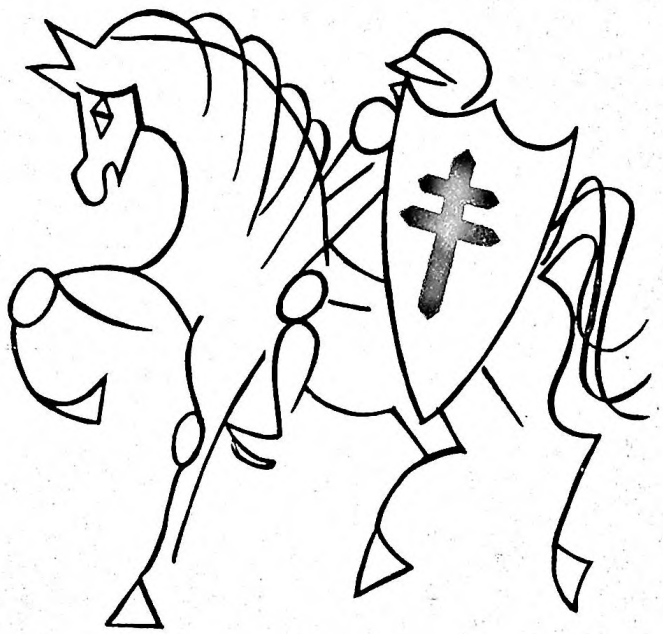
HEALTH FOR THE MILLIONS

Vol. X No. 2 A Bimonthly of the Voluntary Health Association of India APRIL 1984



At the time of the crusades, Godefory de Bouillon, Duke of Lorraine, had placed the Double Red Cross on his stan-

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This issue of HfM was put together and produced by Augustine Veliath (Editor), Aspi B. Mistry, Mira Shiva, Chandra Kannapiran, Gloria David, Padam Khanna, P.T. Thomas, L.K. Murthy and P. George.

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In this issue:

(*Continued from Cover*)
dard when he took possession of Jerusalem in 1099, and, after his return to France, it became the emblem of the House of Lorraine.

The Double Red Cross was considered singularly appropriate as the rallying sign for the crusade against the most deadly scourge—Tuberculosis—which afflicts mankind. Proposal for its adoption as the International Emblem of the campaign against tuberculosis was moved by Dr. Sersiron, on October 23, 1902, at the International Tuberculosis Conference in Berlin. The proposition was adopted unanimously.

The Council of the International Union Against Tuberculosis, Paris, in September, 1928, decided that National Associations which are members of the Union should adopt this emblem with a recommendation to the effect that it be legally registered in order to prevent its use for commercial purposes.

In 1957, the Tuberculosis Association of India requested the Ministry of Commerce and Industry, Government of India, to patent the Double-Barred Cross in favour of this Association and against fraudulent use of this emblem by others. The Central Government by their Notification No. 4 (3)-TMP/57, dated 13th July, 1959, included in the section of the Emblems and Names, the Double-Barred Cross as the emblem of the Tuberculosis Association of India.

The TB Situation in India

"If the significance of a disease is measured by the number of victims it claims, then all other diseases ... must rank far behind tuberculosis. Statistics show that half of mankind dies from tuberculosis and that, when only the middle, productive age groups are considered, it carries off one-third and more. The public health services thus have reason enough to devote their attention to so deadly a disease ... It therefore seemed a pressing duty, above all else, to institute detailed investigations into tuberculosis" (Koch, 1882)

When Robert Koch was writing these words more than a 100 years ago, tuberculosis had already started declining in western countries as a result of the improvement in the standard of living. Yet very recently the World Health Organisation was moved to declare that "the world is experiencing an epidemic of tuberculosis. It is the most important specific communicable disease in the world as a whole....." It becomes abundantly clear that the burden of this epidemic is being borne most by the Third World, where there has been no comparable improvement in the standard of living and where the number of TB cases is increasing yearly. In India it has the status of killer number one, in the hierarchy of deadly diseases, "the Captain of all these Men of Death".

In this country, the situation is particularly acute. It has been reported that almost 12 million people suffer from TB, of whom nearly 6 lakhs die annually. By the time you have finished reading this editorial, somewhere in India, 2 more persons would have died of TB. In the time it takes to read this special issue on TB, nearly 100 persons would have died of the disease. Yet only ten of these deaths would have been identified as being caused by tuberculosis.

The Government's own estimate is that 10 million are suffering from this disease, but barely 10 lakhs have been identified.

If case-finding and chemotherapy (See Mona Daswani, "A Profile of Tuberculosis, Page 10) are to form the basis of the strategy against tuberculosis, much more commitment is required in terms of resources, both material and human. While the Sixth Plan outlay, for the National Tuberculosis Programme is Rs. 7 crores, it has been estimated that nearly Rs. 55 crores is actually needed if the programme is to be really effective.

Notwithstanding the fact that TB control is now part of the 20-point Programme, "every time demands for increased funds are made, the government trots out its old excuse that finances are hard to come by". Writing in the Sunday Observer (11-17 March 1984) Nikhil Lakshman reports further that this is" a defense deflated by the estimates committee's findings that, except for 1977-'78, the actual amount spent on health has always been half the proposed outlay. In 1981-'82, for instance, the sum sanctioned was Rs. 216.79 crores, while the actual amount spent was only Rs. 100.85 crores. Surely a part could go to fight TB .... Surprisingly, in contrast, the Bombay Municipal Corporation (BMC) has undertaken its TB programme on a war-footing. The first organization in India to introduce short term chemotherapy in its campaign, the BMC has set aside Rs. one crore for these drugs, organised 90 diagnostic cum treatment centres and also started making rifampicin for the city's TB patients".

We have a first hand account of one aspect of this programme from Indira Kotval in Bombay ("A Tuberculosis Control Programme" Page 26) in which she describes her experience in a voluntary organisation working with the BMC.

In sharp contrast, in "Health 'Care' vs The Struggle for Life" (Page 16), Mira Sadgopal from Kishore Bharati, in Hoshangabad, describes vividly, the problems in the field, in the rural areas, where the patient is literally at the mercy of the medical establishment. J.S. Majumdar (Production of Anti-TB Drugs, Page 31) has dealt with the dynamics and politics of anti-TB drug production and the role of the

multinational companies.

While this is planned to be a special issue on Tuberculosis, we do not in any way see it as the final word on the subject. In this first part we have laid more emphasis on problems in the field and concrete experiences of individuals and groups rather than on the medical aspects of TB. If the socio-economic and political aspects seem underlined, this is a conscious effort to make this issue into a "curtain-raiser" for a more extensive and in-depth debate, that we hope to follow up in subsequent issues with the co-operation and enthusiasm of our readers. The response to the diarrhoea issue has emboldened us to introduce a "Readers Forum" and we hope that this will be a continuing feature. We invite not only feedback on this issue and specifically on the script for "Better Care in T.B." (See Page 36) but also other articles and news items both on TB as well as on other health issues.

-Editors.

Readers' Forum

Dear Averthanus, Mira and Augustine,

Health for the Millions, Volume 9, Nos. 5-6. Diarrhoeal Disease

Congratulations on a tremendous piece of work. You have really searched the literature for practical and relevant aspects of how to manage and control this problem. If I can make any criticism, it is perhaps that you have tried to include too much in one issue so that some people may be a little daunted about where to begin. As an old friend of VHAI, and of each of you individually, I hope that you will permit me to make a few comments about some of the articles.

1. On page 3 you start with a definition of diarrhoea which is very numerical. The normal stool pattern has such a wide range of variation that I always think a practical definition is that diarrhoea is a change from the normal pattern, to stools which are more liquid, or different in consistency and appearance etc. to give the mother concern. For epidemiological studies you may have to adopt a particular number as a cut off point in defining diarrhoea.

2. On page 17 when discussing the problem of vomiting during administration of oral rehydration I believe that you should mention the use of a naso-gastric tube before recommending the need for intravenous fluids.

3. On pages 20 and 21 under the heading antimicrobial agents I felt that the lowest three asteriks do not seem to follow logically from what you have said above and could cause confusion. At the very bottom of the page you end with a sentence "Below we give some of the commonly misused antibiotics" and there then follows immediately a table of the only antibiotics recommended by WHO! What you might have mentioned in the section on antibiotic prescribing is the danger of resistant organisms from R factors and problems arising from inadequate dosage.

While on the subject of antidiarrhoeal agents, it might have been useful to give the references of two trials which showed that kaolin was quite ineffective. I will give these below.

Recently I had reason to look through the literature on the antimotility drugs including the opium analogues Diphenoxylate and Loperamide. They have both been shown to be remarkably effective in rats, but all the clinical studies so far are disappointing. More-

over, they are potentially dangerous in children because of their central sedative effects.

4. On pages 28 and 29 I was very interested to see the relative costs and the large number of oral rehydration packets on the market. At first I was confused by the statement that a packet of Electral cost 7 NP!

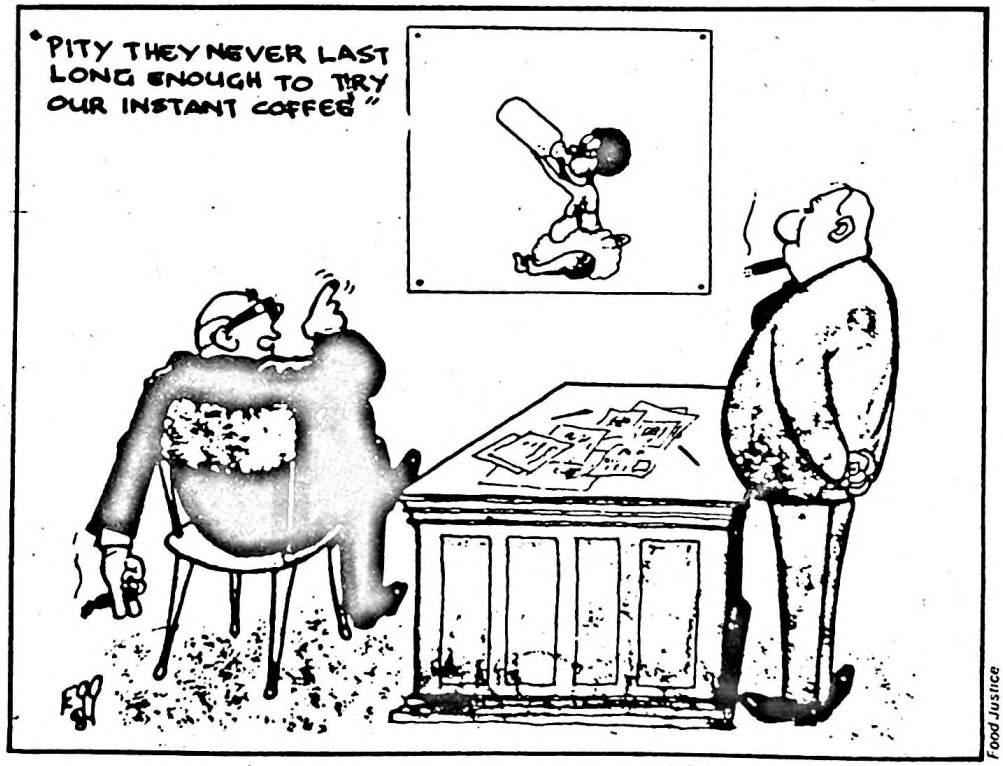
5. On page 38 you describe alternative medicines for diarrhoea. I have no doubt that some of these may be valuable, but perhaps it should be pointed out that they should also be subjected to clinical trials as applied to kaolin and Diphenoxylate. The symptom pictures overlap confusingly. In some thirst and sweating, indicating dehydration are not followed by any recommendation about giving extra fluids, which we would consider important whatever medicine is being administered. Symptom group G appears to be steatorhoea and H dysentry or possibly giardia infection.

6. On page 42 you describe traditional remedies including simple fluids. It is now known that rice congee mixed with an appropriate amount of salt is excellent for rehydration.

7. On page 50 you deal with certain controversies. There are of course philosophical differences between a home and pharmacy made fluid. However, the most important point is that for each degree of severity there may be an appropriate treatment. In extreme cases intravenous fluid with precise replacement of lost salts and pH correction is essential, while in the mildest cases drinks of water can be useful.

8. At the bottom of page 52 you state "two-thirds of all illnesses in India are related to water-borne disease". I do not believe this is true in view of the numbers of respiratory infections and cases of malaria.

9. I was happy to see on pages 60 and 61 the broad responsibilities which VHAI feels it has in diarrhoea care. It may be necessary to focus on a few of these initially. In recent months I have been particularly aware of the problem of conflicting messages about the right way to prepare oral rehydration fluids and the consequent confusion in both



Courtesy : IOCU Action Pack.

health workers and the lay public. I believe there is a real need to find what is the most appropriate message on a national or regional basis and campaign for that message. Otherwise many different methods of mixing salt and sugar may result in wrong formulation of fluids which may be ineffective or harmful. This can seriously damage and undermine what is potentialy a valuable and life-saving treatment. To identify and propagate the most appropriate method is an important challenge.

With greetings and best wishes.

Yours sincerely,

William A.M. Cutting
Senior Lecturer in Child Health,
Dept. of Child Life and Health
University of Edinburgh

References:

Watkinson, M. (1982) A lack of therapeutic response to kaolin in acute childhood diarrhoea treated with glucose electrolyte solution. J. Tropical Paediatrics, 28. 306-307.

Alestig, K., Trollfors, B. And Stenqvist, K. (1979) Acute non-specific diarrhoea. Studies on the use of charcoal, kaolin-pectin and diphenoxylate. The Practitioner 222. 859-862.

We are very grateful to Dr. Cutting for his insight and comments. As there has been a tremendous demand for the Diarrhoea Issue of HFM, we are reprinting this issue in booklet form. Needless to say, almost all the suggestions and corrections mentioned above have been included - Editors.

Dear Sir,

This letter is with reference to your October-December 1983 special issue on diarrhoea and in particular to the section on making measuring spoons for preparing a "special drink". I hope that section has been printed just as a joke, becuase otherwise in the Indian context it is certainly appalling to realise that in the process of demystifying medicine, what has actually been achieved is only further mystification.

The entire concept of ORT has been to reach health care into the hands of the people, especially the deprived sections of society. The etiology of diarrhoea and its association with contaminated waters and thus with poverty has been established without doubt.

In this section, we assume that the people who we are taking the message of ORT to are poor enough not to possess a measuring spoon. And in the same breath, in the Indian context, that too, we expect them to have a tin, a pair of scissors, a pencil, a bottle cap, a glass, wood, a drilling machine and bolts and moreover the technology to measure in centimetres and to be able to drill into wood. Not to mention the fuel required to burn pieces of wood. A simple question could be asked - would it not be more economical just to possess a simple measuring spoon rather than all these exotic items and gadgets mentioned above? If the poor man had enough fuel to make a measuring spoon, his children would have had a much lesser chance of contracting diarrhoea and therefore needing ORT.

If the aim of propagating the ORT is to make people independent then it is necessary to be vigilant so that no further dependence is created on either the medical system or on any industrialist due to the prescription of a complicated and even unnecessary methodology. It would be much simpler to tell the woman to give her dehydrated child her down to earth "nimbu pani" and I can bet she will add just the right pinch of salt and the proper handful of sugar.

Sincerely,

Ms. Manisha Gupte Awasthi
Research Officer.
The Foundation For Research in Community Health

Dear Manisha,

Thank you for your letter. I truly appreciate the points raised by you.

I must make a few clarifications first. HFM is geared to 'Health Personnel' in the field.

I agree with you that most poor people

do not have spoons and therefore, it is all the more imperative that those involved in training health workers can help the health workers, produce for themselves standardized the measures. A health worker should be familiar with the differences of volumes of salt and sugar with pinches and scoops of different individuals. The need to standardize the measures to a safe limit is not mystifying ORT. Being involved in training of different levels of health personnel in the field, I realize the confusion and chaos that exists regarding measurements related to simple ORT.

If rehydration is started early enough, simple solution, weak tea, rice kanjee, any fluid will do. There is absolutely no need for measurements. Measurements are relevant only for moderate and severe dehydration and if health workers can share this in turn with mothers as they are doing in numerous community health programmes all over India, I really don't see any mystification.

The central page that you were so critical about is from David Werner's 'Helping Health Workers Learn'. These methods have been used in Latin America, and I really see no reason why a little bit of creativity and excitement cannot be added in the training programmes. Preparing these gadgets is a team building exercise in itself, for the trainers and the health workers. It is not at all necessary to do it, if it doesn't make sense.

If you read the chapter on Traditional ORS, where the rationale of rice kanjee etc, is given, you will realize that the purpose of this diarrhoea issue is not to mystify. Talking about 'nimbu pani', nimbu is not very easy to buy in all the villages, it costs anywhere up to 30 to 50 paise even where available.

Our objective is to get the hospitals who are VHAI members to accept the rationale of ORT and incorporate it even in the hospital situation. There is enough material for training of VHW's and lay people. There is very little for doctors and middle level workers in the field. This issue is to fulfill that need.

Another issue of HF/M had dealt with water and sanitation, therefore, that aspect was not dealt with here.

For those of us involved in health work in the field, it is painfully clear that most of the health problems have their roots in poverty. Neither ORT nor health care is the answer to that.

ORT alone can never be an answer to even diarrhoea care, but ensuring some change in diarrhoea management, in even 50% health institutions, is definitely not adding to mystification.

The creation of unnecessary dependence by well intentioned medical technologies is a very genuine fear Manisha, which I share with you.

I thank you very sincerely for your honest feed back.

With regards,

Yours sincerely,

Dr. Mira Shiva

Dear Sir,

Recently for the first time I came across your bimonthly publication 'Health for the Millions' (Vol. IX: No. 5-6).

Let me tell you it is simply excellent. It has made the matter of Paediatric diarrhoea management simple for me and I have also prepared some charts out of the issue to educate my patients.

I would request you to send me "Health for the Millions" regularly at my residential address.

Dr. Jayesn N. Jain, M.B.B.S.

Please send your feedback to:

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Health For The Millions
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MIRA SHIVA

TB: How much Do you Know?

(For the correct answers :See page 25)

1. How many diagnosed TB cases are there in India ?

   4 Million
   6 "
   8 "
   10 "

2. How many of them are infective, i.e. open cases?

   1 Million
   1.5 "
   2.5 "
   3.5 "

3. In India how many die of TB per year ?

   10 lakhs
   15 "
   30 "
   50 "

4. Incidence of TB per 1000 population is more common in

   Rural areas
   Urban areas
   Equal in Rural and Urban areas

5. What is the percentage of total TB cases in the rural areas ?

   20 %
   40 %
   60 %
   80 %

6. The incidence of TB is

   Increasing
   Decreasing
   Same

7. The number of TB cases is

   Increasing
   Decreasing

8. Under the National TB Control Programe diagnostic facilities and treatment are supposed to be offered

   Free
   On payment

9. Under the National TB Control Programme treatment is offered to

   Sputum positive cases only
   Suspect cases contacts

10. Treatment recommended is for

    12 months
    18 "
    20 "
    24 "

11. Short term anti-TB treatment is for

    6 months
    9 months
    12 months

12. The dose of INH recommedned is

    100 mg - 3 times a day
    300 mg as one dose daily

13. Which is the best diagnostic test for Tuberculosis?

    E S R
    Sputum for AFB
    Sputum culture
    X-Ray

14. Is Mantoux (P P D testing) recommended as part of the National TB Programme ?

    Yes
    No

15. Is B C G recommended ?

    Yes
    No

16. The incidence of TB started falling in UK in early 20th century because of

    Improved socio economic status
    Anti TB drugs
    Vaccination

17. The highest incidence of TB in the world is in India and highest in the community of

    Tribals
    Tibetans
    Katkaris

18. How many people does an infective TB case (not on treatment) infect in one year on an average ?

    2
    4
    8
    10

19. One out of how many cases of chronic cough is a case of TB ?

    20
    25
    30
    35

20. What kind of a problem is TB ?

    Physical
    Psychological
    Economical
    Social
    All

21. In a district of 5 lakhs population how many cases of TB can be expected to be found ?

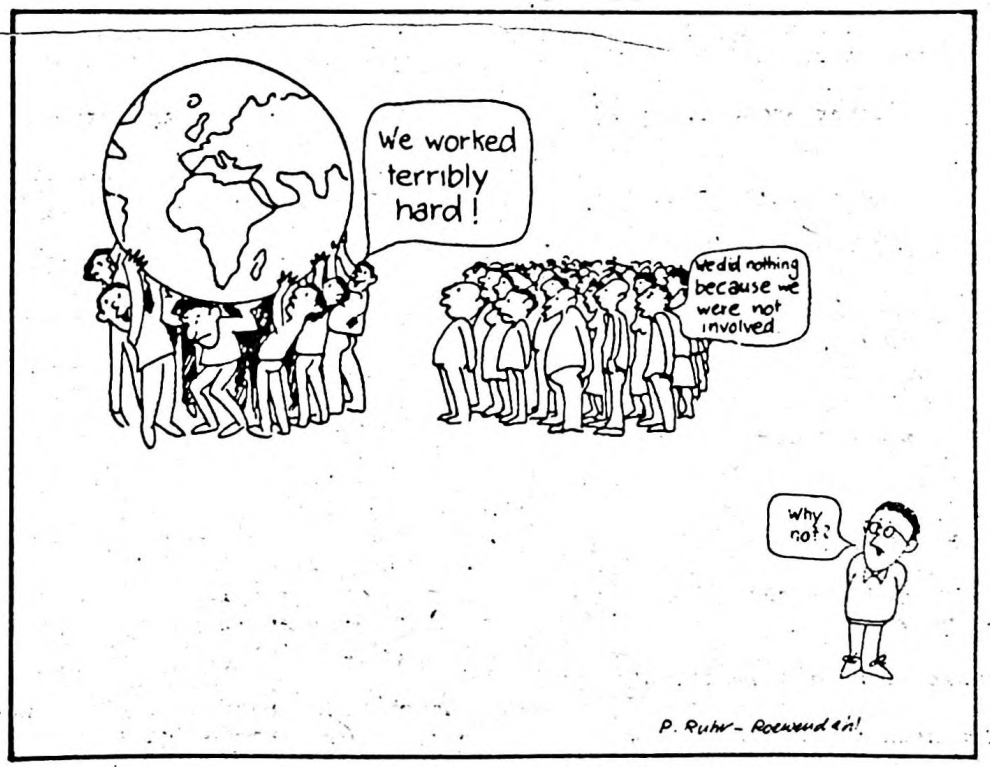
    100
    250
    500

22. The health budget as a percentage of the total budget in the First Five Year Plan (1951-56) was

    2.6 %
    3.0 %
    3.3 %

23. The health budget in the 6th Five Year Plan (1980-85) is

    1.2 %
    1.9 %
    2.0 %



Courtesy : IOCU Action Pack

24. The percentage of population being below the poverty line is

10 %
40 %
50 %
80 %

25. In a child, where would you most often expect to see lymph nodes enlarged by TB ?

In a child's neck
In the axilla
In the groin
Under the jaw

26. Which of these is true ?

All patients with TB are infectious

Patients are only infectious if live TB bacilli are leaving their bodies

27. A primary TB infection USUALLY causes

Severe symptoms
No symptoms
Mild symptoms

28. Which of these children is most likely to have TB ? The child who

has had mild fever and a cough for a week

has had tender swellings in his neck for 3 days

does not recover several weeks after whooping cough

has otitis media

has a chronic upper respiratory infection

29. TB presents as the child who

is not well and has had mild fever and loss of weight

has chronic abdominal swelling

has had a high fever for 4 days

passes blood in his stools.

30. Which of these children have MOST immunity To TB

Poonam who is newborn

Sita with marasmus

Gita (3 years) with a rising weight curve

Munni with kwashiokor

Buntu who is underweight and is recovering from measles

31. An adult with infectious TB is usually

Completely well

so ill that he has to stay in bed

Well enough to work

32. Which of these diseases is LEAST likely to cause difficulty when you are trying to diagnose TB ?

Malnutrition

Cerebral malaria

Chronic pyogenic lower respiratory infection following measles

Chronic urinary infection

Chronic pyogenic lower respiratory infection following whooping cough

33. A child who has been given BCG

Will not become ill with TB

Is less likely to become ill with TB than a child who has not been given BCG

34. BCG contains

Toxoids
Living organism
Dead organism
Antibiotics

35. Which of these is not used for preventing or treating TB ?

Thiacetazone

BCG
Penicillin
Isoniazid
PAS

36. Which of these is true ?

TB in children seldom presents as a cough with blood stained sputum

A different kind of TB organism infects children

TB is a more chronic disease in children

Children get TB meningitis less often than adults

Children infect one another whereas adults do not

37. Which of these children is most likely to have TB ?

Prabha (6 months) who has had a cough for 3 days with respirations of 80 per minutes

Usha (5 years) with chronic abdominal pain who has gained a kilo in the last six months

Asha (18 months) who is always coughing and wheezing and who has gained 3 Kg during the last nine months

Vidhya (2 years, 38.2 C)who has not been well for 4 weeks and who has lost two kilos in weight.

38. Harsha (3 years) had pneumonia four months ago. He was treated with penicillin and he recovered a little but he still had a cough and fever and was losing weight. He was given INH for 3 months and is now much better. Should he

Stop his INH

Go on with it for a year.

39. Which of these diseases kills children slowest ?

Cerebral malaria
Tuberculosis
Tetanus
Septicaemia
Diarrhoea with dehydration

40. Tara is 3 years old. His elder brother (21 years) is sputum positive. Tara himself has no symptoms. He should be -

given BCG and put on the special care register

told that there is no need to worry and sent home

given streptomycin, thiacetazone and isoniazid

given PAS (aminosalicylate) only

given streptomycin only

LIFE SKETCH

ROBERT KOCH was born on 11 December 1843, in Clausthal village in the state of Hanover in Germany. He qualified as a Doctor from Gottingen University in 1866. He set up a primitive laboratory in his own backyard from where he launched a memorable hunt for microbes. He succeeded in isolating and demonstrating the microbe and proved it to be the cause of TB in just one year. He called it the "Tubercle Bacillus".

Koch is known to have visited J.J. Hospital in Bombay and the Institute of Veterinary Research in Mukteswar (U.P.). In 1905 he was awarded the Nobel Prize in Medicine for his work on Tuberculosis. Koch died of a sudden death caused by cardiac arrest on 27 May 1910.

(From Swasth Hind, June 1982)

MONA DASWANI

A Profile of Tuberculosis

Tuberculosis has been known to man from ancient times; the earliest medical name was, "phthisis", derived from the Greek word literally meaning to waste away. In 1882, Robert Koch identified the cause of the disease to be the tubercle bacillus. Today we have all the weapons required for control of the disease:

- the BCG vaccination as a preventive measure
- X-rays and laboratory analysis to facilitate detection
- effective drugs against the bacillus.

However, TB continues to be a major health hazard in the developing world. In India alone there are an estimated 12-15 million people who suffer from TB, resulting in half a million deaths per years(2).

The main source of the infection is a person who has already contracted the disease. IT is transmitted when droplets containing the bacilli coughed into the air are inhaled by a healthy person(3). These droplets pass into the lung where the bacilli are able to multiply. Although the most commonly affected organ is the lung, the infection may also occur in the kidneys, bones, meninges or even be disseminated throughout the body. It is estimated that an individual who is a moderately infectious case is capable of infecting 10-12 other individuals within a period of one year(4). If such a case is not treated, the person will survive for about two years: during this time 20-25 healthy individuals face the risk of infection.

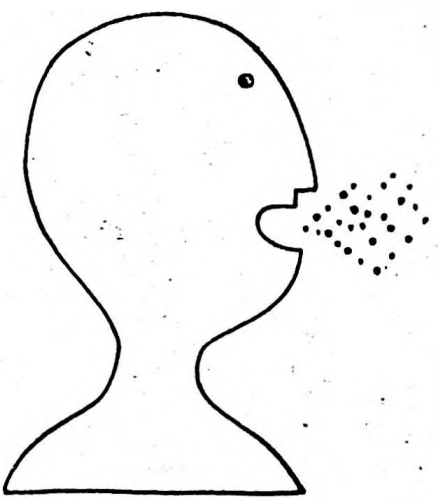
The leading clinical symptom is a persistent cough. This may be accompanied by fever, fatigue and loss of appetite. A complete clinical diagnosis of TB is done by:

- X-ray of the chest which will show a shadow, known as infiltration
- presence of bacteria in the sputum (distinguish between saliva and sputum, which is coughed up spontaneously from the lung in the morning)
- tuberculin or Mantoux test; if a person has a natural resistance they will show a positive reaction.

From the point of view of disease control at a national level, there are two fundamental issues to be considered : whether to choose a preventive measure such as mass immunisation; or detection of all infectious cases and treatment of these by chemotherapy. The pros and cons must be carefully analysed in the context of each particular disease.

Disease Control

The BCG vaccine against TB has been in use since 1921. However, the effectiveness is still a matter of countroversy. A recent study was conducted by the Indian Council



of Medical Research in Chingleput District, Tamil Nadu(5). Between 1968-71, 2 lakh persons above the age of one month were vaccinated. In the same area 80,000 people comprised the control non-vaccinated group. For the next 7 1/2 years there was a continuous monitoring of tne incidence of TB in the area base on tuberculin tests and sputum analysis. When the data was decoded, it was found that the number of TB cases was slightly higher in the adults who had been vaccinated. Therefore the vaccine was not effective as a preventive measure. However this evidence was not extrapolated to infants, and the vaccine is still useo.

Since the discovery of streptomycin there are a whole range of drugs effective against TB. The major draw-back of chemo-therapy is the long duration of treatment for 18-24 months. It is difficult to motivate the patients to take the drugs regularly. When treatment is not continuous there is the danger of the bacteria developing resistance to the drugs, causing additional problems. However today there are short-course drug regimens of 6-9 months that are highly effective, of low toxicity and well-tolerated(6).

Since the efficacy of the vaccine is questionable and the primary source is the infected population, it is now felt that chemotherapy is more effective than vaccination as a control measure(7). A study group set up jointly by the World Health Organisation and the International Union Against Tuberculosis in 1982 states that the most powerful weapon is a combination of case-finding and chemotherapy(8). The case-finding will locate the source and chemotherapy eliminate the overall risk of infection in the community.

Althogh the causative agent is a bacillus, it is now accepted that a combination of socio-economic factors serve to aggravate the problem. Undernutrition, poor hygiene, lack of water and persistent infections such as diarrrhoea decrease the level of natural resistance in an individual(9). The inadequate housing results in overcrowding and a greater degree of contact with infected persons increases the risk faced by healthy individuals(10).

It is also recognised that certain groups of people are more susceptible to the disease(11). Among these those who suffer from ailments of the lung as a result of overexposure to dust and other particles face a special risk. Infact, an evaluation of the control programmes in the country observed that TB is becoming a disease of the elderly males(12). This is interesting in that it serves to substantiate the evidence that the most vulnerable groups are those working in quarries, mines, textiles and other industries where the nature of the work has health hazards(13).

Occupational Hazards

In a small town in Madhya Pradesh, called Burhanpur, the incidence of TB is 150/1000, which is the highest in the country(14). This a premier handloom and

TUBERCULOSIS IS CURABLE

The Story of Wise Vithoba

A flash Card Series

by

VHAI

and

FRCH

...pg 13

Tuberculosis in Ancient Times

From the various skulls and other bones which have been recovered from different parts of the world, tuberculosis was found to be evident in Neolithic man. The Egyptians of antiquity made statuettes, engravings and paintings on stone and recorded some descriptions of consumptives. Their mummified bodies have revealed definite evidence of tuberculosis of bones and joints. Tuberculosis as was evident in mummies indicated that, as early as 5000 B.C., man suffered from it.

Hippocrates (460-377 B.C.) also devoted part of his attention to tuberculosis. He opined that attention to the tuberculosis patients was a waste of time and that they were a burden to the state. In the famous library of Leipzig, there is a folio which contains information that Jesus suffered from this condition.

During the dark ages, all knowledge of disease was lost. Touching the king's feet for the cure of King's Evil (as tuberculosis diseases were then known) was prevalent during the 11th and 12th centuries in England and elsewhere. In Britain, Edward the Confessor (AD 1004 - 1066) exercised the right of touching the tuberculosis patients for the relief of the King's evil. Queen Anne was the last English ruler who practised quack medicine for the treatment of King's evil.

From the Textbook of Tuberculosis, the Tuberculosis Association of India.

bidi centre. There are powerlooms installed in most houses where the workers are constantly inhaling fibre and dust. Coupled with poverty, squalor and congestion, the people rapidly develop a respiratory ailment called pneumoconeosis, which eventually progresses to tuberculosis. Pneumoconeosis is also caused by prolonged exposure to coal dust. A survey conducted in the richest coal mining area in the country, the Jharia-Raniganj coal belt in Bihar and Madhya Pradesh showed that among 8,822 colliery workers, 10 % had pneumoconeosis and 118 of them had both pneumoconeosis and TB(15).

Another deathly respiratory disease caused by exposure to high levels of silica dust is silicosis or the black lung disease(16). Silica exists in three forms : quartz, tridymite and cirstolabite. Of these quartz is ubiquitous on the surface of the earth and is used in abrasives, refractories, ceramics, paints, fertilisers and many manufacturing processes. Silicosis tends to increase the individual's susceptibility to TB and also makes the symptoms of TB more severe(17). The combination of the two which is Silico-TB is fatal and leads to death.

A study conducted on the plight of agate workers near Surat showed the population to be highly prone to various categories of lung diseases(18). During the processing of the stone, there is a particular grinding procedure which produces a lot of silica dust resulting in a high incidence of silicosis among the workers. There are other industries where the working conditions are filled with occupational health hazards(19). A worker in the engineering unit of a plant manufacturing motors found he was constantly spitting lumps of black particles. He was diagnosed as a TB case and the lumps found to be small particles of iron to which he had been over-exposed. Even in a tailoring establishment where workers stitch heavily starched clothes all day the risks of TB are unusually high.

Government Programmes

The Indian Council of Medical Research conducted a sample survey in 1955-58 to provide a base for anti-TB work in the country. The National Tuberculosis Programme was finally launched in 1962 with an emphasis on (20):

- early detection and treatment
- vaccination
- training centres in each state
- rehabilitation
- research

However this control programme has failed to have an impact and the total number of TB cases are actually on the rise. An

expert committee set up by the ICMR found that the national TB programme was ineffective as the case finding was poor, there was incomplete registration of cases, 60-70% of the patients were not completing treatment and BCG coverage of children was poor(21). Recently the government has included TB control in the Nation's revised 20-point Programme and the ICMR has identified priority areas in TB Control and evolved programmes to facilitate it's control(22).

Let us take a representative area in Bombay which is endemic for TB and examine how the government facilities operate(23). There is a recognised TB clinic in the vicinity, and when a person develops a persistent cough, he may visit the clinic. Here an X-ray is taken, the sputum analysed and if both are positive a tuberculin test done. There are 10 different drug regimens which have been worked out and based on the results of the tests an appropriate course of treatment is prescribed. The patient is told to get his medicines from a drug dispensary close to his home or work-place, whichever is more convenient. As a follow-up measure there are health workers who visit the patient at home after a couple of weeks.

It seems like a fool-proof system on paper, however what actually occurs is confusion. A patient on going from the clinic to the drug dispensary often finds that his casepapers have not yet been transferred, hence the dispensary does not know what drugs to give him. He is forced to make repeated visits to the dispensary, which he can ill afford. If by some lucky chance, however, he does manage to procure the drugs, he is not told that the treatment will be for a couple of months at least. Hence he takes his medicine, the cough gets better, which to him is an indication to stop treatment. However he finds in a few days the cough returns. Therefore another trip to the dispensary to get another injection or more drugs. The danger of stopping and starting treatment in this fashion is that the bacteria may develop resistance to the drugs and the patient will not show a positive response. Since the dispensary only hands out drugs, they do not pick up the incidence of drug resistant cases. Thus when the patient returns for further treatment they give him the same regimen which may now be useless. If the patient does return to the clinic his case may be accurately diagnosed, often after several months. The lack of co-ordination between the place of diagnosis and place of treatment leads to frustration and the compliance of the patient drops.

The Community Approach

A group from a Community Centre working with women from a slum community in that area found that the best way to tackle the problem was to involve the people in their own health care(24). The knowledge about TB being a health hazard was wide-spread, however the people did not know how to tackle it. The community centre got itself recognised as a drug dispensary. They used the clinic as a referral service, however

1. This is Vithoba and his wife Rukhmani. They share the joys and sorrows of bringing up their family. they have two children, Krishna and Shoba. They have been living happily together but.....

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Koch's Discovery

The real turning point in the history of tuberculosis occurred on March 24, 1882, when Robert Koch, a former country doctor from East Prussia, announced to the Physiological Society of Berlin that he had identified and cultured the tuberclebacillus.

Though the infectious nature of tuberculosis was first established by Jean - Antoine Villemin, he was not able to isolate the agent responsible for the disease, and his report received a very hostile reception especially from the then prevalent notions of the scientific world, dominated and propagated by no less a person than Rudolf Ludwig Karl Virchow, the creator of modern pathology, who had caused a revolution in medical thinking. Virchow then was the Director of the Pathological Institute (Berlin) which had been specially built for him. The Pooh Bah of Pathology that he was, Virchow scoffed at Villemin's imperfect proof and inability to isolate the causative agent.

Koch was well aware of the mistakes of Villemin and the reception Villemin's paper had from Virchow and his cohorts. The lion of pathology (Virchow) dignified the meeting of the pathological society on that day (March 24, 1882) with his presence. We can well imagine the shock he received when he sat patiently listening to Koch's accounts of his experimental proof, executed without a flaw and complete to the last essential detail. Virchow sat silent witnessing the demolition of his dualism theory, the dogma he perpetuated for the past 30 years, by a comparatively unknown Prussian doctor. Koch's address over, the Chairman called for discussion, but there was no discussion. The audience was spell-bound. According to the version given by Ehrlich who was present at the meeting, all eyes turned to Virchow as though demanding an explanation. For once the Pooh Bah of pathology had nothing to say even though the fortress of dualism propagated by him had come tumbling down and lay ruined for ever. At the end Koch said, "I have performed my investigations in the interest of public health, to which I hope they will bring greater benefit."

- adapted from "Pulmonary Tuberculosis"
by M.P.S Menon

they ensured that the papers were transferred on time. The people were informed about the duration of treatment and each case carefully monitored. They were forewarned about problems of drug resistance and pressure from the community was exercised for difficult patients. The problem was tackled at a community level using the family as a unit, rather than singling out an individual.

There is hope that with awareness and health education it is possible for people to cater to their own health needs. Even in the rural areas village health workers are perfectly capable of doing the disease as well as collecting the sputum for analysis(25). However basic pathological facilities and an X-ray Unit are absolute requirements for accurate diagnosis in the case of tuberculosis. The important message is that these are to be used as referral facilities. Increasing the number of clinics alone will not reduce the incidence of the disease. In fact the World Health Organisation has recommended that tuberculosis programmes be integrated into the primary health care. For developing countries this will translate itself into reality only when the majority of the people gain access to a meaningful form of health care.

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MIRA SADGOPAL

Health "Care" Vs The Struggle for Life

India's people, and the world's people, are faced with a gigantic health "care" establishment. It is far from being a vaccum, a situation of "neglect" as most politicians and planners would have us believe, or sometime themselves believe. Like a huge and ungainly bureaucracy, it is both organised and unorganised. Its various parts are linked with each other in both gross and subtle ways; equally, the parts function in contradiction with each other. Some of the parts of the establishment succeed in holding sway in certain spheres by virtue of historical advantage and the forces that back them at the moment. Any group claiming to explore "alternatives" must understand human health, and likewise any other sphere of human welfare (like education, economic development, legal justice, etc.) in this perspective. The individual man, woman or child is powerless and thus always prone to being sucked, duped or dragged into the establishment system.

India provides a magnificent panorama of such a health care establishment. Most obviously, we have in this country a giant multi-tiered Government-operated public health infrastructure, the bottom levels of which are organised into something called the "primary health care" system. It is topped by a spread of state hospitals and national medical institutes as well as various large central public health agencies. Ultimately, this government system is empowered through finance by international organisations and agencies like the WHO, UNICEF, DANIDA, etc.

Second in consequence is the vast body of "qualified" Private Practitioners which, although it is less organised and partially thrives on its own disorganisation, also exhibits a hierarchy of influence and power largely corresponding to the proximity of its parts to the cities and the drug industries. It includes graduates of "allopathic" medicine as well as graduates of the ayurvedic colleges although most of the latter depend on the use of modern allopathic medicines. The minimum requirement for organisation to promote and protect and protect the interests of their members as a class is fulfilled by the Indian Medical Association.

Taking third place in visibility, although it exerts the most pervasive and devastating influence, is the huge drug industry complex. There is a polarisation within this group between competing indigenous and multinational companies which is unequal, so that indigenous industry either succumbs or adopts policies in tune with the multinationals. The multinational drug industry profoundly controls policy and practice within the Government health system as well as the behaviour of Private Practitioners by plying central Governmnent committees and deploying a large army of medical representatives.

Fourth is a large group on the fringe of the health establishment power structure, loudly named "Quacks" by the Private Practioners. It is a very interesting group without any real political power or legal sanction which thrives on the contradictions of the establishment, the extreme powerlessness of the masses and the total culture of mystification which maintains this. This group finds its niche in the rural areas and the lacunae of the towns.

A fifth group exists in the twilight beyond the fringe, often indistinguishable from the masses but merging into the category known as "quacks". They cannot really be called part of the establishment, but they are quite often the first, last, and sometimes the only resource of the poor. These are the village dais, the bonesetters, the guinas, ojhas and bhagats (faith healers and magicians). They are traditional, indivisable from the belief system of the masses. The larger health care establishment has an ambivalent attitude towards this section - it is largely

ignored or riduculed. Recognising their hold over the people, some members, such as the dais, are sought to be co-opted by Government training into the primary health system.

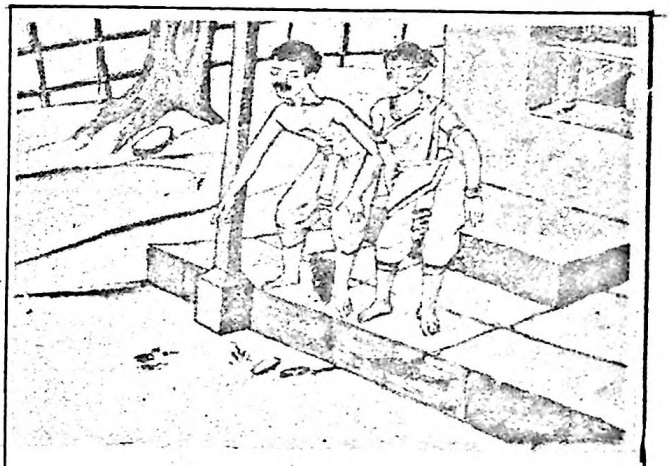
Also according to establishment values organised health services are operated to a greater or lesser extent by large public and private industries and by the central Government for its employees. These are also subject to the same pressures of the health care culture which bear on society in general and are only partially modified by local or specific political conditions. For practical purposes, we may add to this category the attempts of a number of voluntary agencies to provide proper and uniform health services in project areas.

Seeing the larger interconnecting structure of the health establishment in this way gives us an intellectual idea of its magnitude, but what does it mean for the common man and woman in India?

For a start, we can listen to the stories of hundreds upon thousands of men and women suffering from tuberculosis in our cities, towns and villages. Over and over again we can see a plot thus exposed in stark nakedness as each tells of the struggle to be treated and cured by any possible means.

For instance, a villager who gins cotton may notice a gradual loss of weight and energy and may be a cough for several months. But so many of the poor are already exhausted and emaciated by life - they find the line between relative health and disease is imperceptively crossed - and they think it is only "weakness". When work becomes impossible they seek quick help from private practitioners, knowing it will cost, but anxious to get well and back to work. They hope to get by with a strength-giving injection, a few pills may be, and a bottle of life-giving tonic which the doctor will prescribe. So a couple of chickens and some grain is sold to raise money.

The doctor well recognises the story and the appearance. He suspects it is tuberculosis. He knows the capacity of the poor-they will pay for the belief that they will get well, and as long as that belief can be sustained, they will keep on paying the same doctor. He also knows that this disease, if properly managed, has a good chance of continuing without cure for several years before the patient dies. Furthermore, the widespread attitude that TB is incurable, supported by the vast majority of cases which eventually end in death, and the doctor's own observation that patients cannot sustain regular treatment does not lead him to nurture any professional interest in obtaining a cure. Therefore, neither is he interested in proving the diagonsis. A private practitioner will avoid telling that he is treating a man for TB as long as possible. Otherwise he is sure to lose his patient to another doctor. Likewise, sending him for sputum test or X-ray, which may be available through the nearest government hospi-



2. For a month or two, Vithoba has not been feeling well. He often has fever. He used to enjoy Rukhmani's cooking, but now he has lost his appetite. He is losing weight. Rukhmani is worried. She asks Vithoba to see a doctor. But Vithoba keeps putting it off. She says to Vithoba "You should show yourself at the health centre".

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tal, would be giving him away, or privately done, would use up available funds. He is not interested in prognosis either - it will be sufficient to see that the man gets temporary relief and is kept fluctuating within a safe margin between cure and death, with an occasional dramatic rescue form death's clutches, for as long as possible.

What does the doctor's treatment consist of, aside from its psychological content? First on the list is Streptomycin injections, one daily if possible, which is more likely impossible if the patient lives far away. (He may be given tablets of Isoniazid in various proprietary preparations in place of streptomycin, in which case he is certain to be sent off with a couple of impressive on-the-spot injections, such as liver extract and red-coloured vitamin B12) Next, he will be prescribed ethambutol tablets (under one of the marketed brand names), a second line drug for TB which is comparatively expensive but which is being promoted by multinational companies through their medical representatives as a first-line drug. Third, a corticosteroid hormone like betamethazone (again, under numerous brand names) will be routinely given or prescribed by most private practitioners at the start of anti-TB treatment, as it is expected to bring about rapid relief from symptoms and a specific false sense of physical well-being which may be the major factor in hooking the patient. Fourth will be a large bottle of mineral and vitamin tonic which also ironically contains something to stimulate the appetite of the person who is basically dying of hunger anyway. Fifth, a syrup will be added to suppress the cough.

The expense of the first week of such treatment works out as follows (approximately):

1. Inj.SM @ Rs.3.00/day X 7	21.00
2. Tab. Ethambutol I twice/day @ Rs.2.50/day x 7	17.50
3. Tab.Betamethazone 1 thrice/ day x 7 = 21 tablets	8.00
4. Vita-mineral tonic - single large bottle	20.00
5. Cough syrup - single bottle	8.00
	74.50

Public service or private practice ?

with apologies to R.K. Laxman

The doctor's initial fee will vary, but he will also take a daily fee for injecting streptomycin. If he is a good dramatist and psychologist, and the family is obviously prepared to pay, he may set up an intravenous drip and charge heavily.

Quite often, the person does not have enough cash to buy some of the medicines. Typically, the tonics and non-TB medicines will be bought and the anti-TB medicines will be partially or totally dropped from the list. (A survey done by Veena Shatrughna has shown that many doctors write the tonics and less necessary medicines first, perhaps to oblige the drug companies, and the specific curative medicine last.).

How long is this to go on? We have found that a doctor tells the patient initially that his treatment may take a varying period between two weeks to three months. He may decide to further prepare a mental frame by stating that the man is lucky that the doctor has caught the "disease" at this

stage because, although he doesn't have TB yet, "There is a chance of it turning into TB!"

Even if a man has collected enough funds for the initial treatment, he may not be able to follow up. After a varying number of visits to the doctor, and especially after a marked improvement, he stops going- he may go back to work. He also meanwhile consult a gunia of his community about warding of the risks of getting TB, and after certain divination the gunia advises him to carry out certain rituals and sacrifice, which are usually done.

After some time, he again loses weight and his cough worsens. He thinks about returning to the doctor. The Doctor's mention of TB has scared him, and he is ambivalent. He may do one of three things: he may go to another private doctor or a quack, he may go to the Government doctor, or he may return to the same doctor after all. If he goes to another doctor, he goes with a blank slate- he doesn't mention that he has seen another doctor, or flatly denies previous treatment. Hence, a second version of the first experience is likely to unfold.

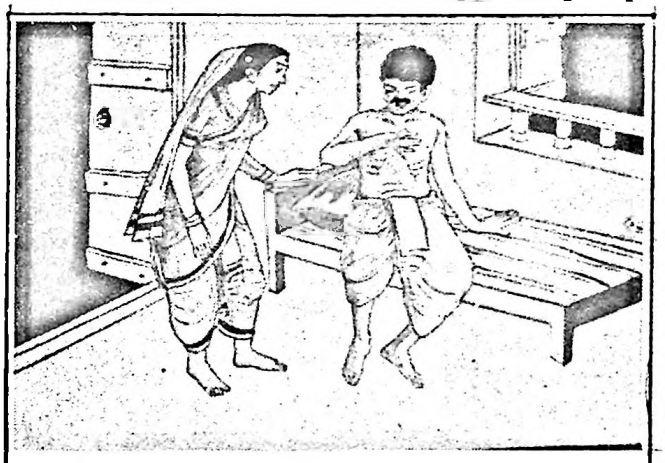
A streak of realism may hit him. He may realise that the choice he has TB is high now, and decides to see the government doctor. At least he may get a clear answer even if he doesn't have faith in the government treatment.

The government doctor is a strange kind of super human. He is invested with the power to treat when he pleases at the Government's expense. (He also carries out a respectable private practice in his home at the Government's expense). A patient approaches him in fear and trembling. Diagnosis for purposes of initiating Government treatment is obtained through sputum exam or X-ray whichever is feasible. Anti TB treatment is started on the doctor's orders. He tells the patient he has TB, or he says, "There is chance of it turning into TB" depending on the role he wishes to play in the drama with the Patient-Government Doctor or Private Practitioner. Sometimes he adopts a dual role, issuing Government drugs from the Primary Health Centre for seeing privately at home, too.

Government rules for the treatment of new cases of TB are clear and rationally the full treatment of eighteen months is provided under the National Tuberculosis Control Programme.

After three months of treatment, sputum examination is to be repeated (if the patient is still coughing up sputum). There should be no more tuberculosis bacilli detectable in the sputum. Then, if not before, an X-ray screening is called for if feasible from the nearest TB X-ray facility. The reduction in the extent of lung damage is thus monitored every six months until six months have passed since disappearance from the X-ray of the signs of damage, when treatment may be officially discontinued.

If progress is satisfactory, Streptomy-



3. As days pass, Vithoba gets thinner. His cough gets worse. He coughs up thick sputum every morning. His coughing keeps Rukhmani awake at night. Vithoba feels very tired. One day he agrees to go to the doctor at the Health Centre.

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cin injections are to be replaced after three months by another drug, usually Thiacetazone (THZ) but it might be Para-Amino Salicylic Acid (PAS). The PHCs dispense Isoniazid and Thiacetazone in combined INH/THZ tablets to be consumed daily for the total remaining period of treatment. To ensure that a patient keeps up regular treatment, he is supposed to be called every month on a particular date three days before the drugs with him are due to finish. In case he does not turn up within a few days, a printed postcard reminder is to be sent to him. (If he does not respond to three such reminders and he has not died), he is known as a "defaulter".

But what really happens to the ordinary patient, or to our villager friend who gins cotton?

There are innumerable obstacles in the way that ensure failure or treatment or "default". We can list these, as follows:

1. Problems of Diagnosis

   a) sputum exam: technician not available, or refuses
   b) x-ray/screening facility distant, expensive, out of order, x-ray plates not available.

2. Failure of Communication to Patient by Doctor:

   a) intention, or lack of intention of doctor to inform
   b) patient's fear
   c) contradictions in the belief system in society about disease
   d) doctor's impatience
   e) mystification of doctor's role
   f) poor relations/faulty communication between PHC staff

3. Problems of Drug supply and Regular Issue:

   a) genuine short supply to PHC from District HQ
   b) siphoning off of TB drugs into the market
   c) siphoning off of TB drugs into private practice
   d) incomplete issue of drugs
   e) doctor's failure to indent (maladministration)

4. Problems of Medicine Cost from the Market when unavailable through government supply

   a) high/rising prices of essential first-line drugs, especially Streptomycin injections
   b) shortage of all first-line drugs in the market due to gross underproduction.
   c) increase in market supply of expensive second-line anti-TB drugs like ethambutol, rifampicin

5. Unnecessary Medicine Cost on Vitamin and Mineral Injections and Tonics and costly Cough Mixtures

   a) brainwashing of doctors by medical representatives
   b) overproduction beyond licenced capacity of tonics, etc., by large and multinational drug companies
   c) mystification among the masses about tonics and the desperation for quick life-giving cures

6. Problems of Local Arrangement to Inject Streptomycin

   a) unavailability of doctor/health worker to inject
   b) fee for injection daily
   c) PHC may refuse to issue injections to patient to take home

7. Problems of Transport

   a) distance
   b) cost in time,energy,fare
   c) irregular public transport services

8. The Social Milieu at Home

   a) poverty - poor shelter, starvation
   b) demoralisation
   c) sex-bias in case of women, especially when childless or without living male offspring
   d) belief in magic and lack of scientific concept of disease

9. Conditions of workplace and Occupation

   a) economic exploitation
   b) noxious physical conditions, like inhalation of cotton fibre and poor ventilation, etc.
   c) lack of safety standards
   d) lack of alternatives.

10. Specific Malpractices by PHC Staff and Doctor

   a) Private practice.
   b) misinformation or non-information of patient
   c) failure to record (incomplete) issue of drugs
   d) neglect of monitoring schedule
   e) failure to maintain treatment card
   f) failure to contact defaulters by postcard

Now, it is sufficient to say that the average poor man of India who gets TB today is likely to face every single one of these obstacles, except 8(c) as he is not a woman. Inevitably, he becomes a defaulter, or he dies, or more likely both. Are there really any alternatives?

Numerous groups and individuals are making attempts to join with others, to challenge the might of the establishment. The outlook of all at this point is at best, partial. Again, the problems of tuberculosis can serve as a useful reference point for illustration. Action is occuring at national, regional and local levels. We will mention a few of these efforts known to us which we consider significant.

The Voluntary Health Association of India (VHAI) is at present carrying out a countrywide investigation, with the help of a number of local and regional groups, of the widely reported shortage of first-line anti-TB drugs in the market and in the Government TB treatment centres. This effort has arisen from a couple of workshops on issues related to rational drug therapy organized in 1982 in joint collaboration with the Medico Friend Circle. During the workshop held in Jaipur in August, evidence from within the pharmaceutical industry was presented by spokesmen of the Federation of Medical Representatives Association of India (affiliated to the All India Chemical and Pharmaceutical Employees Federation, a non-party trade union organisation) to show that the large multinational drug companies are manipulating the supply of anti-TB drugs by producing essential first-line drugs far below their licenced capacities and promoting the newer second-line drugs which are at present imported from abroad. A number of field groups, including members of the Medico Friend Circle, members of the

4. At the health centre, the doctor examines Vithoba's chest. He asks "Vithoba, how long have you been having sputum?"

Vithoba : "For about one month, doctor."

Doctor : "I will give you some cough medicine for your cough. But if the cough is still bad after five days, I would like you to come back again. Before you come please spit some sputum into a clay pot and bring it with you next time. We will test the sputum next time."

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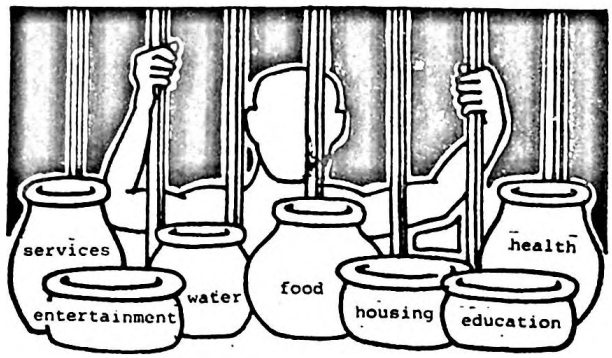
LOCKED OUT OF LIFE



State Voluntary Health Associations, and local units of the Federation of Medical Representatives are collecting data to assess the magnitude of the problem and whether, as many suspect, the incidence of TB among the people is on the increase.

The first weapon against the establishment is information. A second can be formed from a "network of socially conscious health workers" (quoting form VHAI's appeal for cooperation in collecting field data on TB drugs and incidence). The ultimate weapon is a conscious movement within the masses.

As in many parts of the world, we see in India today, various attempts being made in the direction of building a conscious people's movement. Only thus will it be possible to really challenge the establishment on issues of health care and more important, to gather the necessary power and democratic perspective for evolving a real scientific alternative which rests on social justice. At present these initiatives are small and fragmented, particularly in the sphere of health action. Therefore they are weak in comparison to the total strength of the establishment. However, the experience steadily being built up and the link with other democratic developments is significant.

On the regional and national level is the surprising example of the Federation of Medical Representatives' Associations in India, a healthy, growing non-party-affiliated trade union organisation with a vision of society which is somehow startlngly free from the blindfold of narrow conomism. This group's role in collecting vital information about the TB drug situation has already been mentioned. Some of its regional units are particularly active.

Another regional example is that of two other non-party organizations in the seven districts of the Chhatisgarh region of eastern Madhya Pradesh - the Chhatisgarh Mine workers Union (CMU) and the Chhattisgarh Mukti Morcha (CMM). The CMM, an organisation drawing strength from agricultural labour is constructing a peoples' hospital and both organisations launched a joint movement in 1981 which they call "Struggle for Health". At present, understanding of health issues is crude:primarily a realisation of what is grossly wrong and a struggle against blatant injustice. Slowly and painfully these two organisations are struggling to overcome their own inadequacies, faulty habits and traditional beliefs to build up a viable and just health care alternative.

At the local level in areas where there is no established mass organization, small activities and micro-initiatives are being carried out which begin to challenge parts of the health establishment. This has been the case in our own group's work. In the form of a series of three block-level "Youth Leadership Training Camps" (Government of India) of Hoshangabad, we organized groups of literate youth to study the social aspects of the problem of tuberculosis by moving among the people and listening to men and women with the disease tell their stories. The campers compared the people's experience with the provisions of the National TB Control Programme and analysed reason for the discrepancies. They organized a diagnosis camp, poster exhibition and cultural programme and a public question-and-answer meeting in the presence of the Government doctor and the district TB Control authorities. Many contradictions arose which could not be resolved.

At the village level, we initiated an interesting experiment with the women of the labouring class. The male villagers of one large village had formed a labourers union about eight months previously. One day, knowing that I am a doctor, a woman named Bhagwati suffering from untreated advanced TB dragged her emaciated frame to my door. She related a story of neglect and desperation. Her husband was an inactive

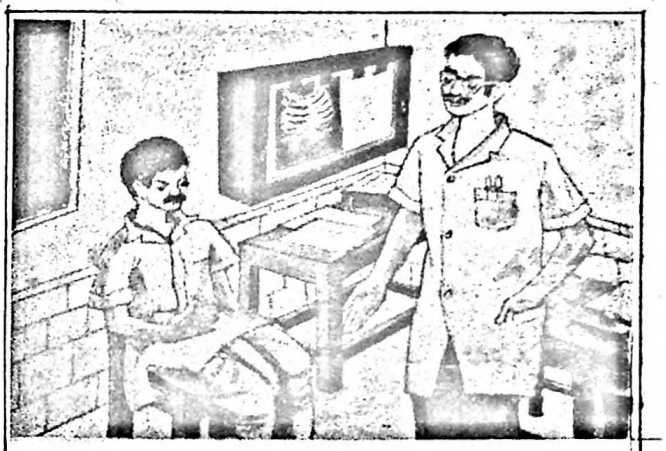
member of the union, although she was not even aware of the existence of the union. Her husband Kaliram had failed to take her to the government hospital for diagnosis and she insisted that the elders in her family wanted her to die. We brought up the case in the union meeting, but were shocked to find total apathy towards her plight. The only concern was that her husband, who failed to attend meetings, was a scoundrel and coward and not worth any attention at all. It appeared as if his wife was only an appendage of him. Up until that time, no women had been involved in the union meetings. We decided to see how the women would react to this woman's problem.

Approached individually and in small groups the women's response on hearing that TB is curable and the treatment provided for through the Government PHC was spontaneous. They decided to hold a meeting of their own to build up pressure for her treatment. This they did in the meeting. I agreed to act in a supervisory capacity to see that the treatment given through the PHC was started. At the time I was working there voluntarily on a once-a-week basis, so I was able to intervene to some extent. We trained a local person to inject Streptomycin and, on my responsibility, a month's supply was issued from the PHC.

The initial phase of treatment was stormy. Bhagwati had high fever and severe lung damage. We held an emergency meeting one night to help the family, now alarmed, to decide whether to take her to the Government TB Hospital at Chhindwara. Four women related stories of their relatives who had gone to the TB Hospital. In three cases, the victims had died anyway. The fourth person, alive and well, had gone there twenty years before when the hospital was run by a mission. Nowadays the hospital is ridden with corruption at all levels and over-crowded so that the expense is great. It was pointed out that the modern treatment would be no different from that she was getting at home from the PHC. So it was decided that the wisest course was to continue to take care of her at home.

In the first ten days, one or two women began to visit her daily along with me, turn by turn. This was a hurdle for them, as Bhagwati is a Harijan and, although all the women were poor, they were nearly all non-Harijans tribals. Muslims and low-caste Hindus who were used to strictly abiding by the code of untouchability when relating to Harijans. They had never set food on the aangan of Bhagwati's hut and they had not seen her about the village for several months. It was an unforgettable sight when one woman, seeing her shrunken form on the cot, irresistably lifted aside her veil, with which she had covered her face in shame, and exclaimed, "Oh, my sister, what has happened to you!"

The women were so excited at the first two meetings that they decided to meet frequently. At their next meeting the women who had already visited the house described Bhagwati's condition and observed that there were obstacles to her treatment at home. Her mother-in-law was being nasty and



5. After another 2 to 3 days Vithoba did not feel any better. So Vithoba decided to see the doctor again and get the medicine changed. This time the doctor said that Vithoba was very sick, but that he would get better with treatment. The doctor said that there was tuberculosis in Vithoba's chest and tbc in the sputum. Vithoba had feared that he had TB for some time. Rukhmani believed that this was their fate, and started crying. But the doctor explained that tuberculosis was not a matter of fate but is a disease. This disease the doctor said, is caused by germs in the sputum.

...pg. 25

uncooperative, refusing to give her food and continuously commenting that she would be better dead. The rest of the family was demoralised and the house was messy. I told them that it was a problem for me as a doctor to keep on giving necessary advice to improve diet and hygiene which had gone unheeded for a week. They decided to control the mother-in-law and had a lively discussion about a proper diet for a TB patient and about fixing up Bhagwati's surroundings to make the place liveable and hygienic. The next day one woman tackled the feisty old mother-in-law and convinced her to draw a truce in the battle with her daughter-in-law until Bhagwati would be fit to fight back again. Another woman sat on the edge of the cot explaining to her husband and eldest daughter what she could be fed, how to arrange that part of the hut, and how to dispose of infected sputum.

The heat was sweltering. The next day we were surprised to find that Kaliram, a bamboo worker, had woven a large overhead fan and attached a long grass rope to it. The small children were kept at a safe distance pulling the rope to and fro in turns, singing songs to the rhythm of the fan. The house was tidy and clean. The sick woman's fever was much less. She was smiling. Her mother-in-law was grumbling, but about other things, and in masked good humour. The family had got the taste of self-respect through social concern.

Recovery was steady for some time thereafter. At the end of one month, Bhagwati was anxious to get her sputum re-examined because she wanted to be able to hold her four-year-old son on her lap, and she wanted to sit-in at the women's weekly meeting. She had lost her one-year-old daughter a year previously, probably because of having infected her with TB. To collect her sputum, she scrubbed a Streptomycin vial thrice with soap and boiled it in water (so as not to kill any bacilli!) and waited for the bus on the road from eight in the morning. The eight o'clock bus did not come. At 11.15 she began walking in the scortching sun barefoot. The PHC was seven kms. away, and she was afraid it would close, so she nearly ran the whole distance. One hour later, she reached the PHC to find that it had closed at 12 o'clock. She waited until it reopened at 4.30 p.m. and proudly offered the vial of sputum to the compounder-technician. He grabbed the vial and threw it on the ground shouting, "We won't do your sputum test seventeen times. Bring it after three months". Then she asked for her month's supply of drugs, only to be told that the doctor had gone and she would have to come the next morning.

Bhagwati returned home exhausted, downcast, but amazed at herself that she had been able to make the journey. Next day, she had fever, but she was determined to go back to get her medicines. Kaliram accompanied her. He decided in addition, to take her to the next town and get her first X-ray done and the sputum test repeated privately. When they faced the PHC doctor, they had to tolerate his sarcastic comment that they had "become big people now". All the drugs were given, but no amount was recorded on the card. In the next town, they paid Rs. 5/- for the sputum exam and Rs. 24/- for an X-ray. The Sputum test was negative. The X-ray showed cavitation, but signs of active healing.

Probably because of the heavy exertion, Bhagwati was not well for about two weeks, but again began to pick up. The following month she went to a wedding and took her vials of Streptomycin and pills along with her, getting them injected by an available doctor. In the fourth month she started work again. She is a traditional dai as are all the women of her caste. An orphan, she had started her midwifery career at the age of seven, as she described to me later. In the same month, some other villagers

Answers to T.B. Quiz

(1) 10 Million (2) 2.5 Million (3) 50 lakhs (4) Equal (5) 80% (6) Increasing (7) Increasing (8) Free (9) Sputum positive cases only (10) 18 months (11) 6 months (12) 300 mg as one dose daily (13) Sputum for AFB (14) No (15) Yes (16) Improved socio-economic status (17) Tibetans (18) 4 (19) 20 (20) All (21) 250 (22) 3.3% (23) 1.9% (24) 50% (25) In a child's neck (26) If live TB bacilli are leaving their bodies (27) No symptoms (28) does not recover several weeks after whooping cough (29) is not well and has had mild fever and loss of weight for several weeks (30) Gita (31) well enough to work (32) Cerebral malaria (33) less likely (34) living organisms (35) Penicillin (36) TB is a more chronic disease in children (37) Vidhya (38) go on for a year (39) TB (40) given BCG and put on the special care register.

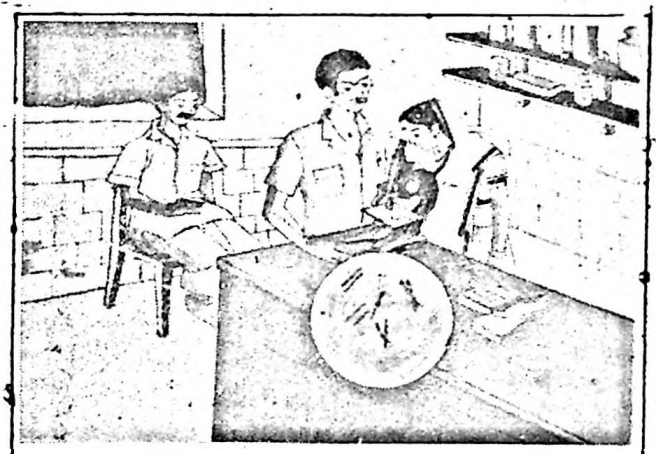
(Some of the questions and answers are based on "Primary Child Care" by King and King)

reported to me that she was catching fish in the river with her nephew.

In the fifth month, Kaliram discovered that Bhagwati had brought back only white tablets from the PHC. Streptomycin had been discontinued, but he knew that anti-TB drugs were necessary, and she had been receiving both Isoniazid (white-coloured) and Thiacetazone (yellow-coloured) in the form of combined light-yellow coloured tablets. He took the pills back to the doctor the next day complaining squarely that she had been given "only one" anti-TB drug by mistake. He didn't flinch when the doctor's cold gaze hit him, and after a moments's hesitation, the compounder was called and told to exchange the white tablets for the familiar light-yellow ones.

And so her treatment will go on, may be without serious lapse until she is totally cured. Kaliram now attends union meetings when he can manage it. Bhagwati attends the women's meetings. He farms his small piece of land, and plays music at weddings. They make bamboo baskets. She delivers babies. They are people of courage, like the others. In the meetings they don't talk about TB, but of the struggle to survive and thrive against the forces of the establishment.

This article by Mira Sadgopal of Kishore Bharati, Hoshangabad was first published in two parts in the September 1983 and October 1983 issues of the Medico Friend Circle Bulletin. We are grateful to them for the opportunity of reproducing it here.



6. In order to convince them about these germs the doctor let them look through the microscope and see the germs that cause tuberculosis. These germs were found in Vithoba's sputum. The doctor said the germs spread from one sick person to others when they cough, spit or sneeze. But Vithoba and Rukhmani did not remember much of what the doctor said. They were too upset.

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INDIRA KOTVAL

A Tuberculosis Control Programme

The Nagpada Neighbourhood House is based in Byculla, one of Bombay's most densely populated areas. It covers Ward D and E of the Municipality (Population 4,44,666 and 4,54,490 respectively) and tuberculosis is endemic in the area. Our concern is the many unidentified cases who are suffering from the disease but are not being treated either because they are unaware, or because fear and ignorance keep them away.

Objectives

One of our aims is to help the community make better use of existing health facilities and not to duplicate services. Therefore when a patient came to us with the symptoms of the disease we would refer him to the nearest Municipal clinic where investigations and drugs are given free. Months later the same patient would come to us for some other illness and we would notice he was no better. Invariably, on questioning we would find either he had not completed the tuberculosis investigations or for one reason and another he found that continuing with the treatment was too difficult. We therefore resolved to start a programme in cooperation with the Bombay Municipal Corporation whereby they would do the investigations and supply drugs when they found a positive case of tuberculosis and we would be responsible for dispensation of drugs, additional nutritional supplements, follow up and continuation of treatment until the patient was cured of the disease. The strength of a voluntary organisation lies in staff motivation and the personalised service it can offer. We thought that if we could couple this advantage with the facilities provided by the government we might be able to run a more effective programme.

Strategy

Accordingly we approached the Municipality who were most cooperative and agreed to do investigations and prescribe the drug regimen. Once they had issued the patient with their cards (in the name of our clinic) they would issue the drugs to me and I had to and account for them. It was our duty to ensure drug compliance, bring the patient for checks and any other necessary referrals.

We started with the idea of building up to cover 100 patients and their families. We intended to focus on the family as the unit and to give nutritional inputs to all of them; build up health awareness and equip them all with an understanding of the disease, its spread and its consequences. We believe this is the only realistic approach if the patient is expected to complete treatment with the help of his family. Starting with screening all contacts we built up the programme slowly and presently have 88 patients under our care, many of whom are siblings and relations.

Environmental conditions cannot always be changed but much can be done to help the patient understand the nature of the illness, the reasons for regular medicine, the meaning of drug immunity and the futility of interrupted medication. Once the person undertands the reasons he is more likely to participate in his own cure and then the battle is won.

To bring this message home needs time and concern for the client. With a large impersonal clinic and several hundred patients this is not possible. Our strategy emphasises individual counselling and informal health education as an integral part of the programme.

Problems and how we overcame them

The Municipality supplied us with a month's supply of drugs for each patient and at first we issued them accordingly. However, we soon realised that in the initial stages very careful monitoring of the drug taking had to be done to ensure the medication was being taken correctly. When on a multi-drug regimen, patients who were unlettered,

would find it very confusing to remember the dosage for each, inspite of the fact that we gave them separate bottles and coloured stickers on each to indicate the dosage. Certain drugs, particularly Rifampicin, has unpleasant side effects, and patients would either omit or limit the amount of this medicine as they wanted. It was only when they returned with the bottles that we would realise this, and a month would already have gone by. We therfore decided to issue drugs on a once a week basis, and found that it took approximately three weeks to sort out all individual problems concerning the drugs.

The other advantage of this weekly issue is that we use the day as a meeting and discussion day. Sometimes we show audio-visuals, at other times cooking demonstrations of soya bean meal or ragee (which we supply as nutritional supplements), are carried out. Women are encouraged to show how they cook green and iron rich vegetables and group discussions on various issues related to the disease are held. It is at these meetings that many of the unvoiced problems are brought up. The stigma attached to tuberculosis, fear that a young daughter may not marry and even fear of loss of sexual potency are discussed over a period of time. There was even an instance when a mother who was irregular with her child's treatment was so pressurised by the group that she had to make a choice as to whether to move from the spot she occupied on the pavement or comply with the treatment.

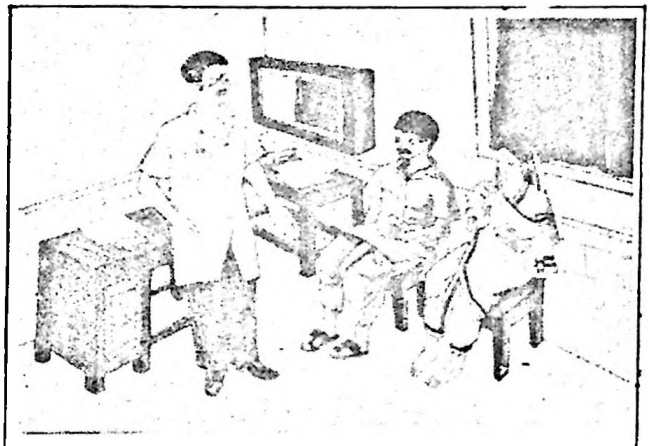
Non Compliance

Inspite of efforts there are always a few defaulters and this is a problem we have not been able to overcome. Because of the belief that injections are all powerful, it has been noticed that often a patient will come regularly until the streptomycin course of thirty or sixty injections is over. After that drug taking becomes irregular. By this time the symptoms of the illness are already disappearing and it is difficult to believe one is still ill and must continue with pills for another six months. Oral drugs are considered second class and the motivation to continue is weak.

Many of our patients are rural migrants whose roots remain in the villages. During marriages, deaths and harvest time the family will disappear for a month or two without prior notice and of course drop out of treatment. Over several group meetings we have been able to explain that for such contingencies medicine will be provided for a longer period, but often decisions to leave are made on the spot and informing the medical clinic has very low priority.

Dependancy

When trust and belief is built round people rather than the treatment, it becomes difficult to duplicate a system or call a halt to the dependency. We had decided that once we started to reach our target of 100 patients and their families, we would



7. But Vithoba remembered then that his brother who stayed with them a year ago, used to cough up a lot of sputum. His brother had since died. If perhaps his brother also had tuberculosis then this was how Vithoba had caught the disease. The doctor said again that Vithoba would get better if he took treatment for 18 months. It would take 18 months for the medicine to kill all the germs in his chest. Vithoba heard what the doctor said, but he was still thinking about his brother. He was also worrying how to pay for such a long treatment.

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Mantoux Test

The Mantoux Test is a tuberculin test to find out whether a person is already infected or not. A tuberculin test does not give any idea as to whether the individual is suffering from tuberculosis, since infection does not always lead to disease.

In the standard Mantoux Test 0.1 c.c. of P.P.D. (Purified Protein Derivative - the purified form of tuberculin from which the constituents of the medium in which tubercle bacilli were made to grow have been removed) is injected intradermally on the front of the left forearm approximately midway between the bend of the elbow and the wrist. This particular position is chosen so that there should be uniformity in the test all over the world and if an illiterate person has to be questioned as to whether the test has ever been done before or not, one can ask whether an injection has been given in the left forearm.

The test is read after 72 hours. To read the test before 48 hours and after 96 hours is not reliable. The transverse diameter of the swelling at the site of the injection is measured. If the diameter of the swelling is 10 mm or more the test is usually called positive meaning thereby that the person is already infected with tubercle bacillius. However since the allergy takes about 6 weeks to appear tuberculin test will be positive only 6 weeks after the infection. If the test is carried out within 4 to 40 weeks (average 6 weeks) of the infection the test may be negative but it does not mean that the person has not been infected.

From the community point of view the tuberculin test gives some idea about the amount of tuberculosis in a community. Since tubercle bacilli are excreted by patient suffering from tuberculosis, the number of persons found infected by tuberculin test will give an idea as whether there are many tuberculosis patients in that community or few of them. For example, in India nearly 50% of the children are infected (i.e. give a positive Mantoux test) by the time they are 14 years old. In America, however, where the number of patients in the community is very small, less than 3% of the children get infected by the age of 15 years. In our country, practically everybody gets infected by the age of 25 years or so, at least in the cities.

transfer those patients who were now taking treatment regularly and for at least six months, to the nearest municipal clinic. This way our personalised service would be available to an increasing number of new patients who require careful handling at the initial part of treatment. Older patients, once exposed to checks at municipal clinics would, we hoped, lose their fear of the authorities and use the services of the municipality independently.

We met with extreme opposition both from the patients and the government. The patients were reluctant to transfer and the municipality envisaged that the paper work involved was too cumbersome. They suggested that we see all our patients treatment through to completion and only add new patients to our list when we were ready to take more. At this point we have not decided how to deal with the problem.

Some Observations

There is far more tuberculosis in the city of Bombay than we are currently aware of. A random mantoux test conducted on our under-five population showed that out of 145 cases tested 39 were positive cases and a further 28 cases investigated as contacts were also positive. Early diagnosis and a 7

month drug regimen based on Rifampicin can control the disease. From a total of 348 cases investigated, 88 were found to be positive. Since the government provides free drugs and investigations, it is possible to treat all patients provided a) an awareness of the problem and the need for cure is understood, and b) voluntary agencies assist the government to implement these programmes more efficiently.

Patients drop out of treatment mainly because they do not understand the need to take drugs regularly and because they cannot explain their problems adequately. A personal service with individual attention can help this a great deal.

It is important that tuberculosis patients be given nutritional inputs in the form of vitamins, irons and nourishing food because the strong drugs taken with a meagre diet cause severe side effects that can be so unpleasant that the patient is forced to drop out of treatment.

Environmental conditions, poor health and undernutrition are the main causes of tuberculosis and unless the social and economic conditions in our country improve I am convinced the disease cannot be eradicated.

POSTCRIPT: So far there has not been any problem of drug shortages. But in March 1984 the BMC apparently fell short of funds and they are now waiting for the new budget to replenish the coffers. As a result there has been no money to purchase drugs and hence a drug shortage. Drugs are purchased as follows:

Streptomycin/PAS/paracetazone from private companies. Rifamycin/Isonex/Ethambutol/ are produced by the government at Kasturba Hospital, Bombay from 1984.

NEW REHABILITATION COURSE FOR THIRD WORLD ANNOUNCED

The Tropical Child Health Unit of the Institute of Child Health, London University, is setting up a Diploma Course for Trainers and Supervisors of Community Rehabilitation Workers in Developing Countries under the direction of Professor David Morley. This Course will run for nine months (October/July) and an initial Course is planned for October 1984.

The Institute of Child Health already runs a course leading to the degree of Master of Science (University of London) in Mother and Child Health. It is hoped that the new Diploma Course may eventually become a similar MSc Course in Community Rehabilitation. For the time being a Diploma, recognized world wide, will be awarded to successful students.

Dr. Pamela Zinkin, who will be in charge of developing the Course has recently returned to the UK after spending five years as Professor of Paediatrics, Maputo, Mozambique, said: It is important that Rehabilitation should be more available to disabled children in remote rural and slum areas of the Developing World. And it is important that this rehabilitation is tailored to fit the circumstances and needs to these children. By training those who will return to their countries to set up training courses and supervise Community Rehabilitation Workers we plan to achieve a revolution in the management and rehabilitation of disabled children in what have been up to now the forgotten corners of the world.

For details write to : Institute of Child Health
(University of London)
Tropical Child Health Unit
30 Guilford street
London WC IN 1EH

Bombay Tuberculosis Statistics - 1983

The Bombay Municipal Corporation has calculated that by the end of 1984 a total of 1 million people (out of a population of 9 million) will be under their tuberculosis treatment. This excludes patients getting treatment from private doctors. These figures are based on statistics gathered during the tuberculosis campaign year 1983 when 88,000 people were under municipal treatment.

On a 7 month rifamycin and supportive drug therapy (known as second line treatment and given when the first line treatment fails to give a response or when a quick therapy is sought) within the campaign year, it was found that 25% of the patients were completely cured of the disease. 38% are still under treatment because of the severity of the disease. 30% came in the last quarter of 1983 and they are expected to complete treatment in early 84. 7% dropped out of treatment. An analysis done by the BMC as to the causes of drop out with a percentage wise break up of the 7% is listed below.

PERCENTAGE	REASONS FOR DROP OUT
26%	Non residents of Bombay who came forward & have now moved back to rural areas
10%	Investigations done at BMC clinics but chose to be treated at private clinics
5%	Died of the disease
12%	Moved out of the municipal area where they were being treated and health visitors are unable to do adequate follow up.
26%	Refused to take treatment either because of unpleasant effects of the drug or insufficiently motivated.
13%	Wrong address given for fear of stigma attached to disease.
8%	Miscellaneous reasons.

Incidence of tuberculosis in Bombay city is recorded by the BMC as follows.

1980	37,000 cases treated by BMC
1981	50,000 cases treated by BMC
1982	65,000 cases treated by BMC
1983	88,000 cases treated by BMC

There are two ways of interpreting this data. BMC argue that the rise in figures show that more people are coming forward for treatment because of effective propoganda. One could also state that TB is on the rise due to rural migration to the city and because the infection is not being controlled.

COST OF TREATMENT FOR BMC:

FIRST LINE TREATMENT:	STREPTOMYCIN/ISONEX/PAS/THIACETAZONE	Rs. 135.00 p.m.
SECOND LINE:	RIFAMYCIN/ETHAMBUTOL/PZA/ISONEX.	Rs. 186.00 p.m.
	RIFAMYCIN/ETHAMBUTOL/ISONEX/STREPTOMYCIN	Rs. 276.00 p.m.

J.S. MAJUMDAR

Production of Anti – TB Drugs

J.S Majumdar is the Secretary of the Federation of Medical Representatives Association of India and an active member of the Drug Action Network. The above article is extracted from "A Study on Prevalent Diseases in India and Production of some Essential Drugs" which was a paper presented by him in the Drug Workshop organised by VHAI in August 1982. It is being reproduced here as a case study to show some of the dynamics of drug-shortages in the case of life-saving and essential drugs.

On 20th April, 1982 Sri Dalbir Singh, the Minister of State for Petroleum, Chemicals and Fertilizers, made a statement in the Lok Sabha that PAS and its salts, and INH production were showing a declining trend during April, 1981 to February, 1982. He further stated, "the decline in production is due to (1) demand constraints or shifts, (2) Industrial unrest, (3) Availability of cheaper imported drugs."

From the available data and facts it will be revealed that the Minister was either wrongly informed or was giving wrong information.

There are no demand constraints or shifts as far as anti-TB drugs like INH and PAS are concerned. It was earlier stated that of an estimated 10 million patients suffering from active tuberculosis of lungs over 6 lakhs patients (except in a few States) were reported under treatment. Vast number of other patients have no access to modern medicines. The talk of demand constraints or shifts is only to hide this fact. The projected requirements during the sixth five year plan does not show that there is a declining demand of INH & PAS as reported by the Minister.

The compound rate of growth, during this period, of INH is 20%, PAS and Thiacetazone 15%, Ethambutol 22% and Rifampicin 16%.

Source : Report of the "Working Group on the Drugs and Pharmaceutical Industry for the plan period (1978-79 to 1983-84)", Government of India, Ministry of Petroleum, Chemicals and Fertilizer (Department of Chemicals and Fertilizers)

Streptomycin, INH, PAS and Thiacetazone are well established anti-TB drugs. The auto-toxicity of Streptomycin has been accepted as a hazard of the treatment and

Actual Production and Requirements of Anti-TB Drugs in Tonnes

Name of the Product	Actual Production 77-78	Requirements 78-79 Base year	82-83 Sixth plan	83-84 Rolling plan
I N H	79	175	375	450
P A S	548	750	1300	1500
Thiacetazone	26	35	60	70
Ethambutol	3	40	90	110
Rifampicin	Nil	3	6	7

sufficient care is being taken. Similarly, Thiacetazone is also recommended with caution. But, the fact remains that indigenous technology is available for the production of these drugs and the country can be fully self reliant with proper planning. Resistance to these drugs are rarely reported when properly used in combinations. Therefore, there cannot be any demand constraints for these reasons nor there are demand shifts. It is well established now that poverty, malnutrition and absence of proper hygiene prepares the ground for invasion of the tuberculosis. Most of the T.B. patients cannot purchase medicines of their own. If any demand constraints are there, it is due to the price factor and that too, not the total expenditure but the daily expenses on drugs. Therefore, there cannot be shift in general towards Rifampicin and Ethambutol.

Further, Rifampicin is not indigenously produced. The drug is totally imported. The imports of this drug were as follows:

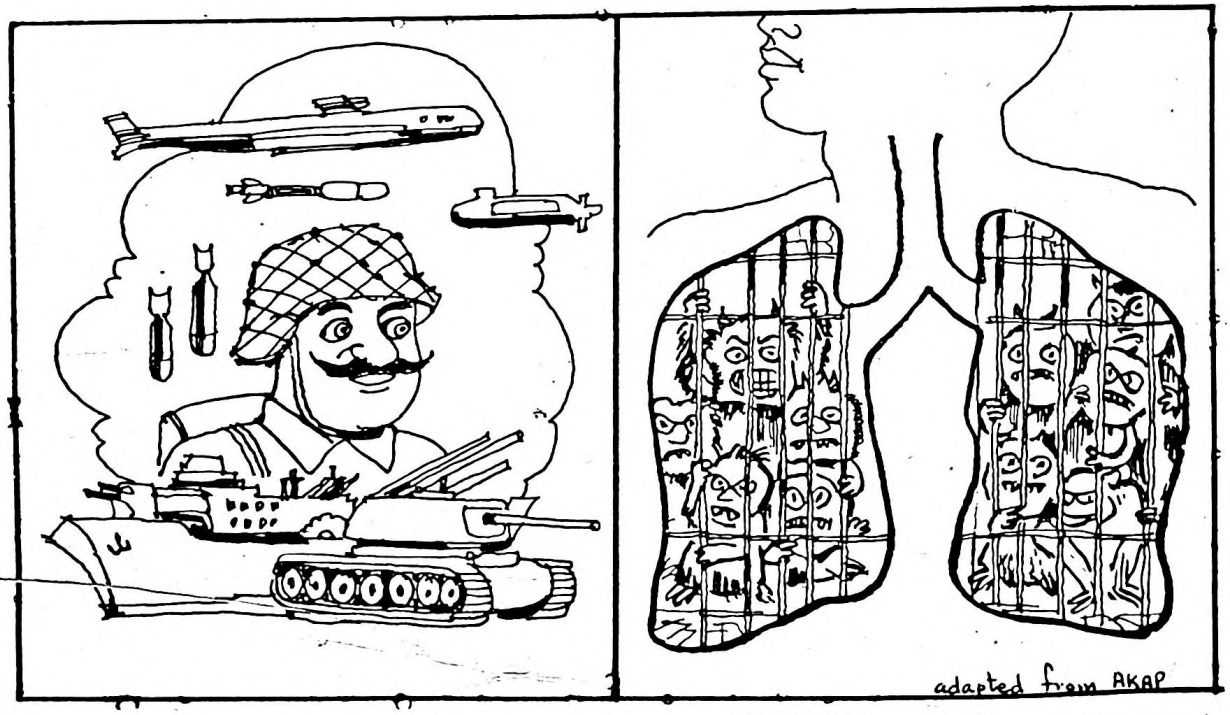
1979-80	1980-81	1981-82
5413.5 kg	8948.5 kg	15785.5 kg

Such a small quantity of imports can hardly meet the actual needs of the T.B. patients. In addition, Rifampicin is also used for the treatment of Leprosy in combination with Dapsone. The drug is costly. The CIF cost per unit during 1981-82 was Rs. 4130/- per kg. The technology of manufacturing of Rifampicin is only known to two companies in the world - one is in Italy, the other is in Switzerland. They have the monopoly in the manufacture of this drug. The donor for Rifampicin in India is the Swedish International Development Agency (SIDA).

It will be evident from these facts that demand can hardly be shifted towards Rifampicin, which is costly, wholely imported and for which technological know-how is not available in India.

As far as Ethambutol is concerned, the

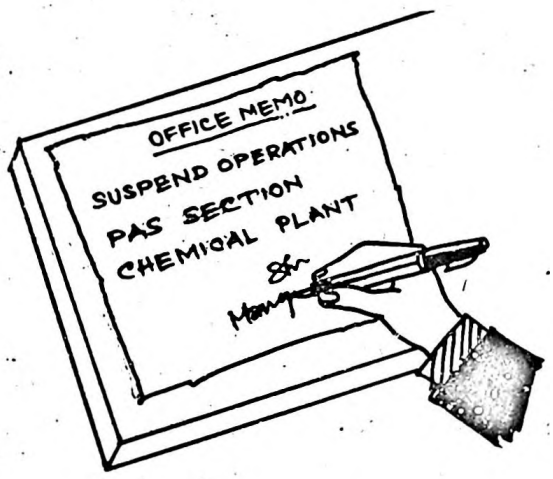
WAITING FOR THE "SPACE INVADERS".....



.....AND THE ENEMY WITHIN

In the year 1980 the world spent a million dollars a minute on armaments.

DEATH WARRANT - MNC STYLE.



actual production in the country from imported intermediaries during 1979-80 was 23.53 tonnes. In addition, 96.19 tonnes were imported during this period.

From this, it will be evident that more emphasis is given to be import of the drug rather than the actual production.

On the one hand deliberate attempts are made to create shortages of INH & PAS by cutting down indigenous production, on the other, import of costly drugs are encouraged on the plea of demand shifts. Instead of a natural demand shift, attempts have been made to deliberately create conditions to make room for costly and imported drugs, and for this millions of poor T.B. patients have to pay the price.

The production pattern of Pfizer Ltd. is a classical example of under-production of essential anti-T.B. drugs and over-production of non-essential products.

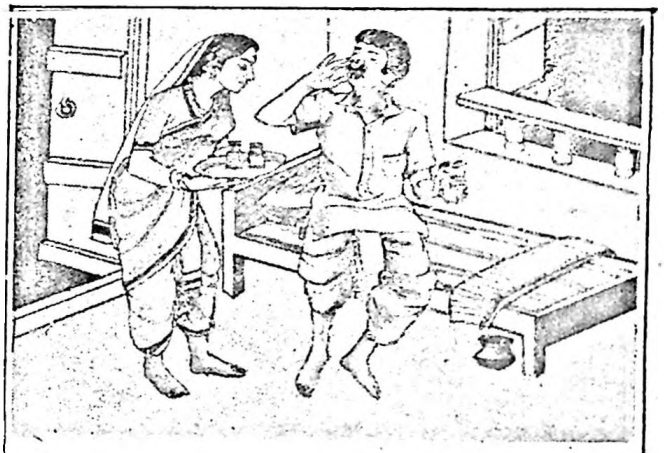
Products	Licensed capacity	Production 1978	1979
		(in Tonnes)	
INH	80	45	52
PAS and its salts	110	90	94
Protinex	110	269	290

(Source : From Company reports)

In their attempt to deliberately cut production, the industry and Government take various pleas including so-called labour unrest. In reply to a question in the Lok Sabha on 18th August, 1981, the Minister of State for Petroleum, Chemicals and Fertilizers, stated, "Periodical shortages of PAS granules manufactured by M/s. Pfizer Ltd. were reported from Delhi in the recent past. The matter was taken up with the manufacturers who reported that as they had closed down for some time due to labour unrest and later were affected by go slow, their production and supplies of the above formulation was affected."

Whereas, the factory manager of M/s Pfizer Ltd. issued a notice on 26th March, 1981 which reads:

TO EMPLOYEES OF PAS SECTION:



8. The doctor said that INH tablets only cost about Rs. 3 per month and INH tablets for TB were also free at the health centre. So Vithoba started treatment. Sometimes there were no free drugs and he had to buy the medicine in the bazar. The doctor explained that the streptomycin injection if needed cost about Rs. 1 for each injection for the first month, but that the injections would be available free at the health centre.

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In the Lok Sabha

UNSTARRED QUESTION NO. 1434
TO BE ANSWERED ON THE 6TH MARCH, 1984

Manufacture of anti-tuberculosis drug "Rifampicin"

1434. SHRIMATI MADHURI SINGH:
will the Minister of CHEMICALS AND FERTILIZERS

be pleased to state:

(a) the steps to be undertaken for the manufacture of the anti-tuberculosis drug "Rifampicin":

(b) whether it is a fact that the large-scale import at dump prices by multi-nationals has proved to be a disincentive for domestic manufacturing of this vital drug which is equally effective for the treatment of leprosy; and

(c) the quantity of Rifampicin being imported and estimated demand for the drug?

ANSWER

THE MINISTER OF CHEMICALS AND FERTILIZERS
(SHRI VASANT SATHE)

(a) Government had issued 7 Industrial approvals for the manufacture of Rifampicin. Foreign Collaboration proposals were also approved wherever they conformed to the parameters of Government policy.

(b) No instance of dumping of Rifampicin has come to the notice of the Government. However, it is possible that the fall in CIF prices of Rifampicin in 1982 and 1983 had an impact on the investment in the indigenous manufacture of the drug.

(c) The 6th Plan Working Group had estimated that in the year 1984-85 Annual Demand of the drug would be 24 MT.

Imports for the last three years had been as follows:-

YEAR	IMPORTS (MT's)
1980-81	8.95
1981-82	16.07
1982-83	36.90

"It is hereby notified for the information of Employees of PAS section that due to the sudden steep increase in the price of MAP without a corresponding increase in the price of the finished product, it has become un-economical to produce PAS and, therefore, it has become necessary to suspend operations in the PAS section of chemical plant. We are making all efforts to secure a price revision of the finished product.

Employees of PAS section will be temporarily transferred to other departments with effect from April 6, 1981, to date from which PAS operations will be suspended."

THANE, DATED MARCH 26, 1981

for Pfizer Limited
Sd/- B.B. Roy
Factory Manager"

From the above statements it would be evident that attempts were made by the company to hide the fact that they stopped production of PAS granules as the profit margin was less compared to products like Protein Hydrolysates, Tetracyclines, vitamins etc.

The Government did not care to investigate the facts and simply passed on the false information given by the company.

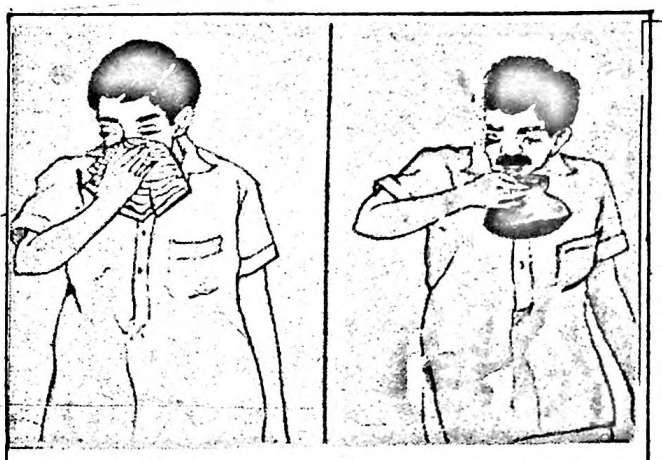
In reply to another question in the Lok Sabha on 18th August, 1981, the Minister informed the House that though Pfizer's PAS granules were in short supply, an equivalent brand of PAS granules (Biological Evans) was available. A study in the market revealed that PAS granules of Biological Evans was not available since December, 1980. The company had stopped supplying PAS granules from January, 1981. This is only an example to show the manner in which the Government machinery functions in finding out the facts about the supply of essential drugs.

By a confidential circular dated May 26, 1981, Pfizer Ltd. informed their Regional Managers that they could quote a special hospital price for their tetracycline and some other group of products in a special rate less than the usual trade price. But, the circular states, "The availability of narrow spectrum injectables and Anti-TB dosage forms will be very uncertain". This conclusively proves that there was no demand shift from INH and PAS but an artificial shortage was created of these drugs.

A survey in the market also revealed that PAS of Pfizer and Biological Evans were not available since early 1981.

Similarly, Streptomycin from Pfizer and Glaxo has not been available for many years. INH is also in short supply periodically.

The above facts will prove that there was neither a demand shift nor labour unrest but a deliberately induced declining trend in production.



9. Vithoba did not want to spread the disease to his children. So whenever Vithoba coughed and wanted to spit, he did not spit on the ground where the children played. Instead he spat into an old clay pot and covered his sputum with ash. Every night Vithoba emptied the old pot in the fire for 10 minutes to kill all the germs. Then he used the same pot for spitting into, the next morning.

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ANNIE GEORGE

Better Care in Tuberculosis

"Better Care in TB" is the draft version of the latest booklet in the "Better Care" series published by VHAI. Those of you who have seen the earlier booklets like Better Care during Diarrhoea, Better Care in VD, would know that each message or teaching point is accompanied by an appropriate photograph or visual, with a new page for each point. The idea is to get across the most crucial points of "Better Care" in the simplest and most direct manner possible, so that it is understood even by semi-literate persons. Of course, the booklets are translated in almost all the regional languages. We would be happy to have your valuable feedback to enable us to modify the script given below so that a correct and even better version of 'Better Care in TB" is produced.

1. Can T.B. be cured ?

   * Yes, T.B. is completely curable.
   * It is never too late to take treatment.
   * Early treatment can cure all types of T.B. completely.
   * If you have any of the signs of T.B., seek medical help immediately.

2. What kinds of people get T.B ?

   * Any body can get T.B.
   * Rich people and poor people can get T.B.
   * Young children and old can get T.B.
   * People in villages and people in cities can get T.B.
   * Good and bad people can get T.B.
   * Men, women and children can get T.B.

3. What causes T.B. ?

   * Very small germs cause T.B.
   * They are so small, they cannot be seen with your eyes.

   These things do not cause T.B. :

   * Bad blood
   * curse of the gods
   * a bad horoscope
   * fate
   * evil spirits
   * wrong foods
   * worries and anxieties.

   T.B. can affect many parts of the body but most people having T.B. have T.B. of the lungs.

4. Can T.B. spread from one person to another ?

   Yes.

5. How does T.B. spread ?

* T.B. germs are present in the sputum, pus, urine, faeces of a person having T.B.

* When a healthy person comes in contact with these germs, that person may get T.B.

* If a person having T.B. does not cover his mouth when he coughs, the healthy persons near him may get T.B. germs in their body.

* If a person with T.B. spits anywhere like the road, market place, or the court yard of his house, the healthy people there may get T.B. germs in their body.

* Usually when T.B. germs get inside a healthy person's body, the germs die. But sometimes the T.B. germs remain alive in some people and can cause T.B.

6. How can we stop the spread of T.B. ?

We can stop the spread of T.B. by observing the following:

* Person with T.B. must always cover his mouth when he coughs.

* Person with T.B. should never spit on the floor or open place.

* Person with T.B. must spit in a covered container and burn the sputum every night.

* Person with T.B. should have a plate and glass separately for him.

* He should use only that plate and glass.

* No one else should use the plate and glass of a person having T.B.

* As long as the person with T.B. has a cough, the person should sleep separately from his family.

* T.B. is very contagious. Know the symptoms of T.B. and locate everybody in the village who has T.B. A person who takes treatment regularly does not spread T.B. to others.

7. What are the signs of T.B. in adults ?

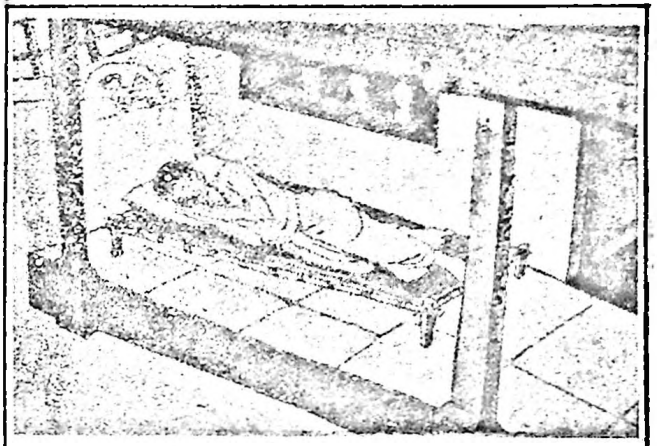
* Cough lasting for more than 4 weeks, especially just after waking.

* Chronic weight loss.

* Mild fever, especially in the evening.

* There may be chest pain.

* Blood may be present in the sputum.



10. Vithoba did not want his children to catch tuberculosis. So he slept on the verandah until his cough and sputum went away. Then the children did not have to breathe the air when he coughed. After taking his tablets every day for 8 weeks his sputum disappeared and cough was much less. But doctor said that he must take treatment for 18 months or the disease would come again, worse form. If this happened, the doctor said that it would be difficult to cure him then.

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In advanced cases:

* Coughing up blood
* pale, waxy skin
* voice grows hoarse (very serious)

8. What are the signs of T.B in children?

* Children with T.B. may not have cough or mild fever.
* The most important sign in children having T.B. is loss of weight, even if the child is eating well.
* If a child who eats well does not gain weight for two successive (one after the other) months, always suspect T.B.

In a small child, T.B. is very dangerous and can kill the child.

T.B. is curable. If you have any of the signs of T.B. seek medical help.

The CHW will advise you on what to do.

Early treatment ensures complete cure.

9. Why should you know the signs of T.B ?

T.B. is curable, yet millions die from T.B. every year. If you know the signs of T.B. and are on the lookout for them you will be able to take early treatment.

10. where can you get treatment for T.B ?

* All primary Health Centres and sub centres treat T.B. patients.
* All municipal and public hospitals treat T.B. patients.
* Most voluntary health centres also treat T.B. patients.
* Your CHW will guide you to the nearest T.B. Clinic.

11. How will the doctor/nurse know that you really have T.B ?

* The doctor will know if you really have T.B. by asking about the signs and symptoms.
* Examining you physically.
* Asking you to get a sputum test done.
* Asking you to have an x-ray of the chest done.
* Finding out if anybody else in your family, neighbourhood or work place has T.B.
* Asking you about the type of work you do.

12. How long does it take to cure T.B. completely ?

* It takes at least 12-18 months to cure T.B. completely.
* Your symptoms will disappear after 2-3 months of treatment. But, you are not completely cured. The T.B. germs are still inside your body. The treatment has made the T.B. germs weaker but has not killed them completely.
* To kill the T.B. germs completely, you will have to take treatment for 12-18 months.
* If you take treatment regularly, T.B. is completely curable.

13. What will happen if treatment is not taken regularly ?

* If you do not take complete and regular treatment, all the T.B. germs in your body will not die. So even if your symptoms (ie cough, fever) have disappeared, you still have T.B., and the symptoms may reappear.
* If you stop treatment before you complete the full course, you may develop T.B. again.

14. If a person takes treatment sometime and does not take treatment other times

is it dangerous ?

* Yes. If a person with T.B. takes treatment sometimes and does not take treatment other times, the person can become very ill.

* The T.B. treatment is effective only when the drugs are taken continously. If the patient stops and starts treatment the drugs can sometimes loose their effect. This is very serious, then only very costly drugs will be able to cure T.B.

Always inform your doctor or CHW before hand if you cannot collect the drugs for the days you will be unable to attend the T.B. clinic.

15. Is it necessary for a person who has T.B. to stay in a hospital ?

No. A person who has T.B. can be looked after at home.

16. What care should the family members take if one of them has T.B. ?

See question 6 above : How can we stop the spread of T.B. ?

Also :

* Keep the patient in a room where there is lots of sunlight and fresh air.

* All family members should take a sputum test (or x-ray) to find out if they have T.B.

17. How soon can a person who has T.B. go bak to work ?

He can go back to work as soon as his symptoms have disappeared and a sputum test shows that there are no T.B. germs in his spit.

18. Are there any precautions a T.B patient should take while at work ?

He should ensure that :

* he does not spit in a public, open place,

* he always covers his mouth while coughing,

* he always covers his nose while snezing,

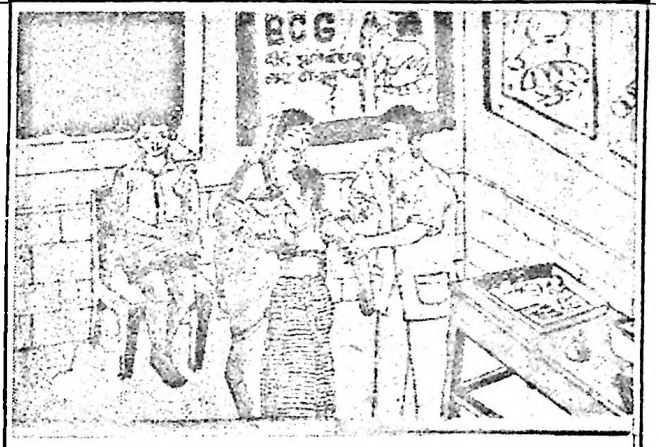
* if he works in a dusty atmosphere - he should cover his mouth and nose.

19. Does a T.B. patient need to take milk, eggs, fish and meat ?

* These foods are not necessary for a T.B. patient.

* If he can afford it, he should eat it.

* If he cannot affort it, he should



11. The doctor did not want the children to get tuberculosis. The doctor asked Rukhmani to bring the children for checkup. He found Krishna and Shoba both healthy. To help protect them from tuberculosis he gave the children BCG injections. These injections are given on the shoulder and do not cause fever.

Vithoba had been off work for two months. They had very little money left. Vithoba decided they could not afford to have another child. They were happy with their two healthy children. So Vithoba decided to ask the doctor about family planning.

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eat a lot of the foods he eats every day.

20. Do people die of T.B ?

Yes, many people in our country die of T.B. every year. If they come for treatment early and take treatment regularly, they will not die but become cured.

21. What can you do to avoid getting T.B ?

* A BCG vaccination will protect you from T.B.

* Anybody can take a BCG vaccination.

* The BCG immunisation are available at all Primary Health Centres.

* BCG is available at all muncipal and other public hospitals.

* Your CHW will inform you where BCG is available.

22. Does BCG always protect you from T.B ?

* No, some people get T.B. even though they have taken BCG.

If you get T.B. after you have taken BCG, usually the TB will be easier to cure. You must come early and take treatment regularly.

23. What should a CHW tell the patient about treatment ?

The CHW should tell the person having T.B. that :

* if the person starts treatment right away, the person will be cured,

* after a few months of treatment, the person's symptoms will disappear and the person will feel stronger. Don't stop treatment at that time.

* Treatment for T.B. takes a long time, at least 12-18 months.

* Treatment for T.B. must be taken regularly and without interruption.

* the person should continue to take treatment till the doctor says to stop.

B.C.G.

B.C.G. stands for Bacillus Calmette Guerin. B C G is a living bacillus but differs from the tubercle bacillus in its being harmless. In other words, the tubercle bacillus is so changed that in the form of BCG, it loses the power to produce disease but retains the power to produce anti-bodies. Calmette and Guerin were the two French scientists who achieved this by making the bovine tubercle bacillus grow repeatedly on a special medium containing bile for 13 years, till it was unable to produce disease even in a guinea-pig.

In order to remove some of the difficulties of storage and transport, freeze dried vaccine is being now used, and can be used within three months of manufacture.

If BCG is given to an uninfected child, a small nodule appears in 7 to 10 days at the site of vaccination. It grows bigger, a small pustule forms which later on breaks and in about 3 to 4 weeks time there is a small ulcer which heals in about 3 months' time. This is the normal reaction which most children get after vaccination. If, however, an infected child is vaccinated, the nodule and ulcer are formed very quickly (Koch's phenomenon).

It has been found that if uninfected children are given BCG, the chance of their developing the disease is reduced by about 80%. Millions of children all over the world have been vaccinated and it has been proved beyond all doubt that BCG is harmless and can be safely recommended even for new born babies.

West Bengal

"Drugs Vs Peoples Health"

A one day seminar on "Drugs vs Peoples Health" was organised by the WB VHA on 16th March at Max Muller Bhavan, Calcutta. The seminar was attended by Dr. Zafrullah Chowdhury, of Gonosasthya Kendra, Bangladesh who was invited as the guest of honour. Speaking on the occasion, Dr. Chowdhury said that India with its large complement of scientists and qualified people was in a better position to formulate its own drug policy. It was ironic that the Hathi Committee report which had inspired Bangladesh's drug policy, had not been implemented in India.

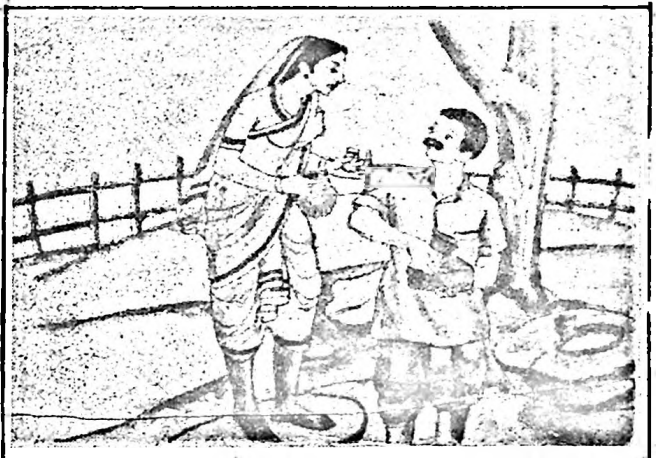
Dr. Mira Shiva, Coordinator, Low Cost Drugs and Rational Therapeutics, VHAI, stressed the need to safeguard health as a human right and pointed out that essential drugs based on the health needs of the majority were not being given priority in production, distribution or even prescribing.

Bihar

The 16th General Body meeting and one day seminar on the National Health Policy were the major events of February 1984. Mr. Averthanus D'Souza, Executive Director, Voluntary Health Association of India, who delivered the keynote address on the theme, "National Health Policy and its implementation", suggested in his talk that to ensure better participation of the voluntary health sector, a joint consultative committee should be set up. This committee would facilitate the planning of operational strategies and help to remove administrative bottlenecks.

Mr. Brij Kishore Singh, Minister of State for Health, in his inaugural address pleaded for the active cooperation of voluntary sector in the implementation of the various programmes initiated by the Government.

Mr. Singh welcomed the proposal of Mr. D'Souza to form a joint consultative committee. He said that it will be a positive step towards formalising the cooperation between the voluntary health sector



12. After a few months of treatment Vithoba is back to work, feeling much stronger. He is not so thin. He has gained several kilos weight. Rukhmani makes sure that he takes his tablets regularly. She does not want this disease to come back again. She wants Vithoba to take the tablets for 18 months as the doctor said.

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and the Government of Bihar. He promised to examine this proposal favourably.

The National Health Policy was discussed with special consideration being given to reorientation of Health Education and training, low cost drugs and rational therapeutics, nutrition and mother and child health care.

There was a panel of 5 speakers. Dr. Ramaiya from Kurji Holy Family Hospital, Patna, shared his views on the present education and training system, Dr. Sathyamala and Sr. Lorraine spoke about Mother and Child Health Care, Ms. Sibane Chakraborthy from Calcutta presented her research paper on Nutrition, and Mr. Majumdar, General Secretary, Federation of Medical Representative Association of India highlighted the drug situation in India. Fr. Britto briefly shared his views on the indigenous system of medicine.

Andhra Pradesh

Directory

The AP VHA Directory is ready to be released. This is an effort to bring all the health care institutions and health related organisations in the voluntary sector in Andhra Pradesh, into one compendium. It is felt that this directory will have value for the voluntary organisations themselves and also prove useful to the state government.

Office Centre :

AP VHA has managed to get a site for an independent office at Secunderabad. It will be adjacent to the new CHAI office and is about 4 km from Secunderabad station. The new centre would be ready by 1985.

Study

AP VHA is making a study of cultural practices of mother and child care to assist in planning appropriate health care delivery systems in the rural areas.

Kerala

Training Programmes:

The second programme in the series on "Social Security Legislations" was held on 27th January at the Rajagiri College of Social Sciences, Kalamasserry. Twenty delegates from Ernakulam and Alleppey Districts attended the programme where the legislations dealing with Provident Fund, Gratuity, Minimum Wages and Maternity Benefit were discussed. One more programme in the same series will be arranged at Quilon for the southern districts, in May 1984.

The KVHS Secretariat is busy organising a one day panel programme on the entire procedures related to import and customs clearance of equipment and supplies. The first course will be arranged at Ernakulam and the faculty will consist of senior officials from the customs department and also from non-governmental agencies.

COCONUT WATER USED IN DETECTION OF TUBERCULOSIS

Coconut water which is usually discarded has now been used in the Philippines to develop CEM or Coconut Water Egg Malchite Green Medium, one of the primary tools in mass detection of tuberculosis. CEM was found as efficient as the Lowenstein - Jensen medium which is normally used in a TB bacteriology services. Using 1976 prices, a laboratory using Lowenstein-Jensen medium spent US$ 59 while only US$ 7.60 or 1/8 th of the former is needed for CEM.

- The Cocomunity Newsletter Vol. II No. 12 June 1981.

Further Reading on T.B.

BOOKS

(1) Diagnosis, Treatment and Prevention of Pulmonary TB for General Practitioners

The Tuberculosis Association of India, 3 Red Cross Road, New Delhi 110001; 18 pg

(2) Handbook of TB

by S P Pamra,
Tuberculosis Association of India, 3 Red Cross Road, New Delhi-110001; 1980 ; 110 pg.

(3) Introduction to Tuberculin Testing and BCG Vaccination

by Shashidhara, A N
IBH Prakashan, Bangalore
1980 ; 119 pg

(4) Pulmonary Tuberculosis

by Menon, M P S
National Book Trust, A-5 Green Park, New Delhi-110016. 1983 : 254 pg; Price Rs. 23.25

(5) Textbook of Tuberculosis - The Tuberculosis Association of India

by Rao K N & others (ed)
2nd Revised edition
Vikas Publishing House Pvt Ltd, 5 Ansari Road, New Delhi -110002
1980 ; 607 pg ; Price Rs. 30.00

(6) Tuberculosis Case-finding & Chemotherapy Questions and Answers

by Toman K
World Health Organization, Geneva, Switzerland
1979 ; 239 pg ; Price Rs. 15.00

(7) Tuberculosis in Children

by Miller, E J W
Churchill Livingston, Edinburgh, London, UK
1982 ; 294 pg.

JOURNALS

(1) Indian Journal of Tuberculosis

Periodicity : Quarterly
Published by : TB Association of India, Red Cross Road, New Delhi
Annual subscription : Rs. 50.00

(2) American Review of Respiratory Diseases

Official journal of the American Thoracic Society
Periodicity : Monthly
Published from : 1740 Broadway, New York, N Y 10019

(3) Tubercle - 1919

Longman Group Ltd, Journals Division, Fourth Avenue, Harlow, Essex, England

(4) Tuberculosis 1963-1977

Periodicity : Quarterly
Published by : International Union Against Tuberculosis, 3 rue Georges Ville, 375116 Paris France

ARTICLES AND RESEARCH REPORTS

(1) Summaries of National TB Institute Studies

Volume One July 1976 and Volume One July 1977 (Yearly abstracts)
Published by : National TB Institute, DGHS, 8 Bellary Road Bangalore 560003

(2) Tuberculosis Research Centre Handbook 1978

Indian Council of Medical Research Spur Tank Road, Chetput, Madras 600031

(3) Tuberculosis Prevention Trial, Madras

Indian Journal of Medical Research (special issue)
Vol 72 (suppl) July 1980
ICMR, New Delhi

(4) Domiciliary Tuberculosis Chemotherapy

Indian Journal of Medical Research (special issue) Vol 73 (suppl) April 1981
ICMR, New Delhi

(5) Problems of TB in Indian Children

by Gopal Sharan
Tropical Doctor, July 1979, pg 104-5

(6) TB - A New Thrust (article)

INDIA TODAY
November 30, 1982 : pg no 49

(7) Principles of Internal Medicine

George W & Thorn (edited)
1977 : 900 pg

(8) Tuberculosis, Male Genital Diagnosis

Journal of Indian Medical Association
January 1983

FLASH CARDS

(1) Control of TB

11 nos
English
Audio Visual Unit, CMC Hospital, Vellore - 632 004, Tamil Nadu

(2) Tuberculosis is Curable

15 nos
English & Hindi
VHAI, C-14 Community Center, SDA, New Delhi - 110016
OR Foundation for Research in Community Health, 84 A, R G Thadani Marg, Bombay 400018

FLIP CHARTS

(1) Tuberculosis Control

10 nos
Hindi
TB Association of India, 3, Red Cross Road, New Delhi 110001

SLIDES

(1) Natural History of childhood tuberculosis - the characteristics of Childhood TB"

(TbNH)
Rs 24/- (colour slides)

(2) Pathology of Tuberculosis in Childhood - Macroscopic and Microscopic

(bp)
Rs 24/- (colour slides)

(3) Tuberculosis is curable - a set of 15 slides

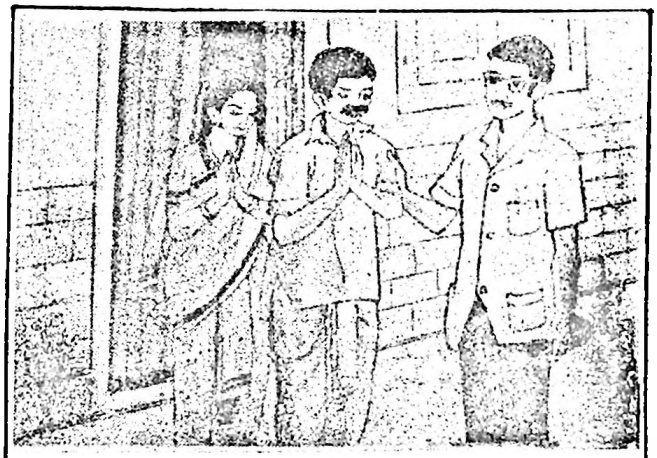
(D-81)
Rs 15/- (Black and White)

AGENDA FOR THE NATION - THE NEW 20 POINT PROGRAM

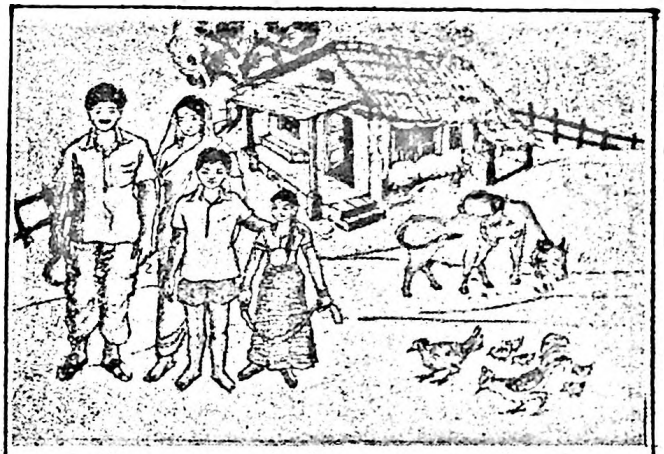
ITEM 14 - Control of TB, Leprosy and Blindness.

During the Sixth Plan period the scheme for establishment of TB centers and TB beds has been included in the state sector. Under the centrally sponsored sector, material and equipment and anti TB drugs are being supplied to the district TB centers located in states ona 50:50 sharing basis and to the TB centers located in Union Territories as 100% sponsored. Anti-TB drugs run by vo luntary bodies are being supplied as a 100% centrally sponsored scheme.

Booklet, 20 point Program



13. 18 months go by. Vithoba visits the doctor for a final checkup. The doctor is pleased and says that Vithoba is completely cured. This doctor says is because he has taken his tablets every day for 18 months. He has no cough or sputum. He has no fever. His appetite is good. He can work all day without getting tired. Vithoba knows he is cured.



14. Vithoba is glad. The children are not going to get TB. He is glad they did not have more than two children. Vithoba's doctor had told him the truth. Vithoba knew that he was alive and well now because he had taken his tablets daily for 18 months. The TB would not come back. He was happy to be able to work. The whole family is happy and healthy again.

TABLE I

TARGETS AND ACHIEVEMENTS
OF BCG VACCINATION DONE DURING
1982-83 (in Lakhs)

Sl. No.	State/UT	Target	Achievement (%)	Age-wise Performance (Years)			
				Below year	1-4	5+	Total Round
1	2	3	4	5	6	7	8
1.	Andhra Pradesh	13.0	130.6	2.84 (16.85)	9.22 (54.63)	4.81 (28.52)	16.88
2.	Assam	3.50	86.9	0.24 (7.74)	1.15 (37.80)	1.66 (54.56)	3.04
3.	Bihar	5.00	142.9	0.64 (9.0)	2.14 (30.17)	4.32 (60.83)	7.10
4.	Gujarat	12.00	99.75	7.32 (61.15)	2.56 (21.39)	2.09 (17.46)	11.97
5.	Haryana	5.00	83.8	1.18 (28.16)	1.32 (31.50)	1.69 (40.34)	4.19
6.	Himachal Pradesh	2.00	30.4	0.28 (46.55)	0.30 (49.67)	0.02 (3.78)	0.61
7.	Jammu & Kashmir	2.00	87.5	0.50 (28.57)	0.53 (30.29)	0.72 (41.14)	1.75
8.	Karnataka #	10.00	31.4	1.21 (38.48)	0.66 (21.04)	1.27 (40.48)	3.14
9.	Kerala	6.00	96.7	1.74 (30.00)	0.76 (13.10)	3.30 (56.90)	5.80
10.	Madhya Pradesh	9.00	34.6	0.74 (23.80)	1.06 (34.03)	1.31 (42.17)	3.12
11.	Maharashtra	17.00	199.6	15.20 (63.51)	7.92 (33.08)	0.82 (3.41)	23.93
12.	Manipur	0.30	40.0	0.02 (16.66)	0.05 (41.67)	0.05 (41.67)	0.12
13.	Meghalaya	0.20	114.8	0.04 (15.53)	0.08 (33.12)	0.12 (51.35)	0.23
14.	Nagaland	0.10	280.0	0.05 (19.44)	0.08 (29.69)	0.14 (50.87)	0.28
15.	Orissa	5.00	101.0	0.33 (6.51)	1.48 (29.37)	3.24 (64.12)	5.05
16.	Punjab*	6.00	73.1	1.73 (39.51)	1.95 (44.40)	0.68 (15.45)	4.39
17.	Rajasthan	8.00	54.5	0.68 (15.66)	1.30 (29.90)	2.37 (54.44)	4.36
18.	Sikkim*	0.07	169.3	0.01 (9.93)	0.02 (18.90)	0.04 (32.19)	0.12

Sl. No.	State/UT	Target	Achievement (%)	Age-wise Performance (Years)			
				Below year	1-4	5+	Total Round
1	2	3	4	5	6	7	8
19.	Tamil Nadu*	13.00	92.35	2.09 (17.39)	2.61 (21.73)	6.44 (53.62)	12.10
20.	Tripura	0.30	66.6	0.02 (10.32)	0.05 (24.18)	0.13 (65.50)	0.20
21.	Uttar Pradesh	18.00	131.1	1.83 (7.77)	3.33 (14.09)	18.44 (78.14)	23.60
22.	West Bengal	12.00	34.0	0.31 (7.61)	0.92 (22.50)	2.86 (69.80)	4.09
23.	A & N Islands	0.02	163.5	0.02 (54.39)	0.01 (30.08)	0.005 (15.53)	0.03
24.	Arunachal Pradesh	0.05	131.6	0.01 (15.42)	0.03 (51.86)	0.02 (32.72)	0.06
25.	Chandigarh	0.15	126.6	0.09 (46.77)	0.03 (15.0)	0.07 (38.23)	0.19
26.	D & N Haveli	0.02	132.6	0.01 (38.22)	0.02 (55.86)	0.001 (5.92)	0.03
27.	Delhi	1.8	138.3	1.71 (68.66)	0.33 (13.30)	0.36 (14.49)	2.49
28.	Goa Daman & Diu	0.20	109.0	0.16 (74.14)	0.04 (20.22)	0.01 (5.54)	0.22
29.	Lakshadweep*	0.01	200.0	0.002 (10.00)	0.003 (15.00)	0.007 (35.00)	0.02
30.	Mizoram	0.14	61.01	0.02 (25.40)	0.04 (39.22)	0.03 (35.38)	0.10
31.	Pondicherry	0.14	116.1	0.11 (66.32)	0.04 (28.64)	0.01 (5.04)	0.16
Total :	1982-83	150.0	92.84	41.16 (29.58)	40.03 (28.76)	57.04 (41.66)	139.26
	1981-82	150.00	90.49	29.35 (21.56)	31.86 (23.62)	74.27 (54.82)	135.74
	1980-81	150.00	86.89	15.25 (11.70)	24.89 (19.10)	90.20 (69.20)	130.34

13.9 mil

\# = Data from 4/82 to 8/82 only.

* = Age wise break up not available for 2814 vaccination for Punjab 4618 for Sikkim, 862 34 for Tamil Nadu, 8836 for Delhi and 1174 for Lakshadweep figures in bracket indicate % population to total population.

TABLE II

Statement showing State/UT - wise estimated number of T.B patents.

Sl. No.	Name of State/U.T.	Estimated X-ray cases (in lacs)	Estimated Sputum cases (in lacs)
1	2	3	4
1.	Andhra Pradesh	8.05	2.00
2.	Assam	3.0	0.75
3.	Bihar	10.50	2.60
4.	Gujarat	5.10	1.25
5.	Haryana	1.95	0.50
6.	Himachal Pradesh	0.60	0.15
7.	Jammu & Kashmir	0.90	0.25
8.	Karnataka	5.55	1.40
9.	Kerala	3.80	0.95
10.	Madhya Pradesh	7.80	1.95
11.	Maharashtra	9.45	2.35
12.	Manipur	0.25	0.05
13.	Meghalaya	0.25	0.05
14.	Nagaland	0.15	0.05
15.	Orissa	4.00	1.00
16.	Punjab	2.55	0.65
17.	Rajasthan	5.10	1.25
18.	Sikkim	0.10	0.05
19.	Tamil Nadu	7.25	1.80
20.	Tripura	0.30	0.10
21.	Uttar Pradesh	16.65	4.15
22.	West Bengal	8.20	2.05
UNION TERRITORIES			
23.	A & N Islands	0.03	0.01
24.	Arunachal Pradesh	0.09	0.02
25.	Chandigarh	0.08	0.02
26.	D & N Haveli	0.02	0.005
27.	Delhi	0.90	0.22
28.	Goa Daman & Diu	0.15	0.04
29.	Lakshadweep	0.01	0.005
30.	Mizoram	0.08	0.02
31.	Pondicherry	0.08	0.02
	Total	102.94	25.71

Source : Lok Sabha Question - Answer Dec 1, 1983 no 1442

TABLE III

TREATMENT FACILITIES AVAILABLE FOR TREATMENT OF TB PATIENTS 1982

Sl. No.	Name of State Union Territories	T.B Demonstration Centres	Total No. of other TB Clinics	District T.B Centres	Number of T.B. Beds
1	2	3	4	5	6
1.	Andhra Pradesh	1	27	22	2699
2.	Assam	1	8	10	799
3.	Bihar	2	18	25	1799
4.	Gujarat	1	6	19	3388
5.	Haryana	-	6	9	275
6.	Himachal Pradesh	-	10	8	643
7.	Jammu & Kashmir	1	5	9	705
8.	Karnataka	1	5	19	3445
9.	Kerala	1	12	10	2199
10.	Madhya Pradesh	1	2	45	1699
11.	Maharashtra	1	27	26	7149
12.	Manipur	-	1	2	110
13.	Meghalaya	-	-	2	304
14.	Nagaland	-	2	1	100
15.	Orissa	1	2	13	801
16.	Punjab	1	6	10	921
17.	Rajasthan	1	2	26	2018
18.	Sikkim	-	4	1	90
19.	Tamil Nadu	1	41	15	3609
20.	Tripura	-	-	2	50
21.	Uttar Pradesh	1	20	56	3437
22.	West Bengal	1	102	16	5948
	UNION TERRITORIES				
23.	Andaman & Nicobar Islands	-	1	1	67
24.	Arunachal Pradesh	-	4	1	182
25.	Chandigarh	-	-	1	10
26.	Dadra & Nagar Haveli	-	-	-	-
27.	Delhi	1	10	1	1539
28.	Goa Daman & Diu	-	3	1	276
29.	Lakshadweep	-	-	-	-
30.	Mizoram	-	2	1	62
31.	Pondicherry	-	3	1	178
	Total	17	329	353	44502

Source : Health Statistics of India, CBHI, DGHS, 1983.

TABLE IV

Recommended dosages of Anti-Tuberculous Drugs (I.U.A.T 1982)

Drug	Action	DOSE		Adverse Reactions
		Daily Phase	Intermittent Phase	
1. I.N.H (H)	Bactericidal	5-8 mg/kg maximum 300mg	12-15 mg/kg maximum 700mg	Polyneuritis Rarely hepatitis and Psychosis
2. Rifampicin(R)	-do-	9-12 mg/kg* maximum 600mg	Same as in daily phase	Hepatitis
3. Pyrazinamide(Z)	-do-	30 mg/kg maximum 2 gm	50 mg/kg maximum 3 gm	Arthralgia
4. Streptomycin(S)	-do-	20 mg/kg maximum 1 gm	Same as in daily phase	Giddiness/ deafness
5. Ethambutol (E)	Bacterio-static	25 mg/kg for 6 weeks 15 mg/kg thereafter	40 mg/kg maximum 2 gm	Optic neuropathy
6. Thiacetazone(T)	-do-	150 mg **	-	Skin reaction and hepatitis Rarely, exfoliative Dermatitis
7. PAS (P)	-do-	5 gm B.D**	-	Anorexia vomiting Diarrhoea, etc.
8. Ethionamide/ Prothionamide (N)	-do-	250 mg**	-	Anorexia, nausea, vomiting, Diarrhoea, etc.
9. Cycloserine (C)	-do-	250 mg BD **	-	Epileptiform convulsions, Psychosis.

* Usual daily use for adults is 450 mg if the patient's weight is less than 50 kg, and 600 mg if the weight is 50 kg or above. Dose for children is adjusted suitably. In intermittent phase, usual dose for adults is 600 mg.

** Maximum adult dose. For children and under-weight adults, reduce dose proportionately.

TABLE V

Suitable Regimens for Treatment of Pulmonary Tuberculosis
(I.U.A.T 1982)

Conventional

SHT daily for 2 months plus	HT daily for	10 months	Total Duration 12 months
SHP " " " " "	HP daily for	10 months	Total Duration 12 months
SHT " " " " "	SH biweekly	10 months	Total Duration 12 months

Short-course

SHRZ for 2 months plus	RH daily for 4 months	Total Duration 6 months
SHRZ " " " "	RH biweekly for 4 months	Total Duration 6 months
EHRZ " " " "	RH daily for 4 months,	Total Duration 6 months
EHRZ " " " "	RH biweekly for 4 months	Total Duration 6 months
SHRZ " " " "	SHZ daily for 4 months	Total Duration 6 months
SHRZ " " " "	HT daily for 6 months	Total Duration 8 months
RHZE	Thrice weekly for 6 months	Total Duration 6 months
RHZS	Thrice weekly for 6 months	Total Duration 6 months

N.B : Intermittent chemotherapy should only be given under full supervision of every dose.

Source : Lectures on TB for General Practitioners - Tuberculosis Association of India.

TABLE VI

DRUG REGIMENS

Recommended in National Tuberculosis Programme

a) For sputum positive TB patients

Code No.	Drugs and Dosage	Mode and Rhythm of administration	Instructions
R 1	Isoniazid 300 mg + Thioacetazone 150 mg	Both drugs in a single dose or in two divided doses orally, daily	Self-administered at home after meal. Collected monthly from DTC/PHI
	BI WEEKLY REGIMEN		
R 2	Inj Streptomycin 0.75 g / 1 g.+ Isoniazid 600 to 700 mg (15 mg/kg body weight) with Pyridoxine 10 mg	Intramuscularly Orally	Both drugs given in the same time under supervision at DTC/ PHI twice weekly at intervals of 3 and 4 days.
R 3	Isoniazid 300 mg + PAS 10 g.	In a single dose. In two divide doses Both drugs orally daily	Self-administered at home after meal. Collected monthly from DTC/PHI
R 4	Isoniazed 300 mg + Ethambutol 20 mg/kg body weight,i.e 800 mg for pts. weighing 50 kg and 1200 mg for 50 kg	Both drugs in a single dose, daily, orally	Self-administered at home after meal. Collected monthly from DTC/PHI
	BIPHASIC REGIMEN		
R 5	a. Intensive phase Inj. Streptomycin 0.75 g/ 1 g + Isoniazid 300 mg + Thicacetazone 150 mg or Ethambuto 20 mg per kg body weight i.e.800 mg for pts. weighing 50 kg and 1200 mg for those 50 kg or PAS 10 g.	First two months Intramuscularly. daily In a single dose orally, daily. (PAS and Thioaceta-zone may be given in two divided doses)	Injection given under supervision and the rest to be self-administered at home.
	b. Continuation phase	Remaining period	
	With R1, R2, R3, or R4	As for each regimen	As for each regimen

Cont'd on next page

b) For the sputum negative TB patients (Suspect cases)

TB patients in whose sputum AFB are not seen, are prescribed Regimen R1 i.e.

Isoniazid 300 mgm + Thioacetazone 150 mgm — Single dose orally daily for 1 to 1½ years

Patients, allergic to Thioacetazone can be treated with R4

Duration of Treatment

All patients should be treated for a minimum of 1 year or optimum of 1½ years duration irrespective of their disease status. By duration of treatment for 1 year to 1½ years is meant that intensive efforts should be made to keep the patient on regular treatment for atleast one year. Even if patients at the end of one year are regular, treatment should be continued upto 18 months in order to prevent relapses.

Treatment can be continued upto 2 years after review at the end of 18 months but continuation beyond two years has no added advantage.

From: National TB Institute, BANGALORE-560 003

TABLE VII

COUNTRY'S REQUIREMENTS OF TB DRUGS (METRIC TONS)

Sl.NO.	Name of the Drug	79-80	80-81	81-82	82-83	83-84	84-85	Increase %
1.	STREPTOMYCIN	300	330	363	400	440	485	10
2.	RIFAMPICIN	5.4	7.3	9.8	13.3	18.0	24.0	5
3.	I N H	200	240	290	300	415	500	20
4.	PAS	600	630	660	700	730	770	5
5.	THIACETAZONE	40	42	44	46	48	50	5
6.	ETHAMBUTOL	60	78	101	132	170	225	30
7.	PYRAZINAMIDE	8	8.4	8.8	9.3	9.7	10.2	5

TABLE VIII

PRICES OF IMPORTS

(Rs. in lakhs)

		78-79	79-80	80-81
1.	Streptomycin	280.12	274.20	123.69
2.	INH	12.43	11.90	3.06
3.	Rifampicin	95.26	311.11	448.2
4.	Ethambutol	223.7	322.17	92.50

SOURCE : Mr. B.R. Verma, Senior Investigator, E & S Section (Drug Sector), Ministry of Chemicals and Fertilizer, Government of India, New Delhi.

TABLE IX

PRODUCTION OF TB DRUGS

		78-79	79-80	80-81
a.	Imports (Metric Tons)			
	1. Streptomycin	76.12	72.82	44.01
	2. INH	23.8	26.2	6.8
	3. Rifampicin	1.7	5.4	8.9
	4. Ethambutol	66.2	96.1	29.1
b.	Local (Metric tons - larger companies like HAL, CADILLA)			
	1. Streptomycin	220.7	220.1	227.3
	2. INH	81.72	112.53	129.20
	3. Ethambutol	10.18	23.58	24.87
c.	Small scale sector (see NOTE Below)			
	1. Streptomycin	... not produced		
	2. INH	-	41.8	150.5
	3. Ethambutol	-	0.7	10.1

SOURCE : Mr. B.R. Verma, Senior Investigator, E & S Section (Drug Sector) Ministry of Chemicals and Fertilizer, Government of India, New Delhi.

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JAIPUR (RAJASTHAN)

Milestones in Tuberculosis

TB lesions found on 3000 year old Egyptian mummies

Hippocrates (460-370 B C) Father of Medicine First described TB

1865 Jean-Antoine Villemin, French Militry Vet. Surgeon experimented transmission of TB to animals by inoculation.

1882 German Physician Robert Koch discovered TB Bacilli on April 24.

1890 Robert Koch produced Tuberculin

1895 Roentgen—X-ray of chest

1905 Koch was awarded Nobel Prize

1910 Koch died

1921 French scientists A Calmette and C Guerin discovered BCG

1944 Selman A Waksman and colleagues (USA) discovered streptomycin; Waksman received Nobel Prize in 1952

1945 PAS, INH, highly effective and cheap drugs appeared

1948 First mass vaccination campaign by Scandinavian Red Gross Society

1956 Domiciliary treatment of TB proved effective

1964 Twice weekly chemo-therapy treatment introduced

1966 Rifampicin proved excellent against TB

SOURCE: *World Health, WHO, January 1982*

Landmarks : National Tuberculosis Programme

1906 The first TB Hospital in India—in Tilaunia (near Ajmer) Rajasthan, founded by a Christion Mission.

1917 First Tuberculosis Clinic in Madras by Dr Chandrasekhara Aiyer.

1928 First Intracutaneous BCG vaccination in India by Dr A. C. Ukil—West Bengal.

1929 King George Thanks-giving Anti-TB Fund started.

1939 Tuberculosis Association of India was established.

1940 Establishment of New Delhi TB Centre (as a Model TB Clinic)

1948 Establishment of BCG Laboratory, Guindy, Madras BCG vaccination introduced in India.

1951 Mass BCG Vaccination Campaign introduced in India.

1955 National Tuberculosis Sample Survey.

1956 Establishment of Tuberculosis Chemotherapy Centre, Madras.

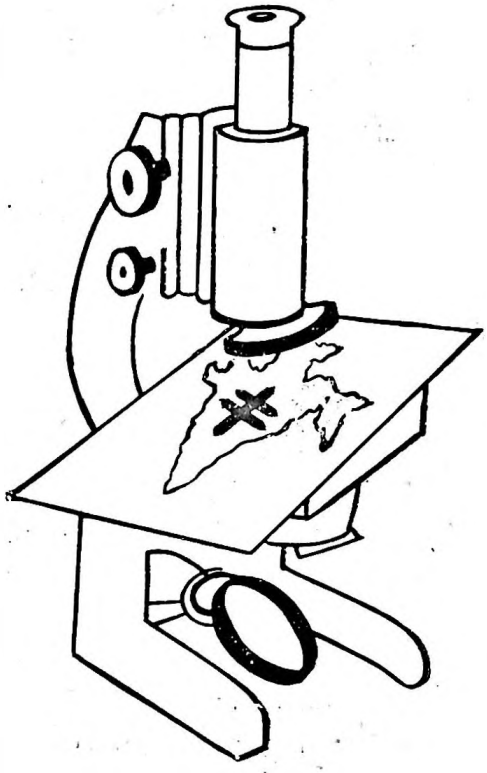
1959 Establishment of National Tuberculosis Institute (NTI), Bangalore.

1962 Evolvement of District Tuberculosis Programme at NTI and its acceptance on country-wide basis.

1975 Constitution of Expert Committee for evaluation of TB Programme.

1977 Involvement of Multi-purpose Health Workers in case-finding, treatment and BCG vaccination activities.

SOURCE : *Swasth Hind, June 1982.*



In India

600, 000 people die annually of TB

4,000,000 people are infectious

12,000,000 people suffer from TB

Nearly 50% of the children are infected by the age of 14

Nearly 90% of the population is infected by the age of 24

Nearly 60% of all Indian TB patients drop out of treatment

An untreated case has an average survival time of 2 years:
During this time he/she infects 20-25 more individuals

The central government has allotted Rs. 2 crores to fight TB

The Sixth Plan outlay is Rs. 7 crores

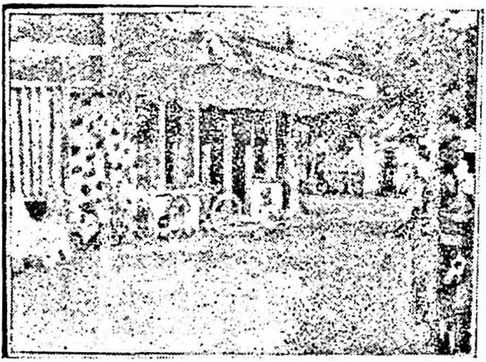
Actually, Rs. 55 crores is needed for the National TB Programme

The number of TB cases is increasing.

Noga: TB

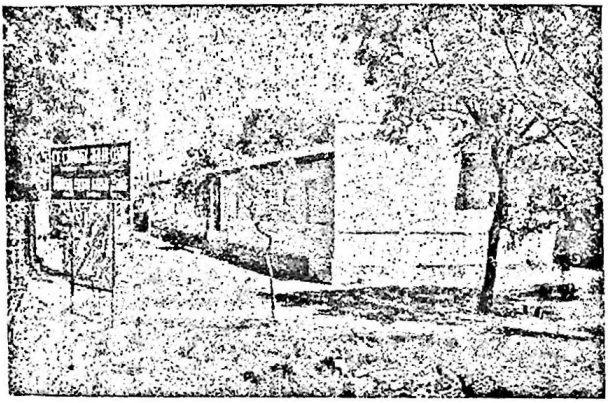
CHRISTIAN FELLOWSHIP COMMUNITY HEALTH CENTRE,

Santhipuram, Ambilikkai-624612
Dindigul Anna Dt. Tamilnadu.



Present Hospital frontage

Christian Fellowship Community Health Centre is run by a registered charitable society. It was established quarter of a century ago by a group of Indian Christian Youth at Ambilikkai, a remote village in Dindigul District where there was no medical or educational facility. It was an adventure in faith relying on God almighty to supply the needed resources. Objective is to serve the rural poor and the sick irrespective of caste, colour or creed in the sp rit of Jesus Christ and to improve the quality and life style of the oppressed and suppressed people in the area by all possible ways and hoping to achieve total development of the place so that poverty and ignorance will be wiped out.



Hospital campus in the sixties

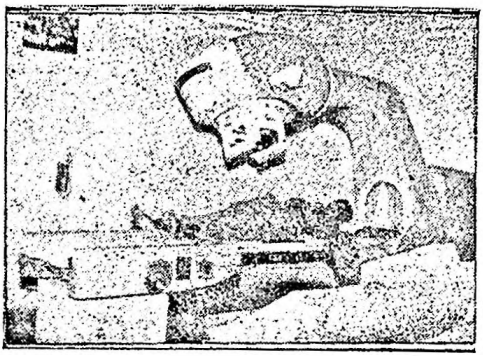
LOCATION

Ambilikkai is on the Oddanchatram-Dharapuram Road 7 Kms from Oddanchatram. It is in the low ranges of beautiful Kodai hills, about 35 km from the famous temple town of Palani. Though Ambilikkai is in the Dindigul Dt, it is surrounded by Madurai, Coimbatore & Periyar Districts of Tamil Nadu.

The C.F.C.H. Centre campus with an area of 100 acres is called Santhipuram and the medical and educational institutions are spread out on it. Most of the Staff are also given quarters in the same campus.

ACTIVITIES

Medical & Health - Main activity is the C.F.C.H. Centre Hospital with 300 beds with General medical, Surgical, Peadiatric, Obstetrics and Gynaecology, Cancer, Tuberculosis, Leprosy and Opthalmology units. 200 more beds are under construction to accommodate surgical and medical patients.

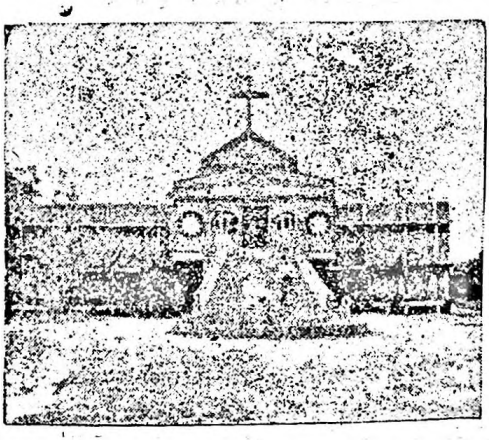


Cobalt Tele Therapy Unit

Specialists are available in the major disciplines. Basic facilities like a Ist class Laboratory Pharmacy, X-ray, diagnostic and therapy, U/S and Scopies are available to patients.

ASSOCIATED EDUCATIONAL ACTIVITIES

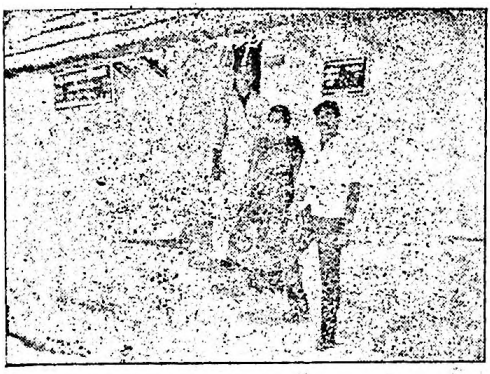
Under the Dr. MGR. Medical University, the Post Graduate diploma courses in Nutrition & Health & Development.



Health and Development Institution and School and College of Nursing

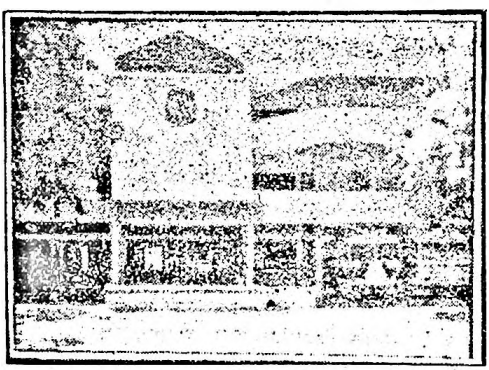
COLLEGE & SCHOOL OF NURSING

Library, Hostels, playground etc are available to students. Many young people are trained for the last 20 years in the Community Health field.



Mini Health Centre

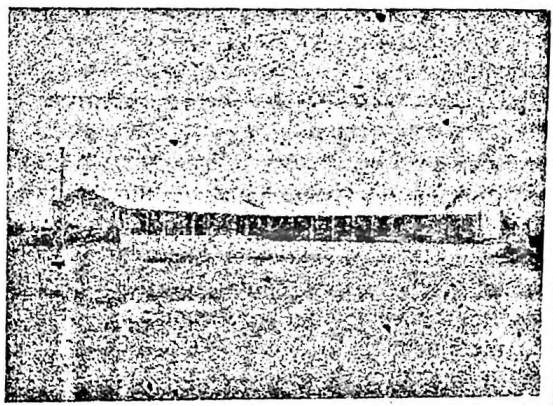
Community Health activities through the 24 mini Health centres spread over the Oddanchatram Panchayat Union area and around. C. F. C. H. C Hospital is the referal centre for these village units. Rural development programmes are integrated with the health activities. General Education in English medium is imparted through the Christian Matriculation Hr. Sec. School Oddanchatram.



Christian Matriculation Hr. Sec. School

There is a Tamil medium Shanthinikethan Hr Sec. School at Ambilikkai. Altogether about 2300 children are studying in these 2 schools. Balwadies too are run by the society in areas where no Government feeding centres are available.

TECHNICAL EDUCATION is given through the Christian Institute of Technical Education (Poly technic) and the I.T.I. More than 300 young people are getting job oriented training through these institutions and there by better opportunity for Employment is opend.



Santhinikethan Hr.Sec. School

SETTLEMENTS ARE ESTABLISHED for landless poor harijans at Bethelpuram, Siruvattukadu, C. Nagar and Karivampatty. Foundation for the Home for the aged and blind has been laid at Kallimandayam by Bro. Dhinakaran.

WITH NATIONAL PROGRAMES.

The society co-operates with all the National Health schemes like family welfare, Literacy Programme, Leprosy Eradication, Tuberculosis control Programmes for both the Government of India, and government of Tamilnadu.

VISION FOR THE FUTURE is mainly to consolidate what is established. Super speciality like cardio-thoracic surgery, urology, Nephrology, other units are in the minds of the younger members of the fellowship. Eradication of Tuberculosis, Leprosy and unemployment in this area is in the heart of the founders. 40 acres of land has been acquired for an Arts and Science College at Oddanchatram under the same society and it will soon be a reality.

STATISTICS

	1960	1992
I.M.R.	160/1000	50/1000
Leprosy privilance rate	25/1000	1.6/1000
T. B. privilance rate	35/1000	2.3/1000
Birth rate	35/1000	17/1000
Death rate	18/1000	7/1000
Immunisation rate	25%	95%
Family planning acceptors	10%	70%

LITERACY RATE

	1960	1992
Men	30	49
Women	15	35

MORAL, RELIGIOUS AND SOCIAL ACTIVITIES

Realising the fact that there is no use uplifting the community without infusing moral and spiritual values, the society has appointed a team of dedicated people to spread the good news and to save people from moral degradation drinking, smoking, dowry problems and neglect of children.

IMPROVEMENT OF WATER AND HOUSING FECILITIES OF THIS AREA

Nearly 40 check-dams and number of tube wells were made in the project area. Nearly 1500 families were helped for house construction. On the average 200 young men are helped with jobs after technical and professional trainings every year.

Our thanks to all the friends, Indian and foreign for their support and above all to God the almighty who gave the inspiration to come to this needy area and who has upheld us in all our venture, inspite of our failures. To Him be the glory for ever and ever.

HNKT, Dist.
Velagu.

ಭಾರತ್ ಚಾರಿಟೆಬಲ್ ಆಸ್ಪತ್ರೆ ,ಸರಗೂರು

BHARATH CHARITABLE HOSPITAL,SARGUR

(Sponsered by Lions Club of Sargur & B.C.CH.I.Trust)

LAB REPORT

Date

Lab No : Age : PID No :

Name Stool and Urine Complete Analysis

STOOL		URINE	
1 Colour		Colour	
2 Consistency		Appearance	
3 Reaction		Sp. Gravity	
4 Mucos		Reaction	
5 Blood		Albumin	
6 Occult blood		Sugar	
7 Reducing substance		Acetone	
		Bile Salts	
		Bile pigments	
		Uro Bilinogen	

MICROSCOPIC EXAMINATION

Pus cells	Pus cells
RBS	Epithelial cells
Ova	Bacteria
Cyst	Crystals
Larva	Casts
Amoeba	Flagellates
Flagellates	Others
Bacteria	

Pathologist - B.C.H.

Some of the 'Firsts' in Tuberculosis Control

From

THE FOUNDATION FOR RESEARCH IN COMMUNITY HEALTH

Do you Know

- Why TB has remained an intractable problem despite a nation-wide programme?
- What is happening to the large majority of patients under care in the private sector?
- How effective really are the voluntary organizations running TB Programmes?
- What is the appropriate strategy to control TB in many urban situations?

Read in reports based on in-depth, field based research studies conducted by an inter-disciplinary team of researchers for projects funded by the World Health Organization (WHO), Geneva and the International Development Research Centre (IDRC), Canada

frch

The Foundation for Research in Community Health

Tackling TB : The Search for Solutions

Mukund Uplekar, Sheela Rangan

This book is based on a research study carried out to understand why tuberculosis continues to remain an intractable problem. The approach is simple — identify all the actors and activities concerned with tuberculosis control in an area and study them closely. And study not just what is being done, how and by how many but also why! Interestingly, literature does not cite any such single study that comprehensively examines in the same setting and at the same time, every major aspect of tuberculosis control. And it is this approach which brings out from the study, not only the overt weaknesses within the various programme functions and the functionaries, but also the covert reasons of why the weaknesses have persisted throughout. The study begins with the people and ends with the people, highlighting all the man-made advantages and obstacles that advance and impede them from reaching the goal of living a life free of tuberculosis. The origins of these obstacles, by themselves, prompt solutions — short term and long term, as well as superficial and deep. Like most studies several more issues and areas for research also emerge.

- *Pages* : 200
- *Price* : Rs 100

Tuberculosis Patients and Practitioners in Private Clinics

Mukund Uplekar, Sanjay Juvekar, Sudhakar Morankar

Eighty percent of the qualified medical personnel in the country are in private sector and an estimated 60 percent of TB patients seek care at private clinics. And yet the private sector is uninvolved in the National Tuberculosis Programme. Also, virtually no pertinent information is available either on TB patients in private clinics or the private medical practitioners who manage them. What is the help seeking pattern of TB patients in private clinics? How are they diagnosed? What treatment do they receive? Do they adhere to the treatment prescribed and to the doctors who prescribe it? And how do private doctors detect, treat and ensure adherence of lung TB patients in their clinics? This report is based on a study undertaken to seek answers to these questions hitherto unanswered.

- *Pages* : 30
- *Price* : Rs 15

Non Governmental Organisations in Tuberculosis Control in Western India

Sheela Rangan, Aditi Iyer, Sushma Jhaveri

Though the efforts of voluntary organizations in health are known and ackowledged, their role in tuberculosis control has not been well documented. This study of non governmental organisations(NGO) working in health and TB in Maharashtra and Gujarat gives an account of the extent and variety of anti-TB services provided by NGOs. The study also provides an in-depth analysis on NGO approaches to TB control and their effectiveness and discusses ways to strengthen their contribution to the national TB control efforts.

- *Pages* : 125
- *Price* : Rs 75

Urban Tuberculosis Control : Problems and Prospects

(Ed) : AK Chakraborty, Sheela Rangan, Mukund Uplekar

Communicable disease control in cities poses a great challenge due to various problems peculiar to urban settings like overcrowding, multiplicity of health care providers, prominent for-profit private sector, and migrant populations. All these, compounded by the recent emergence and rapid rise of HIV in cities, complicate further the scenario of tuberculosis control in urban areas. This book, the first compilation on the subject, puts together useful material of high practical relevance. Tuberculosis experts including programme planners and managers, researchers, representatives of voluntary organizations and private medical practitioners present their analyses of the situation based on ground realities, experiments and actual experiences — past and present — in urban settings as diverse as Delhi, Bombay, Bangalore and Hyderabad. Several pointers that emerge from the discussions form the elements of a cohesive strategy for tuberculosis control in urban areas.

- *Pages* : 150
- *Price* : Rs 75

Tuberculosis Management in Everyday Practice

This booklet presents in a simple and clear manner what every practicing doctor ought to follow in diagnosing, treating and curing patients of tuberculosis. All aspects of pulmonary TB are touched upon including emerging problems like multi-drug resistance and HIV-TB association, as well as facilities available under the National Tuberculosis Programme, lists of NGOs offering anti-TB services and periodicals and books for further reference. The information provided herein is a compilation of well-researched, nationally and internationally recognized and recommended facts. For various reasons, many of these are either not known to doctors or not put into practice.

- *Pages* : 75
- *Price* : Rs 50

About FRCH

The Foundation for Research in Community Health (FRCH) was established in 1975. It is a non-profit, voluntary organization which carries out research and conducts field studies to gain a better understanding of the socio-economic and cultural factors which affect health and health care services. FRCH's larger aim is to create a people's health movement by demystifying medicine and increasing public awareness. One of the areas of interest of the Foundation has been tuberculosis. Using TB as a window, FRCH has been trying to understand the social and operational problems plaguing the health and health care services — public, private and voluntary.

Other Publications by FRCH

- **Books / Reports**

People's Health in People's Hands : A Model for Panchayati Raj
(Ed) : NH Antia, Kavita Bhatia
Pages : 400
Price : Rs 100

Ralegan Siddhi : A Model for Village Development
Ramesh Awasthi, Dashrath Panmand
Pages : 120
Price : Rs 75

Strengthening Health Education Services : An Action Research Study
Ramesh Awasthi, Manisha Gupte et al
Pages : 175
Price : Rs 50

A Study of Supply and Use of Pharmaceuticals in Satara District
Anant Phadke, Audrey Fernandes, L Sharda et al
Pages : 150
Price : Rs 125

State Sector Health Expenditures (A Database - All India & States : 1951-85)
Ravi Duggal, Sunil Nandraj, Sahana Shetty
Pages : 250
Price : Rs 250 (for individuals)
Rs 500 (for institutions)

- **Periodicals**

FRCH Newsletter
Annual Subscription : Rs 50 (6 issues per year)

Aayushi (A Hindi/Marathi monthly for Health Workers)
Annual Subscription : Rs 90 (for Health Workers)
Rs 120 (for others)

PRISM (Panchayati Raj Interactive Systems)
A bimonthly newsletter for sharing information on Panchayati Raj
Subscription : On request

For obtaining copies of any of the above publications, contact :

The Publication Unit
The Foundation For Research
in Community Health
3/4, Trimiti-B
85, Anand Park
Pune 411 007.

(or)

The Librarian
The Foundation For Research
in Community Health
84 A, RG Thadani Marg
Worli
Bombay 400 018.

MON 9 OCT 1995

Dr PV Verghese, Ayurvedic physician
+ elder bro

1 Dr MC Verghese, Nephew
of Dr PVB

Madanapalle - Gp.

1) Pendra Rd Sanatorium,
near Nagpur - 1st Dir.

1) Near Trichur,
Mullankunnathkavu village
TB hospital, Mission
closed down.

2 Dr Francis, Govt-
TB Hospital near TVM

TUE 10 OCT 1995

ALTHROCIN PAEDIATRICS
erythromycin estolate
chewable tab., kidlab., liquid & drops

= Dr Philip Benjamin
Lutheran Hospital, Ambur
TB
TB & Leprosy

= Marlene Thomason – Nurse
(Australian) AIDS Cp

= Vasant K Bansa
Hyderabad.

Pay attention to your enemies, for they are the first to discover your mistakes.

Alembic

WED 25 OCT 1995

Dr Kelkar

EPHEDREX
& EPHEDREX-N
. cough syrup & capsules

Dr P Benjamin from
Anga Kasungu Lendra
phone: 8510391.
Requested gm to
call back before
10. am. you can
try after 10. am in
case you are unable
to call.

SJC
30. 11. 95
4. 10. pm.

I am the boss in this house and I have my wife's permission to say so.

Alembic

Call from Dr P. Benjamin

THU 26 OCT 1995

- Dr P Chandrasekaran
  Anugraha
  2nd Main, 3rd Cross
  Ganganahally B'lore 32
  (near RT Nagar)
  Tel; 3332988.
- Dr Kulbushan,
- Joseph Benjamin : compounder
  (cuttings) → : Prof of TB Health
  : epid

CINI – unknown area
beyond that – contact c.
local NGO's 1 lip
2. Medica
3 landa
South 24 Parganas are
use Standard [illegible]
from Delhi [illegible]
[illegible] – regula-
supply 14 years,
– SM [illegible] are [illegible]

DC — Zilla Panchayat

Dr Raj Kumar Khatri — IAS
Chief Executive Off.
Bellary Dist

NTI	Dr Baily
Action PIB	Daniel Malone / Kelarar
	Rayamma KIMS Thesis Malara

Volags: TB

Grams: HOSPITAL, AMBILIKKAI. Phone: 250-01553 OBC.

CHRISTIAN FELLOWSHIP COMMUNITY HEALTH CENTRE,

(Registered Charitable Society S. No. 42, of 1978 dated 17-10-78)
(I. T. 12-A, No. 6 of 21-4-79)

Santhipuram, Ambilikkai-624612, Anna Dist.

Dr. Jacob Cherian BSc; FRCS. (Ed)
MBBS., FRCS.(GI)., FICS., FACS., FIGA.
Director & Chief Surgeon.

Dr. Mrs. Mary Cherian FRCP (Ed)
MBBS., DMCW., FRCP. (GI)., BCH., (LON)
Asso. Director & Chief Physician

Date 10/12/95

Dear Dr. Thelma,

I didn't say good bye to you since my husband's older sister died on the 7th & I & Prasad had to go for the funeral at Thevalakara (45 miles away from Trivandrum) & so left the conference. I v. much wanted to attend that Asthma meeting since asthma is a very common problem. Did you learn anything new on 8th & 9th? You can send me any papers you may have about it.

I am enclosing one Brochure & News letters 93 & 94 to give you some idea about our work here since you

NGO's: TB

JN

wanted to know. Pl. visit us if you find time & come near by Madurai or Kodaikanal or Coimbatore or Palni

Enclosing statistics for TB work for 10 yrs. If you want any other details pl: let me know

With Best wishes to Mr. Narayan Iyer.

Yrs sincerely

Mary Cherian

N.B. No: of TB pts in our area is v. much reduced though no: attending the hospital is same as pts from Erode, etc a radius of 30-40 miles come here.

M. C.

STATISTICS OF CHRISTIAN FELLOWSHIP COMMUNITY HEALTH CENTRE

TB CONTROL AREA FOR LAST 10 YEARS

	1985	1995
No. of Patients in our area	303	148
% of patients who took regulated treatment	87 %	93 %
Tb Prevalence	3.2	1.2
Tb Incidence	1.6	0.5

STATISTICS OF CHRISTIAN FELLOWSHIP COMMUNITY HEALTH CENTRE- TB HOSPITAL FOR LAST 10 Yrs

Year	Out Patients	Inpatients
1985	1931	251
1986	2095	226
1987	2321	227
1988	3187	186
1989	3466	101
1990	2957	158
1991	2091	139
1992	2603	192
1993	1825	191
1994	2133	212

CHRISTIAN FELLOWSHIP

SHANTHIPURAM. AMBILIKKAI-624612.

CHRISTIAN FELLOWSHIP
SHANTHIPURAM
AMBILIKKAI
LOVE ONE ANOTHER

ANNUAL NEWS LETTER-1994

Dear Friends,

Christmas is again with us reminding us of God's love for each one of us. Though we see bribery, corruption, inflation, violence, degradation of moral and ethical standards all around us, and sickness, sorrow and death of loved ones and our experience, let us like the Psalmist declare His loving kindness in the morning and His faithfulness every night. Let us spend more time in prayer and studying the Word of God in the New year so that we gain strength to stand against the evils in this world.

NEWS FROM THE VARIOUS CORNERS OF OUR INSTITUTION

The main hospital work is going on well as shown by the hospital statistics for the year 1994.

GENERAL	TUBERCULOSIS	LEPROSY	CANCER
O.P 51,963	2,133	2,246	3,946
In-patients 4,103	212	575	977
Total: 56,066	2, 345	2, 821	4,923

The new Surgical block with 3 operation Theatres, a Surgical ICU and a special ward was inaugurated by the Hon'ble central Minister for social Welfare Sri. K V. THANGABALU. The Vice Chancellor of Dr. M.G.R. Medical University Dr. B.P. RAJAN, presided over the function.

The Indian Medical Council has recognised our Institution for Dip. N.B. in Family Medicine and for General Surgery. You may be knowing that Dr. Jacob Cherian has been doing Closed Mitral Valvotomy operation

rom1970 onwards. This year a new dimension was added when our visiting Cardio - Thoracic surgeon Dr. Daniel Issac and his team did V.S.D. Corrections on 2 little children.

Major Surgeries done		: 300	(Including 1. Closed Mitral Valvotomy & 2-V.S.Ds)
Minor Surgeries		: 610	
Eye Surgeries	Cataract	; 181	
	Others	: 36	

Dr. Jacob Cherian our Director received the National Award for "THE BEST EMPLOYER OF THE HANDICAPPED" for this year from the Presitdent of India on behalf of the Institution.

The O.P.D. also has been shifted to the beautiful & spacious new block, thanks to the untiring efforts of our dear "Mathachen" and those who helped him. It was dedicated by Rev. K.T. ALEXANDER at the time of the Annual Society meeting in August.

The Society meetings were held in the Christian Matriculation School this year and Dr. Prasad Cherian and Mrs. Meema Cherian were inducted as Asso. Memebers. Mr. V.T. Chandapilla and Bro. Varadharaj attended as advisors.

Our congratulations to the following staff for getting admission in C.M.C. Vellore.

Dr. Oby Cherian. for M. Ch (Urology)
Dr. Thomas Joseph for D.M. (Nephrology)
Dr. Thomas Paul for M.D. (General medicine)
Miss. Bindu Abraham for M.Sc (Nursing)

We are glad to welcome Dr. Shantha Fredrick who has joined as our Obstetrician and Gynaecologist and Dr. Jeyanthi, Dr. Cenita Sam, Dr. Mathias Arthur Dr. Prem Navaz, Dr. Sivamani & Dr. Robert Kennady who joined as Junior Doctors in 1994. We say Good bye to Dr. Sathyanarayanan who helped us for nearly 2 years. We do need a good Christian Physician, Surgeon and an Anaesthetist urgently.

RESEARCH ACTIVITIES

Dr. Rajkumar & his team have done a study on Iodine deficiency Disorders in Dindigul Anna District and discoverd an unexpected prevalance of about 30% in certain pockets of our Project area

A Cancer Cervix screening programme was launched in our project area about 4 months back and Dr. Rajkumar is doing it with the help of Dr. P. Krishnakumar our Radiotherapist and Dr. Shantha Fredrick our Gynaecologist. About 652 Pap smears have been taken so far from our area.

Many of our Docters attended various conferences and meetings during the year.

COMMMUNITY HEALTH WORK IN THE MINI HEALTH CENTRES

Are going on with the encouragement and supervision of Dr. Rajkumar, Mr. Jayaraman, Mr. Ponnusamy, & Mr. Sakthivel. The total No. of patients who attended the 24 Mini Health centres this year is 1, 74, 346.

An extensive Leprosy control programme is going on in our project area under the leadership of Mr. Santhiago.

Dr. Chandrashekaran professor of Community Medicine, Sri. Sidhartha Medical College, Tumkur gave guest lectures to our staff & Students in early December.

SOCIAL & DEVELOPMENT ACTIVITIES

This year 30 new houses were constructed and about 61 houses were repaired for the poor villagers in our area with the help of World Vision of India. The KNH. World Vision and other hostels continrue to help rural

Children as in the previous years, thanks to the dedicated service of the Wardens and Teachers.

The Leprosy Rehabilltation school and the Dairy and Agricultures projects continue to do very good work under the leadership of Mr. Abdul Abraham and Mr. Alangaram respectively.

Our CORD Press is also doing excellent work under the leadership of Dr. Selwyn Ebenezer and Mr. Immanuel Panchacharam.

EDUCATIONAL ACTIVITIES

THE TRAINING INSTITUTE with the Community Health Guide course and the University P.G. courses in Nutrition of Dietetics & in Health & Development & Rural deveolpment are running well and are enabling many to get employment in India and abroad. Miss. Annie Mathai has joined as lecturer in Nutrition and Dietetics.

THE SCHOOL & COLLEGE OF NURSING

Continues to impart excellent Nursing education under the able Leadership of Ms. Salome Kandasamy. The Number of seats have been increased to 50. Additional rooms have been added to the hostel. The results in the university examinations for the various semesters have been very good.

CHRISTIAN MATRICULATION HIGHER SECONDARY SCHOOL At Oddanchatram is at the threshold of its Silver Jubilie year. This year also we had 100% success in the Matriculation Examination and excellent results among the 1300 students in various classes.

THE SHANTHINIKETHAN
HIGHER SECONDARY SCHOOL

Hosted the annual sports for the Palani Educational District this year in a grand scale. The results in the 10th

and 12th standard examinations were very good this year also (97% pass in 10th Std and 85% pass in +2).

SPIRITUAL ACTIVITIES

The year started with a retreat for all the staff at 'Uppar Dam' Every one from ward aids to Doctors enjoyed Prof. Barnabas's exhortations.

A Pastor's conference sponsored by the All India Prayer Fellowship was held in our campus in November Dr. P.N. Kurien and 3 pastors from U. S. A. led the sessions and about 150 Pastors & Evangelists participated.

The Musical team 'Navodhaya' of FMPB enriched us with their spiritual songs, messages and skits in early December. We are grateful to Bro. Zac Punnen, Bro. C. V. Samuel, Dr. Thomas Gnanamuthu and many others who spoke in our chapel during the year.

Rev. E. Richard, Miss. A. T. Achamma, Dr. John Mr Abdul Abraham and Mr. Immanuel Panchatcharam & others continue to lead the religious work in the hospital and in the campus as a whole.

Wedding bells chimed for

Mr. John Abraham & Miss Sheeba John
Mr. Durairaj & Miss Vasanthi (Helper, MPHW Hostel)

God blessed.

Mr. John Kutty & Shiela with a baby boy
Mr. Vinod Mammen & Anies with a baby boy
Mr. Mohan & Mahadevi with a baby girl
Mr. Dhanushkodi & Ramani with a baby boy
Mr. Aron & Rita with a baby boy
Mr. Ramasamy with a baby girl(Cook, Hospital Kitchen)

On this occassion we would like to convey our heartfelt gratitude to the ALM, KNH, CBM. WORLD VISION OF INDIA, CASA and our personal friends here in India and abroad who have contributed so much to the work in this rural area.

WE WISH YOU ALL
A VERY HAPPY CHRISTMAS
AND A BLESSED AND PROSPEROUS NEW YEAR.

DR. PRASAD CHERIAN
For C. F. C. H. C & C. E. H & D
SOCIETIES
AMBILIKKAI.

30/4/96 NTP study - state level planning - Library work

(1) Growth of private vs public sector - incl. vol. sector - 1940's to 1996

1.1 Prod: of health personnel - national / state < no. of colleges / no. of graduates / graduates
doctors, nurses, LT's, HPW's, X-ray techs, SA's, pharmacists.

1.2 Their employment - govt / Pvt.

1.3 No. of hosp. beds / TB beds.

1.4 No. of Health centres / dispensaries

1.5 ? Distribution of above.

1.6 Prod: of pharmaceuticals/equip - public sector, private - national + international levels

1.7 Resources spent

(2) Resources for NTP at State level - discuss: Dr Nagaraj / Dr Vishwanath

- at State, Dist, Taluk + PHI levels - relate to pop: size / geo: need
- trained staff, liq. institutions, physical infrastr, TB diagnostics, anti TB drugs, & transport.

(3) Influence of bureaucracy, medical / professional bodies, pharmac. industry, vol. sector, legislature, media, Govt on NTP functioning

(4) Interviews - in Bangalore - (1 mth)

4.1 Mr Nair, ICORC
4.2 Dr Kulbhushan
4.3 State Govt - MO's Ass - Sec
4.4 Kar - IMA, Sec,
4.4 Kar - Ass' of GP's, Sec
4.5 Kar STBA - Sec
4.6 UHAK
4.7 DAF - K
4.8 CHC -
4.9 CED doc: / clipping service
4.10 - L.A. ques + answers
4.11 Dr Hema Reddy, DH+FWS,
4.12 Mr. Gauram Basu, Sec, H+FW
4.13 Finance,
4.14 Dr Vishweshwaraiah JD (TB) rtd
4.15 Dr Sathyanarayana
4.16. Dr Nagaraj Addl DH+FWS
4.17. Dr Vishwanath JD Planning.

4.18 State Min for Health
4.19. JD (UIP)
4.20 Accounts cum Financial Advisor
4.21 Dir. NTI
4.22 Monitoring Section NTI
4.23. Dr Ranganath, BMC, TB.
4.24 Dr Sushheela Shekar, BMC.
4.25. Visit to Shanti Nagar Range.
4.26 Visit Adugodi Mun. Hlth Centre + Neelasandra + Domlur
4.27. HOPE,
4.28. Mr. Satish Chandran
4.29. ISEC.
4.30. Mr. Lyan, retd Chief Sec.
4.31. Mr. Cecil Noronha, Chief. Sec.
4.32. Sri MN Srinivas
4.33. Dr SV Rama Rao.
4.34. CHC – RN.
– Dr CMF
4.35 Fr. Dr Ambrose Pinto

4.36. Dr GVJ Baily
4.37. Dr Chandrashekar
4.38 Dr AK Chakraborty
4.39 ~~[illegible]~~ Drug Controller
4.40. Ms Seetha
4.41. Lupin
4.42. Ciba geigy
4.43. Odeka – Belfe / Siemens :/

+

Dist. level – 4. (1) CEO, (2) ZP chairman (3) Dir. J.D H+FW (4) Parasthomma

1 mth

+

Subdist. level – Yelandur Taluk – 3 PHC, 1 PHU MO
– HD Kote Taluk – implemented PHC's – 4 – 6 ← Saragur, N. Belathur, K Belathur, Madapura
– MPW's, LT's – obs (16)
– Obs of PHC + DHFW meetings

+

Delhi

1. Dr Panda.
2. DG H+FW – ? Dr AK Mukherjee
3. DDG (TB) – Dr Mittal
4. Addl + Jt. Sec (Health) – Mr Chopra, Mr. Chauhan.
5. Dir. TRC – Dr Prabhakar, Acting Dir.] Madras
6. Dir. Med. Stores Dept, Madras] Madras
7. BCG unit
8. Drug Controller of India
9. Centre for Policy Studies.
10. Drug Procurement wing – RK puram
11.

(12) Visit STC

(13) Data on Karnataka State
SEP.
Health
Health Service Dev! — Annual Reports.
TB reports.

(14) Organize — general SEP reports.

(15) Karuna Trust — organise data
Budget / money spent on NTP annually
cost - diagnostics - capital - Microscope / room / xray plant
recurring - Salaries - LT / XT / attenders
Slides, stains, sputum cups, disposal,
films, repairs.
- records / maintenance
- transport
- salaries - HW's / Dr. / XT / LT / MPW's
- drugs
- defaulter action — Home visiting.

(16) organise data on HDK Tal
(17) .. .. .. Yel. Taluk

(18) Get permission to use library - review Lok Sabha Debates

(19) Contact Lupin / Glaxo / Siemens] IDPL
Drug Controller Karnataka.] Kar. Antibiotics + Pharmaceuticals KANPHA

(20) Collect Mysore dist - TB data.

(21) RNTP related data.

6/8/96 Tasks remaining

(1) Translations : ✓ Prahlad + father

Transliterations : ✓ Aparna.
: ✓? Anupama.
: ✗ Mallu
: ✗ XA

(2) ✓ Write to WGH & date — 7/8/96. — 1st Nov 96.
(3) ✓ Write to Hemisa & protocol.
(4) ✓ " " Gill Walt — update.
(5) " " John Porter. — & 3 mthly budget.

(6) Organise field/data — & Mallu.
Code No. + list all interviews
arrange interview sheets in Kannada + English + Tapes.
Work out basic tables — see to my objectives / hypothesis.

(7) Collect data on poverty — all India / Karnataka.
(8) Organise national NTP policy data
Annual reports of DGHS
Plan documents. — ISEC. visit ISEC & definite list + after wiping up.
NTI Bulletins — review recent ones
TAI Annual Conference / Ind J. TB.
(9) Update in TB - section
(10) Epidem. of TB in India
(11) Content of NTP — BCG.
CF - Sp. microscopy / X-ray
R -

DELHI TRIP PLANNING

(Focus on drugs issue + parliament ques./debate!) 19/8/96.

✓ Dep to Delhi Sunday

✓1. Attend AIDAN meeting Mon/Tues. 26th + 27th Aug. — Mon/Tues

✓2. Min. of Chemicals + fertilizers — Annual Reports — Shastri Bhawan — 1 day — 28/8 at VHAI [Khan MP's]

✓3. LoR. Sabha secretariat. — ques. raised in Parliament. — 1 day

4. ? SIDA

4. Companies from ẽ drugs were bought — UNICEF period Mrs Nambiar - then Chairman
- SIDA ''
- WB.
- ODA.
- ✓ WHO - ess. drugs section

5. Meet Dr Pamre / Dr S.P. Gupta / Dr Tripathy — 1 day

6. NDTC — ?

7. IMA

8. Dr Harcharan Singh. / Mr. Srinivasan / Mr. Dayal (2/8/96 at VHAI) / Dr Khatri (ext 2626) / Dr Saha

9. ✓ DDG/TB — Dr T. Varghese / Dr AK Mukherjee — 1 day

✓ Finance Ministry / Planning Commission ✗ — 1 day

✗ Drug Controller (India) - Dr P. Dasgupta, DGHS, Nirman Bhavan

World Bank ✓ WHO — 1 day

✓ Lupin / Glaxo / Siemens / Ciba Geigy / IDPL ✓ — 1 day

✓ Delhi Science Forum / NCCPAR — Amir Sengupta — 29/8. ✓

✓ NIHFW ✓ 29/8

✓ Return advance to CHAI Rs 3300/- ✓ 29/8.

Tues ✗ LRS TB Hosp.

✓ WHO - Ess Drugs Section - Burmese Dr.

? ~~Ring Doraiswamy~~ ✓ for MP contact

✓ NCAER

✓ Mr. Kealya — Tues

✓ VHAI, BBF

✗ DG S+D.

- Malini Bhattacharji.

✓ Kitab Mahal — Monday SRS Ministry + Budget Offices

✓ Udyog Bhawan

✓ NCAER

= Glaxo, IDPL, Siemens. [Ring] - Monday

✗ ? D. Banerji - Thursday

Anti TB drug situation — outline of chapter 1/4/96.

no new drug on horizon

1. Anti TB drug discovery — availability in India —
2. " " production / supply — Indian ? other countries — source
3. Source of supply to the Govt - 1962 onwards —
4. Govt policy reg. Anti TB drug production / procurement
5. Mechanisms of supply procurement, distribution at the Centre + in the States
6. Major production companies < public sector / private — Indian incl SSS + foreign agents
7. Share of the market — private / public sector.
8. Profits — margin of mark up's allowed.
9 Adequacy of prod. vs a vis needs
10 Reasons for shortages of drug supply

Hypoth

Economic interest of pharmaceutical industry.

Of those concerned c̄ drug purchasing for public sector

Obj - study drug prodn. & distn - supply system in implementn processes of NTP

- ways in c̄ pharmaceutical industry (actors / interest grps) influenced the functioning of the NTP.

- availability / distri of AT drugs.