the one given was adequate and accepted by all in the country.

Dr. B.C. Arora, started the discussion by saying that the DTO and DTC are dead in the present context of development and a new thinking has to be given in the medical education as has been done in Australia to produce doctors to meet the needs of the community. This evoked a lot of discussion and each participant reviewed the experience in his/her own State and said that both DTO and DTC have to have be retained. It is too premature to remove the DTO's post. All the health programmes are having their personnel at district level and hence, DTP must have the DTO. The experience of Karnataka in removing the post of DTO and giving the supervision responsibilities to the District Health Officers (DHOs) and Assistant District Health Officers (ADHOs) was reviewed. Dr. Baily, who monitors the DTP reports in the country mentioned that though the decision of Karnataka was in tune with the principles of integration, the staff of PHI are not having the necessary knowledge and skill to undertake their responsibilities with regard to tuberculosis, even though they are aware of the DTP. The

supply system and co-ordination has been disturbed. He pleaded that even if ADHOs were to do the supervision of PHIs, the technical advice has to be providad by DTO who is a trained man.

The two clashing functions of the DTO namely, the clinical functions at DTC and the managerial function of managing the programme, were discussed as the basic reason for this inadequate functioning. The Moderator made it clear that there was no dichotomy in the two functions. The group felt that the management aspect should become part of medical education. It was even suggested that it should be shifted to the PHC level. During the 6 months field training of interns, all the programme officers should participate in the field training to make it meaningful and purposeful.

The status of DTO was considered as another factor which hindered his efficient functioning. The Punjab's experience with regard to raising the status of the Chief Medical Officer (CMO) was reviewed. Though CMO was mini Director at district level with the powers of even transferring officers upto Class II, the programme (DTP) had a set-back with the upgrading of Block Health Officers to Class I status. While the whole group felt that DTO's post to be made Class I, Dr. V. Benjamin, suggested that the pros and cons of upgrading the post be reviewed in all its aspects before upgrading it.

The training of PHC doctors for undertaking tuberculosis activities were also discussed. Some participants suggested that the National Tuberculosis Institute (NTI) has to take up the training of PHC doctors. It was pointed out that this aspect of training of PHC doctors and staff was in-built in the programme in which the DTO and his team is given the responsibility of training PHC Medical Officers and staff. Some members felt that the training of PHC Medical Officers was to be done at DTC instead of PHI itself, as it would give ample time for them to learn. At this point, Dr. K.S. Aneja highlighted the findings of a study conducted at NTI in this regard. Under the study, a group of doctors of PHCs were trained at NTI and another group in their own PHCs. This statistically designed study showed, that there was no difference in the performance of case-finding in the two groups.

During the discussions, it was mentioned that the problem of PHCs is that, raw graduates are posted at PHC and they are made to implement all the health programmes. Because they are not trained in managememt, the programmes are failing. The remedy suggested was to post experienced doctors with training in public health.

A suggestion was made that we should start reviewing some of the projects like Jamkhed and Narangwal, so that lessons could be drawn from them for planning DTP as part of Primary Health Care. In this connection, Dr Sanjivi's recommendations of Mini Health Centre and Health Co-operatives were mentioned. Dr. Daniel Isaac pointed out that mini health centres are not viable units for implementation of the programme. Moderator, Prof. Banerji, drew the group's attention to the fact that the small experiments are not applicable to a huge country like India with her 660 million population

spread in the 5,60,000 villages, because they are not reproduceable. Also, he highlighted the epidemiological limitations of mini health centres. He pointed out that the basic issue is the optimization of the available resources to maximise the benefits and this was not fulfilled by many of the projects. Dr. V. Benjamin, rightly pointed out that jumping from one experiment to another without assessing it, is not a healthy move. He pointed out that only in NTI and NTP there has been a constant evaluation on operational basis, whereas in other programmes slogans are put up before having and hard evaluation, and the planners rush to them.

The bottlenecks in the success of the programme were listed as follows :

1. Non-availability of basic drugs. The distribution mechanism is at fault.

2. Sputum examination of the chest symptomatics who are knocking at the doors of the PHIs is not done. How can enough motivation be provided to the doctors to undertake this responsibility?

3. Learn from the experience of Jamkhed Project, in utilizing the Community Health Workers. This stresses the need for scciological thinking and not thrust the programme on the people, and for which services are not available at PHIs.

4. A proper supervisory machinery to review the treatment offered to patients in PHIs has to be developed since many patients are on treatment for years without reviewing his condition and thereby wasting the drugs which are scarce in the country.

Role of Voluntary Agencies

The role of voluntary agencies in DTP as part of Primary Health Care was stressed. The role played by TB Association of India, Christian Missionaries, Rural Health Institute of Gandhigram were reviewed. The group felt that the Government should have confidence in these agencies and support them for the efficient functioning. The Moderator at this juncture mentioned that the TB Association of India has done yeoman service in compelling the Govt. to take up the problem of tuberculosis for planning a control measure. Dr. Kul Bhushan wanted integration of all voluntary agencies for avoiding duplication of work.

Utilisation of MPWs and CHVs

At the outset Prof. Banerji pointed out that CHV Scheme has a great potential in community participation. The group agreed that MPWs as well as CHVs have a great role to play in case-finding and case-holding. In this connection Dr. K.S. Aneja gave the results of two NTI studies in involving the MPWs. By active case-finding methodology by MPWs the case-finding activity can be almost doubled. In improvement of case-holding they can motivate the patients and their families for completion of the drugs by the patients. Dr. Chittiseshu raised an important issue in the training of

MPWs. She mentioned that only one hour was made available for teaching DTP in the entire programme and the time was very inadequate. It was stressed that the training at State TB Centre, Central Training Institute & HFWTCs should be strengthened.

Community Participation

The group came to the conclusion that without community participation Health for All by 2000 A.D. could not be achieved. Primary Health Care tries to put people's health in people's hands. Hence, Prof. Banerji mentioned that it becomes important to learn from the people what they want and develop a technology suitable for that purpose. People should not become subservient to technology. He also mentioned that health delivery system should not absolve its responsibility in the process of putting people's health in people's hands. He pointed out four issues that emerge out of this understanding :

1) Are we transferring the responsibility to the people?

2) If so, how much we back them up to support them.

3) The health system should be with the people.

4) Intersectoral coordination and cooperation is necessary.

The group felt that CHV scheme is a positive effort in the direction of community participation. There is a need for the study of the social structure in the Indian villages to find the process of election /selection of CHVs. Prof Banerji felt that the very fact CHVs are to be trained at PHC by the PHC staff contradicted the concept of people's health in people's hand.

The process of obtaining people's participation was discussed at length. Dr. Ramachandran explained their experiences in Gandhigram and mentioned that there is no common solution for this. Each community has to be studied and dealt with in its own way. Sitting with the people and discussing with them to define their needs & priorities can help in involving the community. Prof. Banerji also stressed that community participation can become part of the system only when we learn from the people.

Prof. Banerji while summing up the session highlighted the importance of involving CHVs and DTPs in case-finding. He mentioned that resources may have to be increased if necessary. He also drew the attention of the group to the fact that the concept of Primary Health Care was anticipated two decades back under DTP in the form of treatment organization, referral system and reporting.

Dr. G.V.J. Baily mentioned that if DTP has to become part and parcel of the health care, there should be improvement in all aspects of health system. He mentioned that MPW scheme can be efficiently used for improvement of case-finding and CHVs in motivation of patients. But he gave a word of caution to resist the temptation of delivering the anti-TB drugs at the homes of the patients either by MPW or CHV, because he felt that there would be a tremendous wastage of drugs if such a procedure is adopted. He suggested that unless in very special circumstances, it would not be adviseable to provide drugs below the sub-centres level.

RECOMMENDATIONS OF THE WORKSHOP

1. The Tuberculosis Programme which originated as a 100% Centrally sponsored scheme in 1962, was subsequently converted to a Centrally aided scheme in 1978, wherein the Centre and State shared 50 : 50 of the programme expenditure. This has adversely affected the domiciliary treatment programme, as large number of TB Centres are unable to get the requisite amount of anti-TB drugs. It is, therefore, recommended that tuberculosis programme be reclassified as 100% Centrally sponsored scheme.

2. At present, in the Health Care Delivery System, referral procedures from the periphery to the District and specialised levels and vice-versa, are casual and not systematized except for tuberculosis. Because of this, tuberculosis referral is also not properly functioning. It is recommended that the two-way referral system be systematized.

3. Since the time of laying down of the treatment policy in the National Tuberculosis Programme (NTP), as enunciated in the Manuals for the District Tuberculosis Programme (DTP), several technical developments have occurred in the field of chemotherapy. In view of this, the treatment policy in the NTP requires to be reformulated and fresh guide lines laid down. The following recommendations were made :

   a) Priority to be given to sputum positive cases, but "suspects" diagnosed at the District Tuberculosis Centre (DTC), should not be neglected.

   b) PAS should be replaced by Ethambutol, in view of its better acceptability, and

   c) The possibility of using Short-Course Chemotherapy in the programme, be examined.

4. Several National Programmes are target-oriented. It was felt that this is not appropriate for NTP, since there already exist indices for evaluation of the performances of the programme.

5. The greatest possible use should be made of the Multi-Purpose Workers (MPWs) and Community Health Guides in the activities of the DTP through the provision of appropriate facilities and training. It was stressed that the MPWs should be trained at the Primary Health Centre (PHC), where DTC personnel along with the Medical Officer of the PHC who has been trained at the Health & Family Welfare Training Centres and other personnel of PHC should be involved. In this connec-

tion, the following have already been circulated by the Ministry of Health & Family Welfare, vide their letter No. Z. 22015/13/78-RHD, dated 14th April 1978 :

a) A lesson plan for training of MPWs in NTP,

b) Guidelines of NTP, lesson plan for Block Level Medical Officers, and

c) Role of PHC in NTP.

It was stressed that this document may now be circulated to the PHCs by the State authorities.

6. It was strongly emphasized that for the efficient functioning of the Health Care Delivery System, appropriate supervision is essential. For this, the channels of supervision of workers were identified. The MPWs would be supervised by Health Supervisors, while the Medical Officer of the PHCs would be responsible for over-all supervision of all health activities including tuberculosis at the PHC level. The District Tuberculosis Officer would continue to give technical guidance, supervision and provide supplies to the Medical Officers of the PHCs.

7. The existing recording and reporting system of the MPW Scheme was reviewed and its was recommended that they should further be simplified. It was noted that tuberculosis has been included in the integrated report at the MPW level.

8. In view of the experience gathered from the other National Programmes, it was recommended that operational studies be conducted by the NTI, on the feasibility of involving the MPWs to perform tuberculosis work along with all the activities assigned to them.

9. To ensure better community participation in the Health Care Delivery at the PHC level, it was recommended that Health Advisory Committee be formed both at the PHC and at village level. The function of the Health Advisory Committee would be :

a) To raise resources from the community to augment the funds of the health services,

b) To enlist the co-operation of the community to participate in the health services offered at the PHC, and

c) To help the Medical Officer of the PHCs to sort-out some of the problems of the PHC.

The exact mechanism of the formation and functions of the Committee will have to be worked-out. It was pointed out that this Committee would form a component of the Development Committee at the Community Development Block level. It was further suggested that a Health Committee at the village level be formed which can assist in defaulter retrieval and motivation of the patients.

10. The role of Voluntary Organizations to involve the community was discussed and it was noted that the contribution by the various Voluntary Organizations, except the Tuberculosis Association, was meagre and the activities tend to overlap each other. In view of this, it was recommended that the role of Voluntary Organizations should be complementary to the governmental efforts and should be directed towards mobilizing community participation without overlapping.

11. It was recommended that studies in the mechanism to obtain the community participatian in health programmes should also be conducted.

IMP

Directorate General of Health Services
Nirman Bhavan, New Delhi-110 011

No. T. 18020/6/80-TB

26th Aug, 1980

From : The Director General of Health Services

To : All Directors of Health Services of States/Union Territories

Sir,

Sub : The new policy of BCG vaccination in the National TB Control Programme

As you are aware, the VCG vaccination programme has been in operation in our country for the last 30 years. The vaccination was initially offered to all persons negative to tuberculin tests and later to all persons in the 0-19 years age group without any tuberculin test. The strategy of BCG vaccination programme was to cover the entire susceptible population initially by a mass campaign and thereafter to maintain the protective effect of BCG vaccination in the community by covering the young population added by new births regularly through the general health services.

To make BCG vaccination routinely available in the general health service, therefore the BCG vaccination policy of the country was revised about three years back and it was decided that :

1) the mass BCG vaccination teams should be disbanded and the technicians of these teams should be posted in Primary Health Centres and sub centres for training of all the paramedicals workers in the rural areas in the technique of BCG vaccination.

2) In future, BCG vaccination will be performed by the multi purpose health workers like basic health workers, ANMs etc., in their respective areas of responsibility under the expanded programme of immunization.

3) The multipurpose workers will cover the infants within 3-9 months of their birth rather than immediately after birth, as tuberculin conversion after

vaccination immediately after birth has been found to be unsatisfactory and BCG vaccination within 3 to 9 months after birth is operationally convenient for the multipurpose workers in the EPI, as this can be performed at the time of giving any of the three doses of DPT vaccine.

4) In urban areas where BCG vaccination of the newborns immediately after birth has been in operation for a number of years because the newborns are available in the maternity institutions immediately after the mother's confinement, and once the mother leaves the hospital, it is difficult to contact the child newborn vaccination immediately after birth may continue.

The recently published results of the BCG trial of the ICMR in the Chingleput district have created some doubt in the minds of various members of the profession about the use of BCG vaccination. The results have shown that BCG vaccination failed to prevent emergence of infectious pulmonary tuberculosis cases in the vaccinated group in the trial. However, the direct benefit of BCG vaccination is in the reduction of the incidence of clinical forms of tuberculosis diseases following upon primary infection, like miliary tuberculosis, meningial tuberculosis, bone and joint tuberculosis, tuberculosis lymphadinitis etc., the Chingleput study has not provided any definite evidence, one way or the other, regarding effectiveness of BCG in preventing such clinical diseases after primary infection, whereas other scientific BCG studies suggest that enough protection is indeed conferred by BCG vaccination against these types of clinical tuberculosis manifestations that are mostly prevalent in infants and children.

Our revised policy of BCG vaccination therefore continues unchanged. All the paramedical workers in the rural areas who are going to be the multipurpose workers under the Expanded Programme of Immunization (EPT), should be expeditiously trained in the technique of BCG vaccination. The training methodology has already been circulated vide Government of India Letter No. 18011/1/77-PH dated 24-5-1977. During training, the trainees are to perform the vaccination in the thicker skins of higher age groups first and gradually go down to the very thin skin of the newborns. This has been done with the purpose of properly training the paramedical workers for intradermal vaccination in the very thin skins of the newborns and infants and also in the process of such training, to cover the backlog of unvaccinated population in the 0-19 years age group that is still available in the rural areas.

When the expanded programme of immunization is implemented in any district, the target age group to be covered under the programme should be all the infants within 3 - 9 months of their birth as per the recommended immunization schedule.

In urban areas where newborn BCG immunization immediately after birth is being practised for a long time, the same may be continued for operational convenience.

The age groups to be covered under BCG vaccination in urban and rural areas have in fact been clearly explained in this Directorate Circular No. 12-16/75-TB dated 21.2.78, that has been circulated to all AMOs, TB Officers and Directors of Training and Demonstration centres, in all the States and U.Ts.

One BCG vaccination performed properly within the first year of life is considered to be adequate, as the protection afforded lasts for several years. Revaccination at subsequent years of life is therefore not being considered at present.

I would request you to kindly bring the above instructions to the notice of all persons engaged in BCG vaccination and others responsible for implementation of the EPI in your State including paediatricians, District and State TB and EPI Officers, PHC Medical Officers, etc.

Yours faithfully,
sd/-
(Dr. B. Sankaran)
Director General of Health Services

No. Z. 22015/13/78-RHD

MINISTRY OF HEALTH & FAMILY WELFARE

(RURAL HEALTH DIVISION)

NIRMAN BHAVAN
NEW DELHI-110011

Dated 14 th April 1978

To

The Directors of Health Services
of all the States/Union Territoris.

Subject :- National T.B. Programme-Role of Multipurpose Workers

Sir,

I am directed to enclose herewith (i) the Lesson Plan for Training of Multipurpose Workers in N.T.P. (ii) Guidelines of N.T.P. Lesson Plan for Block Level Medical Officers and (iii) Role of PHC on National Tuberculosis Programme.

It is requested that these may be included in training Programme under MPW Scheme. Copies of this paper may please be sent to the C.M.O. of each district and all the PHC in your State for their use.

Yours faithfully,
Sd/-
(Dr. MRS. K. KATHPALIA)
Deputy Assistant Commissioner (TRG).

Copy for information and necessary action:-

1. All Central Training Institutes,
2. All H.F.P.T.Cs.
3. All Regional Directors.
4. Advisor (TB).

(Dr. Mrs. K. KATHPALIA)
Deputy Assistant Commissioner (TRG).

Directorate General of Health Services
TB SECTION

Subject:- various aspects of launching and revitalising National TB Programme.

In continuation of this Directorate U.O. No. 20-11/75-TB, dt. 20-4-77 a copy each of the 'Lesson Plan for Training M.P.Ws for N.T.P.', 'Role of P.H.Cs in NTP and Guidelines of the NTP Lesson Plan' for the Block Level Medical officers is forwarded herewith. It is requested that these documents may plaese be passed on to the Department of Family Welfare for incorporation in the manuals for training and job specifications and in the meantime for immediate multiplication and circulation to all the States UTs. and Health and Family Planning Training Centres and to other Institutions training multipurpose workers etc. so that the services expected specially from these field workers in respect of TB Control Programme is highlighted.

Sd/-
(Dr. B.N.M. BARUA)
Adviser-in-Tuberculosis
for Director General of Health Services

Deptt. of Health, US (PH)
DGHS U.O. No. 20-11/75-TB, dt. 26-4-77

	Diagnosis sputum examination done at PHIs and following an X-ray of chest at DTC.			Show bacilli under the micro-scope
c)	**Discussion :** How advice to persons (including pregnant females/mothers) with chest symptoms will help in case finding, show how the advice is to be given the people	15		

B. SECOND LESSON :

	Content	Time	Method of presentation	Media
a)	**Preparation of sputum smear in villages :** Recording name and address of the symptomatic, numbering of slide, collection of spot sputum specimens, preparation of sputum smear from suitable sample. Fixing smear by passing over flame, sending smear to PHC.	15 mt.	Lecture and Demonstration	Class room
	Requirement : Sputum Cups-Record forms, slides, spirit lamp and spirit, glass marking pencil, match box.	30 mts.	Practicals twice including disposal of sputum cup	PHC
b)	**Disposal of sputum cup** Discussion	10 mts.		

C. THIRD LESSON

a)	**Treatment :** What drugs are available, what Regimens are prescribed importance of regularity, dosage, duration and uninterrupted treatment what to do when toxic side effects are observed/reported	30 mts.	Lecture A demonstration of BCG vaccination*	Black board

** This could be arranged according to the vaccination manual to be issued separately for MPWs.*

	Importance of motivation and how it is to be done. Defaulter actions - why and how they are taken. BCG vaccination efficacy, safety, indications and method.			
b)	**NTP :** Four principles of NTP, how diagnosis, treatment and BCG vaccinations are done from PHC ?	5 mts.	Lecture/discussion	Flip charts
c)	**Recapitulation and discussion :** Role of PHCs and MPWs.	10 mts.		

GUIDELINES ON THE NTP LESSON PLAN FOR THE BLOCK LEVEL MEDICAL OFFICERS

The lesson plan is based upon four factors, (i) that tuberculosis (being a communicable disease) control is an accepted activity of PHCs, (ii) that National Tuberculosis Programme (NTP) being integrated with general health services is a routine and not specialised activity, (iii) MPWs will be involved in work-loads hardly worth mentioning and (iv) that medical officers of Primary Health Centres are the trainers and supervisors of multipurpose workers.

Duties of MPWs under NTP

a) "Symptomatics" i.e., persons with cough of 2 weeks or more, chest pain and fever of 4 weeks or more or haemoptysis encountered during routine field visits are to be referred to the PHC for sputum examination for diagnosis of pulmonary tuberculosis. This would be specially relevant of MCH/FP work and would fit in with their responsibility of giving treatment for minor ailments.

b) The treatment of tuberculosis has to be for 1-2 years. Therefore, tuberculosis patients under treatment of the PHC are to be encouraged to take their drugs regularly for that period. During routine home visits, those patients and their family members are to be reminded of the bad consequences of irregular and inadequate treatment. This fits in with the advisory relationship that MPWs are expected to develop with families.

c) The Newborns and other unprotected children are to be given BCG vaccination along witn other immunization.

d) The basic facts about tuberculosis diagnosis, treatment and prevention facilities available free at the PHC are to be told during health education of the community.

The above duties do not interfere with other routine duties of MPWs since not more than 2-3 TB patients may be in an average village.

Content of Teaching :

a) **Under introduction :** TB is not hereditary, it is caused by a microscopic germ, it spreads from one TB patient to another through sputum droplets sprayed during coughing or sneezing, therefore sputum positive patients are given priority as they are most dangerous. It causes great physical, psychological, social and economic suffering not only to patients but their families and the community. Therefore, TB is a major public health problem and its control is essential.

Infectious patients of pulmonary tuberculosis if diagnosed and properly treated on priority basis in large numbers would cut the transmission of infection and control tuberculosis. All the tuberculosis services are offered free.

b) **Case finding** : Among the suggestive symptoms of tuberculosis cough is the most important and common symptoms. Its duration (2-weeks) is crucial because coughs of shorter duration are likely to be non-tubercular. It is imperative for proper case-finding to examine all chronic cough patients by sputum examination at the PHC.

Diagnosis : TB is diagnosed by examination of sputum under a microscope. It could be repeated if once negative and those who are sputum negative could be sent for X-ray examination at District TB Centre.

c) **Treatment** : Anti-tuberculosis drugs cure tuberculosis even when taken at home, there is no need for hospitalisation, isolation, special diet or absolute bed rest.

The common drugs for tuberculosis are isoniazid (INH), Para-amino Salyclic acid (PAS), Thioacetazone (TZN) and Streptomycin (SM). Excepting SM, the other drugs are taken by mouth. There are five standard drug regimens; one of them is prescribed at the time diagnosis is made by the PHC Medical Officer. The duration of treatment is for a minimum period of 12 months but could be Prolonged to 18 months or more by the MO. Treatment should be uninterrupted, and drugs have to be taken in proper doses regularly without fail otherwise there is danger of emergence of drug resistance.

Motivation :

Since the treatment period is a long one, the importance of regular and continuous treatment is emphasised upon the patient through motivation. Primary motivation has to be done by the Medical Officer, as patients have confidence in him. Subsequent motivation by the Drug Distributor at the PHC is permissible as the patient does not see the MO at every drug collection, which is generally once a month.

Defaulter actions : are important since it is difficult for patients to remain regular for full one year. If a patient does not come to collect drugs on the due date, a letter is written to patient first reminding him to collect drugs. If he still does not come, the area MPW will be informed so that the MPW can motivate the patient during a routine visit to that village to collect drugs.

MPWs should keep a list of all TB patients on treatment in their area so that during their periodic visits to those families the patients could be encouraged to complete their treatment properly.

Prevention of tuberculosis : BCG vaccination protects persons from getting tuberculosis. It is a safe and effective vaccination, simple to give after proper training. It is given to all newborns and those under 20 years age who are unprotected. The

adverse effect after vaccination, if noticed, have to be brought to the attention of Medical Officer of PHC.

At present BCG is given intradermalley by syringe and needle. Primary vaccination should be given as early in life as possible. Re-vaccination is not essential, as protection lasts for many years.

d) **National Tuberculosis Programme** : The anti-tuberculosis services are offered free and near to people's homes. The organisation consists of a DTC at district head-quarters and a large number of PHIs (see background document). The services are supervised and maintained by a managerial team operating from DTC.

Health education of the community : MPWs have to educate the people on tuberculosis-its causes, spread and the free services available for its diagnosis and treatment whenever they give their routine health talks.

The Role of PHCs in National Tuberculosis Programme

Pulmonary tuberculosis is a major public health problem, next only to malaria. Approximately 16 persons per thousand of population have X-ray shadows sugsestive of active pulmonary tuberculosis. And four per thousand having tubercle bacilli in sputum are spreading the disease to others. Tuberculosis is equally prevalent in the urban and rural areas. In an average district the number of infectious patients at any one time is estimated to be 5,000; in a PHC area their number would be 300. Physical, psychological, social and economic suffering inflicted by the disease is enormous.

The National Tuberculosis Programme (NTP) aims to control tuberculosis and alleviate the human suffering. The control services are offered by the State Governments from all health institutions (integrated programme), urban rural, and the Central Government renders assistance to the programme in many ways. At present, the NTP covers a majority of the districts in the country.

District Tuberculosis Programme :

A district is the basic administrative unit of the country. The District Tuberculosis Programme (DTP) is the basic unit of NTP. A DTP consists of one District Tuberculosis Centre (DTC) and on an average, 50 Peripheral Health Institutions (PHI) comprising PHCs, general hospitals, rural dispensaries etc.

The function of the DTC is to plan, implement and maintain the DTP in the entire district. For this purpose the government posts a specially trained team of key programme personnel at the DTC (trained at the National Tuberculosis Institute) comprising a District Tuberculosis Officer (DTO), a Laboratory Technician (LT), a Treatment Organiser (TO) an X-ray Technician (XT), a BCG Team Leader (NMTL) and a Statistical Assistant (SA).

The function of PHIs is to render the tuberculosis control services to the people attending there. The DTC team visits the PHIs regularly and helps them in planning and rendering such services. The visits are called supervision visits.

Case finding : Sputum examination (microscopy of sputum smears) is offered to every one who complains of cough, fever or chest pain of more than 2 weeks or haemoptysis (so called symptomatics). Normally it is not necessary for the PHC medical officer to spend time on physical examination of a patient before ordering sputum examination. However, if sputum test is negative (or repeatedly negative), the patient should be carefully examined to decide whether to refer him for X-ray examination to the DTC.

For so few sputum examinations in a PHC, either the PHC microscopist or one of the PHC staff, who does not have to leava the PHC for routine duty, is trained by the DTC/LT, besides providing supplies such as sputum cups, stains, etc. Although the PHC Medical Officer should exercise day-to-day supervision on microscopy at his centre, the LT from the DTC would visit once a month for technical supervision.

Treatment

Every sputum positive patient diagnosed at the PHC (and those referred patients diagnosed at the DTC on the basis of X-ray) should be put on treatment by the MO on the day of the visit. It is important to avoid losses from treatment, not only at the time of diagnosis but till the treatment is successfully completed, if tuberculosis is to be controlled successfully.

It has now been established that domiciliary treatment of TB patients gives as good results as sanatorium treatment and generally preferred by patients because their home life is not disrupted. Moreover, bed rest, nutritious diet, multivitamins, nursing care etc. play a minor role in treatment if at all, because the chemotherapeutic drugs are highly effective. Therefore, the PHC medical officer should educate such of his patients who are not aware of these modern advances to enlist their willing co-operation in their treatment.

The following standard drug regimens are available for prescribing. They are almost equally good and their use really depends on the availability of drugs or distance which may prevent a patient to come to PHC for injections twice a week or side effects etc. Drugs are provided to PHIs by the DTO. Treatment is to be entirely free.

It would be useful to bear in mind that more important than a regimen are the treatment criteria i.e., (i) the patient must understand and take the drugs in the proper dosage, (ii) regularly i.e., daily or twice a week, according to the regimen, (iii) uninterruptedly and in the event of side effects, he should not stop taking drugs but report to the MO and (iv) for at least one year longer, as advised by the MO. Good results expected from a regimen cannot be ensured without the mentioned criteria.

Regimen	Drugs and doses	Mode of adminis	Other instructions
R1	INH - 300 mg and Thio-acetazone 150 mgm.	To be taken in a single or to divided doses orally (INH preferably to be given in a single dose)	To be self administered at home; daily after meals; collected monthly from DTC/PHIs.

R2	INH - 600 to 700 mg and SM-1 g. or 0.75 g. Pyridoxine 10 mg. if prescribed	INH to be taken in a single dose orally & SM by intramuscular injection; both drugs given at the same time under direct supervision of DTC/PHI Staff	Administered under full supervision biweekly i.e. at intervals of 3 and 4 days alternately. Pyridoxine may be given with every dose of INH
R3	INH - 300 mg and PAS - 10 g.	To be taken in two divided doses orally (INH may be given in a single dose of 300 mg)	To be self-administered at home; daily after meals, collected once a month from DTC/PHIs
R4	INH - 300 mg.	To be taken in a single dose orally	-do-

R5 Two-phase chemotherapy

Whenever practical DTO may prescribe an initial intensive chemotherapy for seriously ill TB patients with daily SM, INH and PAS or TZN for the first 8 weeks followed by less intensive chemotherapy with any one of the two-drug regimens described above for the rest treatment period.

Note : Patients with X-ray evidence of pulmonary tuberculosis who are negative on sputum examination should also be prescribed drug regimen R1 in the case of extensive and/or cavitary disease; for others, drug regimem R4 should be sufficient.

Accordingly, it becomes the duty of the MO to 'motivate' each patient on those points at the time of starting his treatmant. Subsequently, the pharmacist or any other person entrusted with the duty of drug distribution should remind or remotivate the patient on those points. And, in the event of a default in drug collection, take defaulter action, either through a post card or home visit by worker, multipurpose worker (basic health worker A.N.M. etc.) to bring the patient back to treatment. This is important, if failure to convert the patient to the sputum negative status and emergence of drug resistance are to be avoided. The TO from DTC would visit once a month for technical supervision.

BCG Vaccination

BCG vaccination will be given by multipurpose workers, to the susceptible population under their care. BCG vaccination can be given soon after birth, the earlier the better, and direct i.e. without the tuberculin test. Multipurpose workers have to be trained how to reconstitute freeze-dried vaccine in the field, give intradermal vaccination correctly and ensure good coverage of the population. The MO of PHC has to play an important role in this, even though services of BCG technicians will be available at the supervisory level.

Role of the PHC Medical Officer under DTP

1. Select symptomatics amongst the PHC outpatient for sputum examination.
2. Prescribe treatment and motivate patients diagnosed to be suffering from tuberculosis.
3. Train and guide the multipurpose workers under him in how to (i) reorganise "symptomatics" for sputum smear making and referring to the PHC (ii) ensure proper treatment completion of patients registered at the PHC and (iii) BCG vaccination of the susceptibles, amongst their respective populations.
4. Supervise the day-to-day work of the microscopist, the drug distributor and the multipurpose workers of the PHC.

Role of supervisors of multipurpose workers under DTP

1. That multipurpose workers understand the nature of tuberculosis as a disease and details of the TB Control services offered from the PHC.
2. That they enquire about symptomatics during their "beats" of the villages under them, prepare sputum smears and refer them to PHC for examination.
3. Hand over names of defaulting patients (obtained from the PHC) to them for home visits, remotivation and bringing those patients back to treatment.
4. Ensure that the newborns and other non vaccinated persons below the age of 20 years are given BCG vaccination by the multipurpose workers in their respective population.

Role of Multipurpose Workers under DTP

1. About 3% of the population are likely to be symptomatics, Casual questioning during home visits only is sufficient to find out who they are, and, if they have not already been to the PHC, they could be asked to do so now.
2. In a village not more than 2 or 3 patients could likely to be on treatment for tuberculosis.

   Close rapport with them will ensure proper treatment completion (what is proper treatment will be told to them by the PHC medical officer). In some cases a special home visit may be needed to retrieve the defaulters.
3. Only half of the population is below 20 years in age. Many of them would already have been BCG vaccinated. The annnal birth rate is about 4%. Therefore, a limited number i.e., new births and the non-vaccinated susceptibles, would have to be vaccinated in a systematic manner.

Source: DGHS Chronicle, Vol 17, Sept-Oct'81, No. 9 & 10
Central Health Educ. Bureau, N.Delhi.

Role of Institutions
NTI

NATIONAL TUBERCULOSIS INSTITUTE

RESEARCH ACTIVITIES

The Institute has formed an Operation Research Forum(OR) consisting of the Senior Technical Officers of the Institute, to study and analyse the problems under DTP and to plan and undertake research projects in a sequential manner. The forum met number of times to discuss the performance of the programme during the year through the reports received from DTPs in the country and to identify areas where research has to be taken up.

Research is an important function of the National Tuberculosis Institute, Bangalore. The research here is based on "Operational Research" which was applied for the first time in the country in the field of public health.

The results of applied research conducted by the Institute led to the formulation of integrated District Tuberculosis Programme (DTP).

Important Research Studies

Some important contributions of NTI in the field of Epidemiology, Sociology, Bacteriology, etc., are:

Sputum Examination

Sputum examination by direct microscopy - Ziehl-Neelsen method - is able to diagnose 85 per cent of the culture positive cases that attend the out-patient department of the Peripheral Health Institutions(PHIs).

Direct microscopy is a reliable, easy and practical tool of diagnosis applicable at the grass-root level with minimum training of available para-medical personnel at the PHIs and a proper supervision from a trained technician from the district level.

Epidemiological Survey

The repeat epidemiological survey among rural population was conducted by NTI through tuberculin tests, mass

miniature radiography and sputum examination(culture and microscopy), to establish the prevalence and incidence of infection, and the disease. After the initial round, three more rounds of survey were conducted at an interval of 1½ years, 1½ years and two years. The period of field work was spread over seven years. A fifth round was taken up in 1977 after about nine years interval and completed in two years. The study showed that about a third of the population was infected and also that the new cases occuring during a year, almost equalled the number of cures and deaths during the same period, thereby maintaining the prevalence at the same level. These findings have given an insight into the almost unknown problem and changed the concept of a control programme.

Another epidemiological survey was carried out among 12,535 children in the age group of 0-9 years in 90 villages in a taluk of Bangalore District. The children were tested with 1 TU RT 23 and the tests were read after 72 to 96 hours. The tuberculin re-actions in the previously BCG vaccinated and non vaccinated groups showed no evidence of influence of BCG over the tuberculin reactions. Hence, a methodology of tuberculosis surveillance using simple method of periodic tuberculin testing of the population in younger age group, has been suggested by NTI as the cheapest, practicable and technically appropriate method of studying overall tuberculosis situation.

Sociological Studies:

Results of sociological studies on the awareness of symptoms suggestive of tuberculosis and action-taking among the cases of tuberculosis revolutionized the case-finding programme and gave a revised thinking on the concept of "early case-finding through mobile mass miniature X-rays",

implementation of which would have been an expensive effort, yielding very little results.

The awareness study showed that almost all (95%) of the cases of tuberculosis were aware of symptoms suggestive of pulmonary tuberculosis and more than half of them (52 %) were seeking relief from doctors of modern medicine. This important finding was one of the few factors which led to the formulation of integrated DTP, integrating the case-finding activity with PHIs where patients are already coming for relief of suffering. This methodology reduces the cost as well as helps the patients to get their services through institutions in which they have confidence.

Case finding:

The possibility of improving the case-finding activity of PHI by 'active case-finding' through the participation of Multi-Purpose Workers (MPW) who can collect sputum from patients suffering from cough for over two weeks, prepare a smear and send it for examination at PHCs, would help in improving the programme of tuberculosis control.

A pilot study conducted by NTI in selected PHCs in Chittoor District, Andhra Pradesh, has shown that the case finding can be improved 3-4 times with the participation of MPWs without adding much to their existing work-load. This study has also shown the need for strengthening the laboratory services of PHCs for effective diagnosis of all diseases including tuberculosis.

Day Light X-ray Developer

Research in X-ray picture developing, led to the development of a day-light X-ray developer box which has helped a lot in the process of development of X-ray pictures.

NTI has also evolved a monitoring system for the use of X-ray Technician for minor repairs of the X-ray units of DTCs. For a systematic reporting of the break-down of X-ray machines, a break-down report form was evolved. This has helped in saving of X-ray Engineer's time for minor repairs which involves huge expenditure to the state exchequer.

During 1980, some of the research projects started during earlier years were completed. Some were continued and a few new projects were started.

New Research Studies undertaken

Problem of Drug Default Under Short-Course Chemotherapy

Clinical trials to study the efficacy of Short-Course Chemotherapy involves a very strong organization with all the resources to compel the patients to consume the drugs. It is essential to know the drug default under the 'ideal' conditions of a clinical trial and the tremendous organizational need to help them complete their treatment. The study envisages to get the information.

Study of Intermittent Short-Course Chemotherapy

As sequential to the study of Short-Course Chemotherapy, another study of Intermittent Short-Course Chemotherapy was started in collaboration with the Tuberculosis Research Centre, Madras. The study is continuing along with the Short-Course Chemotherapy study at the Lady Willingdon Tuberculosis Demonstration and Training Centre, Bangalore.

Social Aspects of Patients on Intermittent Short-Course Chemotherapy

Compliance with a clinical trial poses a challenge to the patients who are compelled to complete the treatment as desired by the design of the study. Since completion of treatment by the patients of tuberculosis involves various social aspects and

social problems, the study plans to identify some of the socio-economic problems of the patients on Intermittent Short-Course Chemotherapy.

Sociological Studies

Utilization of urban treatment facilities by patients on short-course Chemotherapy and their households.

Utilization of treatment facilities by TB patients initiated on treatment by LWTD&TC and their families.

These two sociological studies are planned to understand the household morbidity during a reference period and action taken, besides the history of chest symptoms and action taken.

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BOOKS

I. CANCER MORBIDITY

Cancer Morbidity and Causes of Death Among Danish Brewery /WORKERS/ by O.M. Jensen, Lyon, International Agency for Research on Cancer, 1980. 145 pages (IARC Non-Serial Publication). Price Sw.fr. 45.-, US$ 25.-. Distributed for IARC by the World Health Organization.

The consumption of alcoholic beverages increases the risk of a number of malignant and non-malignant diseases. The International Agency for Research on Cancer has for several years carried out studies of the health hazards associated with alcohol. This publication reports on the risk of cancer and of deaths from a variety of causes among 14 300 male brewery workers with an above-average daily consumption of beer.

The first part of the book describes the background and methodology of the study. This is followed by seven chapters in which the risk of developing various cancers is evaluated, and an up-to-date review is given of the literature on the association between alcohol and cancer.

This study of the pattern of cancer and causes of death among heavy drinkers of beer who were not alcoholics concludes with a section dealing with the effects of alcohol and alcoholism related to other diseases than cancer.

II. CARCINOGENIC RISK

IARC monographs on the evaluation of the Carcinogenic Risk of Chemicals to Humans, Supplement 2: Long-term and Short-term Screening Assays for Carcinogens: A Critical Appraisal. Lyons, International Agency for Research on Cancer, 1980, 426 pages. Price: Sw.fr. 40.-, US $ 25.-. Distributed for IARC by the World Health Organization.

The International Agency for Research on Cancer, in collaboration with the Medizinische Hochschule of Hanover (Federal Republic of Germany) and the Commission of the European Communities convened in June 1979 in Hanover an ad hoc Working Group to review the conduct of long - and short-term carcinogenicity and related tests, in order to establish the basic requirements for carrying out such tests and for reporting the results. The meeting was attended by some 100 representatives from the major national and international institutions in 15 countries involved in the toxicological evaluation of environmental chemicals.

In order to ensure that the review of the tests took into account the most recent advances in chemical carcinogenesis, the first part of the meeting was devoted to the discussion of the molecular and cellular bases of carcinogenicity screening tests. The proceedings of this part of the meeting have already been published in the IARC Scientific publication Series. (Montesano, R., Bartsch, H. & Tomatis, L., eds (1980) Molecular and Cellular Aspects of Carcinogen Screening Tests. Lyons, International Agency for