A TUBERCULOSIS PROGRAMME FOR BIG CITIES

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Introduction

It is sometimes said that District Tuberculosis Programme (DTP) was planned mainly with rural India in mind. And that problems of metropolitan and other big cities with population 500,000 and more being different from those of district headquarters towns, that can be served quite effectively by District Tuberculosis Centres (DTC), it is imperative to have a different programme for big cities. Not to do that on ground of programme uniformity would be inexcusable (Panra, 1974).

These contentions need careful consideration despite the conceptual truism that two programmes, one for the urban and other for the rural people, embodying different quality of service would be sociologically repugnant. Besides, such an approach may be inconsistent with the accepted objectives and principles of our health planning. Even though the plea for having a separate programme for cities can easily be set aside, practical wisdom would demand that DTP be altered to become more acceptable to city tuberculosis workers, without disturbing unduly the structure of National Tuberculosis Programme (NTP).

Problems of Big Cities

Precisely, what are the problems that according to city tuberculosis workers deserve a different kind of programme for big cities?

Firstly, for well known historical reasons the available diagnosis and treatment facilities, though seldom BCG vaccination, in big cities are much better than in smaller cities, where those were actually put up after the DTP came into existence. Secondly, city people being educated and sophisticated desire up-to-date facilities more often than peasants. Thirdly, means of communication are better in big cities and fewer problems are likely to be met with in travelling to better equipped distant clinics. Fourthly, more often than not there are multiple institutions — tuberculosis clinics, sanatoria and hospitals — that offer specialised service to the needy but under different managements. The quality of service and the charges to be paid in such institutions vary, permitting the people a choice according to their fancy, preference, or capacity to pay. Unfortunately, it is also true pari passu that multiple independent institutions usually function without co-ordination, resulting in considerable waste of resources, not to speak of multiple registration and migration from one institution to another, without commensurate benefit either to patients or the service. Lastly, staff in independent institutions may not fully appreciate why they should alter their established ways of work for considerations that do not concern them directly.

Two difficulties more may also be mentioned. While any and every city institution might welcome an addition to its facilities, staff, or area of operation, hardly any is expected to agree to their reduction or regulation for the sake of better use of the resources or co-ordination. Herein lies a barrier. Past attempts in this country at rationalisation and co-ordination (for example, better and more complete utilisation of the limited number of tuberculosis beds) have neither proved popular nor very successful. Secondly, there is apparently far keener interest in multiplying specialized institutions and expanding their sophisticated facilities than, say, in extending the tuberculosis programme to entire population by utilising whatever facilities are available in general health institutions. The reasons for this lack of identity between the general and specialised services are not far to seek. The contention that health personnel do not take as much interest in tuberculosis as the tuberculosis workers do, is true to an extent. This is neither unexpected nor sufficient reason to exclude general health institutions from the purview of the tuberculosis programme in big cities. The incongruity only lies in the admission that tuberculosis these days is being diagnosed and treated by general practitioners, especially in big cities, and what is needed is a mechanism that they do so correctly. Conceptually, the National Tuberculosis Programme also is integrated with the general health services (Nagpaul, 1967).

A tuberculosis programme for big cities might accept all the mentioned difficulties, to enlist the co-operation of city tuberculosis workers. Nevertheless evidence is slowly accumulating that some of the difficulties at least are not true. For example, it is not infrequent that a few of the specialised city institutions have even less facilities than those in a DTC. City folks may not be all that sophisticated and choosy or conveyance all that convenient, as is often made out. Even in a big city (Nagpaul et al, 1970. Gothi et al, 1970), a sizeable proportion of
tuberculosis patients may contact a general health institution and be treated there first. And, similar to rural dispensaries (Rangana et al, 1968) a majority of patients attending a city tuberculosis clinic live within four walking miles, despite the good communications. In fact, the observed behaviour of urban compared with rural patients in respect of distance of home from clinic, number and duration of symptoms hardly suggests any intrinsic difference between the two.

In addition to formulating a programme that meets with the mentioned problems of big cities, one must keep in mind and provide for (i) fuller utilisation of the available resource, (ii) a co-ordinated and standard way of work, (iii) an adequate and uninterrupted supply of the essentials e.g., anti-tuberculosis drugs, BCG vaccine, X-ray films, etc., (iv) regular supervision, as well as (v) periodic assessment.

It is the contention of this paper that a city tuberculosis programme (CTP) which meets with most of the mentioned difficulties and is rational at the same time, has to depend upon the principles underlying the DTP. It need not be called a separate programme. In other words, a tuberculosis programme for big cities and DTP are not mutually exclusive. The common belief that DTP represents only the minimum that is suitable only for poor countries of areas where no facilities exist is erroneous. The impression appears to have been caused by the DTP having been first applied to vast rural areas where no facilities to diagnose and treat tuberculosis existed (Nagpaul, 1967), without considering the basic principles underlying the programme.

Principles Underlying DTP

The following DTP principles should dispel the fairly common impression that their application to big cities would mean (i) poor use of the existing specialised facilities for the sake of programme uniformity and (ii) disintegration of the specialised services since DTP is to be integrated with general health services.

1. Regionalisation

It implies, (i) the service is offered systematically to all living in a clearly demarcated area who are eligible for it (B2, C1), (ii) as the ultimate responsibility of a single authority (City Tuberculosis Officer, A3) and not of multiple uncoordinated agencies/institutions, (iii) in a multilevel arrangement so that the comparatively less patients needing more sophisticated care are referred to a fewer specialised though distant centres (Cl, C) and (iv) in a manner that includes both curative and preventive measures offered as a well—organised and coordinated service.

The operational feasibility and value of referring patients from one health institution to another has yet to be scientifically studied and evaluated. Nevertheless referral forms an important element of the regionalisation concept. As regards the rather large number of those with chest symptoms at general health institutions who are smear negative, referral to the area tuberculosis centre is advisable only after repeated sputum examination an even selection on the basis of clinical judgement (C1).

2. Sociological Basis.

A programme is to benefit the people and, not the people a programme. One of the primary aims of the programme has to be satisfaction of the felt needs of the people (suffering), as reflected by ailment(s) for which they seek assistance, at the kind of health institutions and the manner thereof. Therefore, case-finding among asymptomatics is not done (C4) and general as well as specialised health institutions form a part of the service network (B1). The observed behaviour of patients during diagnosis and while on treatment is given more importance than some of the technical considerations kept foremost by specialists.

3. Epidemiological Return

Alleviation of suffering is sought in a way that holds a reasonably good promise of epidemiological impact. Case-finding as well as treatment are organised on a wide enough scale and to a degree that could cut transmission of infection sufficiently well, thus preventing tuberculosis. Therefore, top priority is given to the sputum positives, and among them to those positive on smear compared with others positive only on culture or abacillary patients (C5). However, abacillary patients are not neglected. Even though they are more often irregular in their drug intake on account of less acute or no symptoms. The popular tendency to accord abacillary patients equal or higher priority to prevent their break — down — so called ‘early treatment’ — is not based on controlled scientific studies.

4. Optimal Use of Resources

Programme expansion and efficiency demand an optimal use of the available resources. At least
there should be no obvious wastage. Men, money and materials needed for community-wide disease control programmes are limited in all the countries; only the extent of the limitation varies. Following at any cost, what some other country might have attempted or attempting some technically perfect programme only in selected limited areas, such as metropolitan cities, has hardly any practical meaning in so far as the overall control of tuberculosis is concerned.

Above all and in addition to the above basic principles, a city tuberculosis programme must constitute a part of the wider whole i.e., National Tuberculosis Programme. Therefore, DTP and CTP have got to be similar in the essentials. Moreover, CTP should be implemented only when faced with the problems of big cities and not just because a population is 500,000 or is expected to reach that figure in the near future. Besides, it is desirable to tailor each CTP to the distinctive administrative, operational and social conditions of each big city, resulting in several essentially same but apparently different CTPs, in the same NTP.

**City Tuberculosis Programme**

Following could be the outline of a CTP;

**A. Organisation**

1. At first a Central Control Agency (CCA) is set up by the Government, being the authority responsible for NTP and best suited to assist and bring about co-ordination among health institutions. Essentially its composition is the government representative, heads of all tuberculosis institutions in the city, and nominees of municipal corporation, ESIS, IMA, tuberculosis association, etc. Alternatively, heads of all tuberculosis institutions in a big city together may constitute the CCA and resume all its powers as well as responsibilities, with the approval of the Government. If membership is unwieldy, the CCA may appoint a sub-committee to recommend on technical matters.

2. The CCA (i) co-opts heads of all the bigger general health institutions, (ii) decides on the essential procedures of work (technical as well as administrative) in the form of a written guide (A 5), (iii) appoints the “CTO” (A 3) or selects a “leader unit” to undertake all the duties and responsibilities, (iv) prepares the budget and secures necessary financial grants (A 8), (v) enlists all round co-operation to ensure the success of CTP(A9, D 3-4). No specialised institution may normally have the option to stand out of CTP. Selection however is exercised in respect of general health institutions (B 1). In actual practice the role of CCA is not expected to be easy; government’s initiative alone — in setting up the CCA — may not be sufficient. Persons eager to work out a trend — setting role in big cities and having influence among health workers are more apt to succeed.

3. The CCA functions through a City Tuberculosis Officer (CTO) and his staff, comprising one or two tuberculosis control teams (Nagpaul, 1972), a few statistical and some secretarial staff. The CTO either has a separate entity and office (A 2) or one of the specially suitable specialised institutions is selected as the “leader unit” to function as CTO with the help of its own staff and tuberculosis control teams enabling both the functions to be performed economically.

4. The main functions of CTO are planning (B1-2), implementation of CTP to cover the entire population (B3-9), training staff of general health institutions, supply of drugs, BCG vaccine, X-ray films, stains, etc (B11), repair and maintenance of equipment (B11), co-ordination, recording and reporting (C13) and programme supervision (D 3). Being responsible for programme’s success, the CTO is answerable for the control of tuberculosis in the city. Accordingly, a senior and influential person is appointed as CTO and sufficient powers of the CCA are delegated to him (A 2). He would already have undergone DTP training and gained sufficient experience in the NTP.

5. The CTO prepares and faithfully follows a detailed manual approved by the CCA on how CTP is to function. The advantages to be derived from participating in CTP, the obligations, and the detailed day-to-day work are set forth clearly in the manual for guidance of all the participating health institutions. The CTP manual broadly follows the NTP manuals, with changes considered necessary for city conditions.

6. A city Tuberculosis Case-index and a central procurement, supply and equipment repair organisation are set up in the office of the CTO to support all CTP functions (B 10, 11).

7. The “population” to be covered by CTP is not only that residing in the city but that in the adjacent periphery as well, for whom the city is the socio-cultural centre.

8. The CTO operates his own budget. The bulk of it is meant for supplies to the participating health institutions, a part for the extra staff
posted at some area tuberculosis centres (B 5), office expenses, and some for equipment that may have to be supplied to some institutions (B 5).

9. Administration of the participating institutions is maintained inviolate; only functional changes are permissible. The relationship between participating institutions — general as well as specialised — and between institutions and CTO is that of mutual co-operation.

10. Normally the CTO deals directly with specialised institutions only, which in turn work with the area general health institutions. However, no hard and fast lines need be drawn and CCA is competent to deal with the problems of mutual relations. Private practitioners may expect assistance from CTP in diagnosis and treatment. In return they send periodic reports to the area tuberculosis centres (B 3, C 13).

11. The CTO co-ordinates fully with the programme directorate at the state and national levels. Regular reports are sent for inclusion in NTP reports; besides periodic special reports are published separately on the working of CTP. Programme supervision and assessment are done in accordance with the national pattern (D 3).

12. If a big city also is headquarters of a district with a large rural component, then the CTP and DTP patterns are harmonised: one of the area tuberculosis centres functions as the DTC (with a DTO and tuberculosis control team for touring the rural area) but the case-index, for the city and the rural area, is one and is maintained in CTO’s office.

13. If a State’s STC is located in a big city (D 1), the CCA considers the possibility of either making it the leader unit of CTP (A 2) or delegating to it the CTO’s responsibilities with regard to training and the repair of equipment.

B. General Plan of Action

1. The CTO at first undertakes a general survey of all the health institutions in the city. Their staff strength, facilities: work loads, budgets, etc. are noted down. Such of the general institutions as are completely unsuitable for undertaking CTP activities are excluded. Others are listed area wise (B 2) for inclusion in CTP. None of the specialised institutions are excluded.

2. The population (A 7) is divided into “areas”, equal to the number of tuberculosis institutions (B 1). The size and population allotted to each area depend upon location, staff, facilities, etc. of the specialised institutions and the number and kind of general institutions around them. Areas need not be equal in size or population.

3. Tuberculosis institutions are then developed into “area tuberculosis centres”, one each for its respective area (B 5). While opening of new tuberculosis centres need not be ruled out, multiplying them may not be the best way to cover the population with the programme. Instead, adding fewer crucial staff at the existing well developed centres, and arranging transportation for them, may serve the need better, and also save some scarce resources.

Development into area tuberculosis centres involves (i) starting of clinic service from tuberculosis hospitals and sanatoria, (ii) adding staff and facilities to existing clinics and (iii) improving functions including records and reporting.

Area tuberculosis centre are primarily specialised service centres. Though their staff are well trained, they are likely to be too busy for undertaking planning, programme implementation, training and supervision, which are reserved for CTO (B 5 to 9). Besides service, they act as referral centres for the area general health institution, assisting and guiding them if necessary, and they collect and collate their reports for submission to the CTO besides defaulter actions.

4. The CTO may constitute a technical working committee comprising heads of all the area tuberculosis centres to consider and advise on the day-to-day problems of CTP.

5. The CTO ensures that each area tuberculosis centre at least has the facilities and staff (except BCG team) expected of a DTC. The well trained staff do not however function as they do under DTP but according to the CTP manual (A 5). And each general health institution participating in CTP has the facilities envisaged for peripheral health institutions under DTP, to ensure a kind of uniformity in respect of minimum facilities and standards of work. The onus for providing some facilities over and above the stated minimum is entirely that of the institutions concerned. The CTO does not provide any resources for the latter.

While the area tuberculosis centres (not general health institutions) that do not satisfy the stated minimum are developed further by means of equipment, staff etc, the well developed ones are put to better use by allocating them bigger areas and responsibilities, over and above the
normal to render service to larger sections of the population (B 3).

6. General health institutions are an integral part of the institutional network that provides service under the CTP. In each area, general institutions are assisted and guided in tuberculosis work by the area tuberculosis centre (B 3). The initiative for planning, setting up the organisation for tuberculosis work and programme implementation however comes from the CTO who has one or two tuberculosis control teams under him for the purpose.

7. General health institutions usually face some problems of their own for participating in CTP. While the broad issues are discussed and decided by the CCA, with heads of general institutions as co-opted members (A 2), the day-to-day problems are solved through mutual consultation between the institution concerned and the area tuberculosis centre; the CTO assists them as and when necessary.

8. Generally speaking, institutions are free to devise their own records. At the same time it is imperative that information necessary for the common reporting to CTO (C 13) is available in the records. In fact, the links that connect the network that is CTP are (i) uniform common reporting (ii) one tuberculosis case-index and (iii) a central procurement and supply organisation, all under the CTO. When institutions are revising their records to implement CTP (C 13), it is well to remember the advantages of having the same or similar records in all the health institutions.

9. A single authority following a uniform method of supervision, coupled with correctly maintained common records and reports go a long way to ensure high standards of work. Periodic supervision is exercised by CTO and his tuberculosis control teams (D 3). Assessment is undertaken through the programme directorate at the state and national levels (D 3).

10. The CTO is responsible for setting up and maintaining the city tuberculosis case-index (a live one if possible). It is not necessary to have a separate system of notifications to feed it; routine monthly reports from area tuberculosis centres should be adequate to provide the names of all the newly diagnosed patients and treatment information on the old ones (B 3).

11. The setting up of a central supply and equipment repair organisation is made possible by generous grants from the government and full support from the programme directorate (ensuring assistance from international agencies, wherever necessary). Through wise planning and advance procurement actions, it should be possible for the CTO to ensure that no institution is deprived of adequate supplies of BCG vaccine, drugs for sputum positive patients at least stains, cards and forms etc. For repair and maintenance of equipment, fully qualified technical hands and spare parts are necessary; STCs are already expected to have them (D 1).

12. A periodic review of CTP and discussion of the unresolved problems of mutual relationships and co-ordination by the CCA is arranged by the CCO on the basis of written reports received from area tuberculosis centres. Its periodicity depends on the needs but it should be yearly in any case. The meeting of technical committees (A 1, B 4) are more frequent.

C. Technical Plan

Case-finding

The imperative need for doing sputum examination carefully and repeatedly cannot be stressed more than it deserves.

1. Dispensaries and small general health institutions with daily new outpatients attendance of 50 and more offer only sputum smear examination to all who among them have chest symptoms, specially cough of more than two weeks (so called “symptomatics”). Still smaller institutions prepare sputum slides for examination at the nearest institution equipped with a microscope.

Symptomatics who are sputum smear negative on repeated examination are referred to the area tuberculosis centre for chest X-ray preferably after selection based on history of illness and clinical examination.

2. Large general health institutions already equipped with X-ray machines (not fluoroscopy) offer chest X-ray to their symptomatics, invariably followed by sputum microscopy to those with suggestive shadows in their skiagrams. While installation of photo-fluorographic cameras in institutions with daily chest X-ray load of 20 and more is welcome, this need not be arranged by CTO under the CTP.

Occasionally patients themselves, but normally X-ray films of patients where diagnosis is not clear at general health institutions, are referred for opinion to the area tuberculosis centre.
3. All area tuberculosis centres offer photo-fluorography to outpatients who attend either on own initiative or on referral, without exercising any selection, followed by sputum microscopy to the eligibles. Centres that already have culture facilities could offer culture to those negative on smear but with suggestive X-ray shadows. Selected patients could also be kept under observation (with or without symptomatic treatment) till diagnosis is established. There need not be uniformity among tuberculosis centres in this respect.

4. Examination of population or selected groups of asymptomatics at present is outside the scope of CTP. For such activities resources are not given by CTO. Such an activity, if carried out for any reason must be excluded from case-finding reports in order to avoid confusion, but cases put on treatment are indexed and included in the reports.

Opinion on the referred patients must be sent direct to the referring institution/private practitioner: area tuberculosis centres must be careful on this point in the interest of mutual co-operation and harmonious relationship.

Case-Holding

The justification for case-finding is the ability to hold the discovered cases on proper treatment.

5. Sputum positive cases receive priority with regard to the choice of drugs and drug regimens, defaulter retrieval and prescribed period of treatment. It is imperative that their needs are ensured first before allocating resources to about four times the number of abacillary patients likely to be diagnosed with wide spread X-ray facilities.

6. The choice of drugs is restricted to primary antituberculosis drugs. And drug regimens to the standard regimens under NTP.

7. Domiciliary treatment is the sheet anchor of patient management: The comparatively small number of patients who eventually would need institutional care are systematically filtered out by the CTP network and referred to the allotted tuberculosis hospital (s) for surgery and or treatment with second line drugs (C 8, D 2).

8. All CTP institutions offer standard domiciliary treatment, free to all (C 6) this is likely to discourage patients to migrate from one centre to another. Providing free institutional treatment is outside CTO’s purview. Government may, however, reserve some beds for poor patients recommended by CTP.

Some specialised institutions already have peripatetic or satellite treatment centres in different parts of the city. These have little meaning or advantage when most general health institutions from part of the CTP network.

9. Defaulter retrieval under CTP is best restricted to infectious patients and is two tiered. General health institutions normally write post cards for defaulter actions and may use their general home visiting staff for defaulter retrieval. Names and addresses of those not retrieved are conveyed to the area tuberculosis centre for proper home visiting and remotivation.

10. Follow-up of patients is on an agreed and uniform pattern (CCA responsibility): sputum smear examination every six months is the basic minimum, a yearly X-ray of chest when possible and sputum culture quite optional.

BCG Vaccination

11. All area tuberculosis centres offer BCG vaccination to the public in general as well as children among their routine out patients attendance.

The staff of all maternity hospitals/paediatric departments/outpatients and well-baby clinics are trained by CTO, for offering BCG vaccination as a routine service to the people. The offered vaccination is primary and direct preferably simultaneously with small pox vaccination. Care is taken that a sufficient number of staff (nurses, midwives, etc) are trained in each such institution to allow for rotation of duty, leave of absence etc.

12. The CTC with co-operation of area tuberculosis centres arranges Mass BCG Vaccination among the population according to the accepted policy and practice under NTP.

Records and Reports

13. General health institutions report to the area tuberculosis centre which in turn reports to the CTO (B 3).

Since the CTP forms a part of NTP, the basic information structure has to be uniform (B 8).

The area tuberculosis centres modify their existing records to accommodate the additional information needed for national reporting. In so doing they devise their own records in a way that their own and the programme needs are met. They advise general health institutions also to
revise their existing records to permit uniform reporting.

Records and reports, especially from general health institutions, must be simple and minimum. The CTO must be associated with the revision of existing records; in doing so he also looks to the needs of supervision to be done by him.

CTO reports to the programme directorate, at the state and national levels as per the standard report forms, from the information in the city tuberculosis case-index.

14. The city tuberculosis case-index is maintained on the basis of reports received from various area tuberculosis centres: the procedure and form of reporting and how duplication of registration is avoided is decided by the CTO. It is the source of reports to the programme directorate. At present the frequency of reporting to the programme directorate is quarterly but reporting to the CTO from CTP must remain monthly. During supervision the CTO checks the correctness of the reports received by him.

D. Miscellaneous

1. In some big cities are located the so called “TB Demonstration and Training Centres”. Some of them may already be functioning as State Tuberculosis Centres (STC) that perform honorous functions under the NTP: (i) they organise model DTPs, for demonstrating the programme to health workers and to train medical students, (ii) assess DTPs in the State, which will now include CTPs also, excluding the one where that STC is the leader unit, (iii) offer referral culture laboratory service, (iv) undertake equipment repair and maintenance, (v) offer consultation services, and (vi) do research.

Selecting an STC as the “leader unit” for CTP and delegating CTO’s responsibilities to it (A 3) offers a number of advantages that have to be weighed by the CCA.

2. It is seldom that there is need to increase the number of TB beds in big cities to promote CTP. Attempts often made to (i) attach a few beds to each area tuberculosis centre or (ii) increase TB beds to arrange better distribution of the beds in different parts of the city or (iii) add beds in existing sanatoria to satisfy the apparent demand for hospitalization need to be discouraged since that objective can be met through optimal and more organised use of the existing beds. The CCA could recommend (i) a more strict admission and discharge policy, (ii) admissions and discharges decided by a Committee comprising heads of all area tuberculosis centres, offering domiciliary treatment, tuberculosis sanatoria, offering institutional treatment and the CTO (B 4), (iii) and more effective arrangements for post-discharge care of the patients under the CTP. It should not be difficult to meet the institutional treatment needs of the big city and the surrounding districts with existing beds but admissions from outside CTP area need not necessarily be regulated by CCA policy.

3. Supervision is done by CTO with the help of tuberculosis control teams under him. It should be possible, with slight modifications if necessary, to use the standard supervision forms and the frequency as well as work patterns obtaining under the NTP:

   For assessment, the CTO seeks the co-operation and participation of the programme directorate at the state and national levels.

   Corrective actions arising out of supervision and assessment are taken by the CTO. Supervision and assessment reports are also discussed by the CCA, or the technical groups (A 1, B 4).

4. If a big city has active non-official voluntary organisation(s), its co-operation is sought for (i) extending financial assistance to the poor and needy patients (ii) re-motivation of defaulting patients where defaulter actions have failed, (iii) community health education, (iv) help during mass BCG vaccination of population groups and (v) contribution towards crucial supplies such as anti-microbials or spinal braces etc. If there are technical institutions run by the voluntary agencies, these would already be a part of the CTP network.

5. If there are medical college(s)/nursing school(s) in a big city, it is obligatory on the part of CTO to see that students in addition to training in tuberculosis hospitals/sanatoria receive training in the working of CTP/NTP and appreciate the respective roles of specialised used and general health institutions.

6. Special training courses for general practitioners (through the local IMA), seminars and conferences of tuberculosis workers are also arranged by the CTO.

Summary

A City Tuberculosis Programme (CTP) has been suggested that meets with most of the
existing conditions in our big cities and is in accord with the principles underlying District Tuberculosis Programme and National Tuberculosis Programme.

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REFERENCES


