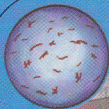




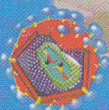
Role of Schools in TB Control



TB bacillus



Diagnosis



HIV

DOST



Partnership Project of
SAARC Tuberculosis Centre
and
Schools of Kathmandu Valley

With the direction of Dr. D. S. Bam Director, SAARC TB Centre, this Book has been prepared by Dr. P. Kumar, Deputy Director, SAARC TB Centre.

The objective of this book is to involve students to create awareness about tuberculosis disease and seek their cooperation for TB control.

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STC, Thimi**

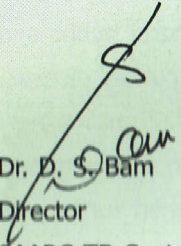
Preface

Tuberculosis still is a major public health problem in the SAARC Region. It is the time to draw attention of the general public and seek every one's co-operation to control the tuberculosis disease. 60% of our adult population is infected and about 2.5 million new TB cases occur in our Region with about 0.6-1 million deaths due to TB every year. This situation is likely to be worsened further, as epidemic of HIV/AIDS is looming large in our Region. HIV is the single largest risk factor for progression of TB.

While we have a very efficient and most cost effective intervention known as Directly Observed Treatment Short-course (DOTS) to achieve high cure in detected TB cases, we have to implement DOTS to all TB cases in order to cure them as early as possible. This will break the chain of transmission and so the possibility of further infection to healthy population. It is known that the prevention is better than cure and curing TB patient is the best method of prevention. To implement successful DOTS programme, an active participation of the community is very much essential. To involve the community we have to provide them adequate information and knowledge about TB and its control.

This document is designed to involve schools to provide basic information about TB disease and its control to the community in order to seek their co-operation to meet our objective of TB control in the Region.

We hope this publication will help school students and general public having a better understanding about Tuberculosis and strategy of its control. By creating such awareness we would be able to generate public support for implementing TB control programme effectively. This will also provide opportunity to our potential partners, to render their helping hands in our fight against Tuberculosis to make SAARC Region free from TB.


 Dr. D. S. Bam
 Director
 SAARC TB Centre

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ROLE OF SCHOOLS IN TB CONTROL A PARTNERSHIP PROJECT OF SAARC TB CENTRE (STC) AND SCHOOLS OF KATHMANDU VALLEY

Background

The increasing TB burden is a blot on the consciousness of human kind. One third of the world's population, 2 billion people, are infected with *M. tuberculosis*. Today, there are 16 million patients living with active TB. Every year 8 million new cases appear and 2 million deaths occur due to TB in the world. One third of all HIV positive people die with TB.

TB in SAARC

SAARC bears over 30 percent global TB burden. About 2.5 - 3 million new TB cases appear while as 0.6-1 million die due to TB in the Region every year. TB kills nearly 2000 people a day in South Asia. This high morbidity and mortality occurs mainly in the economically productive age group between 15-50 years and thus directly affects the economic development of the Region. It is estimated that more than 100,000 children will die needlessly from TB this year in the SAARC Region and hundreds of thousands will become TB orphans.

TB is a marker of social inequity and a serious impediment to economic development. As poverty fuels TB, so does TB bring poverty. TB is a leading killer of young adults. TB is also a foremost cause of death in women of childbearing age. One million young women die due to TB every year. Although, 95 percent of this burden falls in poor countries, in India alone, TB kills one person every minute, 300,000 children drop out from schools due to their parents illness and over 100,000 women are rejected due to TB every year in India. TB does not recognize borders and the only way to control it, is through a collective response.

TB and HIV Association

HIV is an important risk factor for the development of tuberculosis. As a result, in many areas, a parallel epidemic of TB follows the AIDS pandemic. It is estimated that in the next 3 - 5 years, 20-25 percent of cases could be directly attributed to HIV.

TB is Curable

The amazing thing is that while tuberculosis is a serious public health problem, it is completely curable through Directly Observed Treatment Short-course (DOTS). By treating infectious TB cases (that are sputum-smear positive and can therefore spread the disease to others) at the source, is also the most effective means of eliminating TB from population. However, patients who do not complete their treatment can develop multi-drug resistant TB (MDRTB), which is difficult and very expensive to treat.

Need of New Partners

A substantial period has been spent since the discovery of tuberculosis bacillus in 1882, invention of first anti-TB drug in 1944, implementation of National Tuberculosis Programme in 1960s, declaring TB as a global emergency in 1993 and introduction of DOTS. However, TB still remains a serious problem in South Asia. We can not afford to be complacent as if we continue with poorly functioning TB control programmes; we will be facing a serious problem of MDR-TB. To over come with this problem we have to implement successful DOTS programme. Our experience shows that it may not be possible to achieve desired success without new partners.

Since students are most revolutionary forces, hence role of school may be proved most crucial one. Students are in the process of learning and are capable to propagate education in their friends, families and community at large on TB and its control. Considering this potential this project has been planned.

Objectives of the project

1. Educate school children about TB disease, its control programme and seek their co-operation in TB control.
2. Built a cadre of child ambassadors committed to spreading messages of awareness about TB and its control.
3. Forge an active partnership with children in fight against TB.

Project details

Phase I:

Phase I of this project began with the Kendriya Vidyalaya Kathmandu (KVK) as pilot site. An executive committee was formulated to run the project.

Executive Committee

Chairman,	Dr. D. S. Bam, Director, SAARC TB Centre
Co-Chairman,	Mr. Thinley Dorji, Director, SAARC Secretariat
Coordinators,	Dr. P Kumar, Deputy Director, SAARC TB Centre Mr. V. Venkataraman, Principal, Kendriya Vidyalaya, Kathmandu.
Members,	Mr. C. K. Ojha and Mrs. Sangita Sapan, Teachers, Kendriya Vidyalaya, Kathmandu. Mr. P. Bhandari and Mrs. Jyoti Gautam, SAARC TB Centre

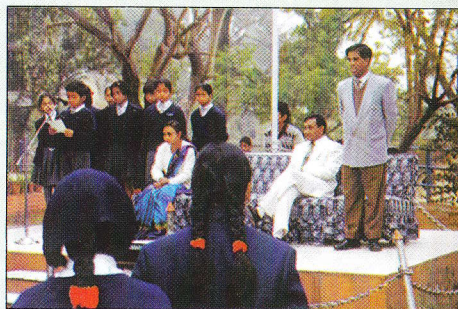
Considering its achievements and performance KVK was selected as pilot site. The coverage was aimed at co-opting other schools, initially in Kathmandu and thereafter extends beyond the valley.

The students were trained by Dr. P. Kumar and his team of STC with the cooperation of the Principal, Teachers of KVK to deliver key messages on TB and its control not only in other schools but also in community centers, newspaper offices, factories and elsewhere. The training package commences with exchanges within the school. Subsequently, discussions groups were organized with parents, teachers and other children. Thereafter, interactions planned to be organized with community centers.

In second phase more schools are being involved and competition developed in order to have a wider awareness campaign in the forms of debates, essay writing and dramatics (skits). Private sector would be encouraged to support such activities through their sponsorship. This would help generate enthusiasm, interest and widen the participation.

Progress of the project

Ninth meeting of the Governing Board of STC decided to initiate an advocacy project. Accordingly a plan of the project was prepared in order to involve some of the schools located in Kathmandu in advocacy for TB Control. The action plan of the project was finalized in consultation with Mr. Amit Das Gupta and Mr. Thinley Dorji, Directors of SAARC Secretariat. The KVK was selected as the project site in consultation with Mr. V. Venkataraman, Principal, KVK. The modalities of the project were discussed with Mr. Ojha, the teacher and the students identified for this project. A set of project plan, handouts of presentation material along with information regarding TB was provided to the Principal, Teachers and Students for the study.

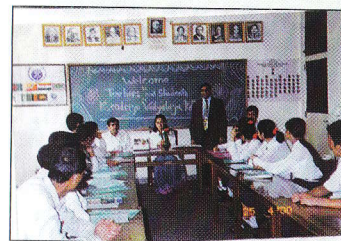
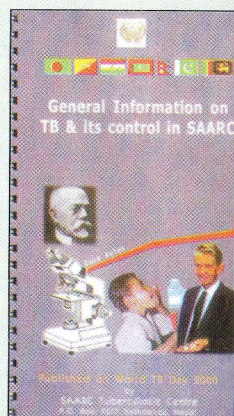
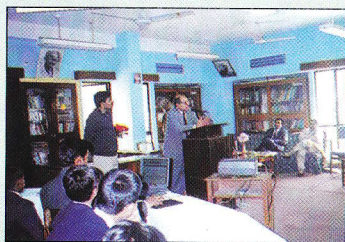


Five students delivered key messages on TB and its control on March 3, 2000 in an assembly organized in school premises.

Preparation of book-let

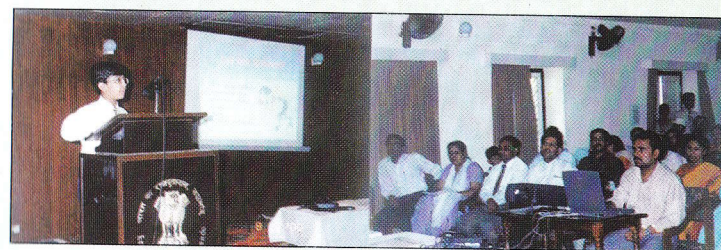
A book-let of general information on TB and its control in SAARC was prepared by Dr. P. Kumar and distributed to the students through the Principal.

On 9th March 2000, students made presentations on TB control on the basis of audio-visual material prepared by the STC in the presence of the officials of Indian Embassy, parents, Principal, teachers, students and officials of STC. Mr. Amit Das Gupta, Director, SAARC Secretariat addressed the function and encouraged students and the project team.



The teacher and students of the KVK visited SAARC TB Centre on 25th April 2000 and observed on the spot the various steps of TB Control including diagnosis and management of TB cases. They could also observe facilities available in the Centre. The 8 students - Miss Lisa Rakesh, Miss Kanika Chopra, Master Jitendra Behty, Miss Girija I, Master Nishanta Nirav, Master Amar Chhajar, Miss Archan Ojha and Master Sourav Shrestha were selected to be developed as presenters of specific topics on TB Control. A number of rehearsals were made in the school.

On 8th July 2000, a programme was organized in Indian Embassy hall where the students made presentations on TB and its control. Mr. Ashok K. Kanth, the Deputy Chief of Mission of the Indian Embassy in Nepal who is also the Chairman of School Management Committee, chaired the function. The programme was attended by a large number of parents of students of KVK, members of School Management Committee, teachers, Embassy officials and staff of SAARC TB Centre.



An Excellent performance of the students at KVK in delivery of appropriate messages on TB Control encouraged the STC to expand this programme to other schools in Kathmandu.

Phase II.

Second phase of this project began from 15th Oct. 2000 with the objective of involving more students through Nepal Anti TB Association (NATA) Kathmandu branch in this project. The first meeting in this regard was held between Mrs. Bhuwaneshwori Satyal, President, NATA and Dr. P. Kumar, Deputy Director, SAARC TB Centre in the

office of NATA Kathmandu branch, Lainchour. Mrs. Satyal appreciated the objective of the project and welcomed the suggestion of STC about her involvement in this important project. She suggested to involve five more schools.

A preliminary discussion was held with the representatives of 5 schools of Kathmandu district at Kanya Mandir Higher Secondary School, Chhetrapati.

Representative from schools

1. Nandi Madyamik Vidyalaya, Naxal - Tel. No.- 411754
Ms. Karuna Thapa - Teacher,
Kamal Dip Singh - Student IX
Sunita Thapa - Student X
2. Kanya Madir Higher Secondary School, Chhetrapati - 263960, 266492
Ms. Sushila Joshi - Teacher
Saphala Kharel - Student IX
Sugina Shakya - Student IX
3. Nava Jeewan High School, Samakhusi - 352173
Mr. Hari Bhakta Neupane - Teacher
Elina Adhikari - Student IX
Roshan Khadka - Student VIII
4. Shree Shanit Vidya Griha, Lainchour - 412099
Mr. Ramesh Kumar Gurung - Teacher
Dhruba Khatiwoda - Student VIII
Anju Timilshina - Student VIII

It was decided to involve Budhanilkantha School also after some time.

Future Plan

The trained students of KVK will help students of the five schools involved in the second phase of the project and thus a network of schools would be created.

The KVK would contact Modern Indian School, Chovar and DAV (Sushil Kediya Visho Bharati) School, Jawalakhel to involve them in this project. These schools would be spreading messages on TB Control in English Language.

Five Schools identified in coordination with NATA, Kathmandu Branch would be involved and trained to deliver messages in Nepali language in schools, industries and media offices.

The following additional activities have been planned:

Inter-school competition on Essay Writing

An inter school essay writing competition would be organized on TB Control. For this purpose the students of the schools will be divided into three groups:

Group I - Class IV - VI

Group II - Class VII - IX

Group III - Class X-XI

Two students from each group will be identified from each participating school.

Inter-school competition on Drawing

In this competition the students would draw pictures showing favorable conditions causing TB and another group would draw methods of prevention and control of TB.

Inter-school competitions on Quiz contest

A quiz competition on general information about TB and its Control would be organized.

Outcome of the Project

At the conclusion of the project we would be able to:

1. Educate School Students about TB diseases and its control.
2. We would also be able to have a group of child ambassadors for TB Control.

3. These trained students would continue to educate other colleagues in delivering messages of TB Control. This way a network for community awareness would be created to educate school students, their families and Teachers.
4. These child ambassadors would strengthen community participation and ownership in TB Control.

The project may be proved as mile stone in the TB Control in the SAARC Region.

The general information on Tuberculosis provided in following pages is for creating awareness about this disease in the community to seek their cooperation for TB control.

Every student, teacher and individual is requested to spread this information as much as possible.

"Educate community and be our partner in fight against TB"

GENERAL INFORMATION ON TUBERCULOSIS

Discovery of tuberculosis



*Robert Koch (1843-1910),
German Scientist
Discovered
Mycobacterium tuberculosis in 1882 AD*

*"If we are continually guided in this enterprise by the sprit of genuine preventive medical science. If we utilize the experience gained in conflict with other pestilence, and aim - with clear recognition of the purpose and resolute avoidance of wrong roads - at striking the evil at its roots, then the battle against tuberculosis cannot fail to have a victorious issue". - Robert Koch
- The fight against tuberculosis, 1902.*

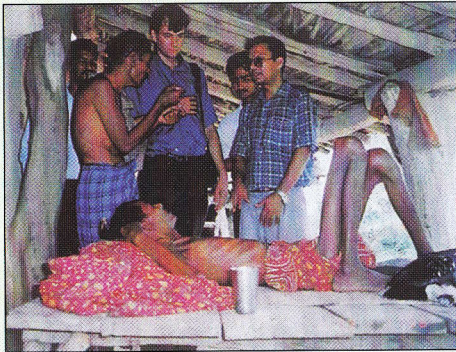
World TB Day

When Dr. Robert Koch announced his discovery of the TB bacillus on 24 March 1882 in Berlin, TB was raging through Europe and the Americas, killing one in seven people. Koch's discovery paved the way for the potential elimination of this fearsome disease.

A substantial period has been passed since that land mark discovery and many great technological developments like invention of many anti-TB drugs, implementation of principle of National TB Control Programme as well as DOTS have taken place. However, TB still is number one killer among infectious diseases and has claimed the lives of at least 200 million people since 1882. Millions more add to that total each year.

We commemorate the World TB Day on 24th March every year, all over the world in memory of the land mark discovery of TB Bacillus. This also provide us an opportunity of advocacy for mobilizing support from policy makers, National and International organizations, women groups and community at large, in order to implement National TB Control Programmes successfully.

History of Tuberculosis



TB as a killer disease, has probably been recognized since the Stone Age. Traces of tuberculosis lesions have been found in the lungs of 3000-year-old Egyptian mummies. The Greek physician Hippocrates (460-370 BC) - "the father of medicine" - wrote a description of the disease.

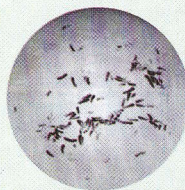
The name **tuberculosis** seems first to have been used in 1839 by Johann Schönlein. In Classic Greek times it was known as phthisis, from the verb phthinein, to waste away. Right up to the present century, it was commonly called consumption - for the same reason. But it was in the 17th century that a Dutchman, Franciscus Silvius of Leyden, first used the term "**tubercle**" to describe the knobby lesions found in the lungs of people who had died of the wasting disease.

What is Tuberculosis?

Tuberculosis is an infectious disease caused by a bacteria called *Mycobacterium tuberculosis*

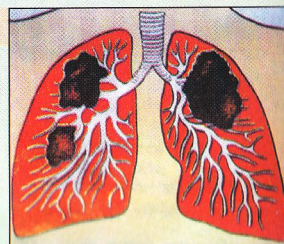
TB Bacillus

Dr. Robert Koch identified *Mycobacterium Tuberculosis* "Etiology of Tuberculosis" by isolating the TB bacillus, which is a rod shaped germ.



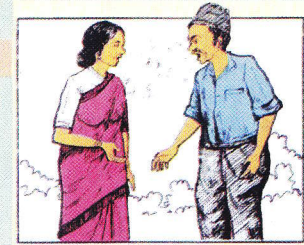
Organs affected by TB

TB affects mainly lungs. It is reported that 80% of the TB cases are pulmonary TB. But it also affects the gland, abdomen, intestine, bone & joint, skin, brain and other organs.

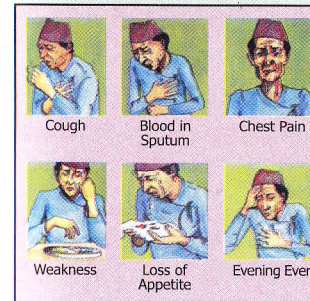


How does TB Spread?

TB spread from infected TB patient to other person by coughing, sneezing, spitting or talking. It is an air born disease.



Symptoms of Pulmonary TB



Cough more than 3 weeks, evening rise of temperature, blood stained sputum. Loss of appetite, loss of weight, chest-pain and shortness of breath are main symptoms suggestive of TB. A person who has these symptoms may have Tuberculosis.

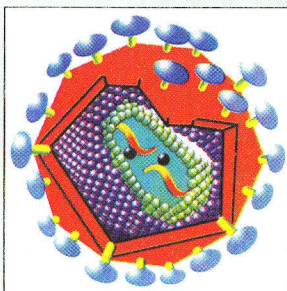
Who is vulnerable to TB?

Individuals who are at high risk of contracting and developing the disease because of their exposure to a patient with TB include:

- ◆ family and close contacts of the patients
- ◆ the elderly
- ◆ people with low income
- ◆ people with poor access to health care
- ◆ people who inject illicit drugs
- ◆ people who live or work in certain setting, such as nursing homes, prisons, shelters for the homeless or drugs treatment centres
- ◆ people who may be exposed to TB on the job, such as health care workers
- ◆ people living with HIV infection
- ◆ alcoholism
- ◆ malnutrition
- ◆ poorly controlled Diabetes Mellitus (DM)
- ◆ chronic lung diseases such as chronic bronchitis and silicosis
- ◆ heavy smokers
- ◆ cancers
- ◆ steroid therapy

HIV/AIDS

In mid 1980 the arrival of HIV (the virus that leads to AIDS) supported TB to comeback in the industrialized countries while TB was a major health problem in the developing countries. Now the co-epidemic of TB and HIV is a major problem in the world. HIV increases the risk of getting TB 30 to 50 times. At the local level, AIDS and TB programme must collaborate with each other in the areas of surveillance and provision of continuum of care involving families, communities and local health services. At the national and international level, this collaboration would also include coordinated planning, pooling of resources for HIV/AIDS and TB care, joint training as well as for the public information and education programmes. TB is now the most important, life threatening opportunistic infection associated with HIV infection.



TB and HIV/AIDS

- ◆ One-third of the world's population has already been infected with TB. If these individuals contract HIV infection, it dramatically shortens their lives by causing an acute case of TB to erupt from their previously harm less infection.
- ◆ For someone who does not have a TB infection, but has contracted HIV, exposure to the TB germ can be devastating. The patients often die within weeks.
- ◆ A healthy person who has been TB infected has less than a 10% lifetime chance of developing tuberculosis. An HIV infected person who is also infected with TB has up to 10% chance each year of developing a life threatening case of TB.
- ◆ Tragic as the AIDS/TB combination is for its victims, the TB germ is an airborne risk for the community. The only protection for the community is a fast, complete cure for TB patients.
- ◆ TB accounts for at least one-third of AIDS deaths worldwide and 40% of deaths in Asia.
- ◆ A parallel epidemic of TB is following the AIDS pandemic. This is already occurring in many developing countries, particularly in sub-Saharan Africa and Asia.
- ◆ WHO estimates that more than 7 million people, 98% of who are in the developing world are co-infected with HIV and TB.
- ◆ Of the 33 million people worldwide who were HIV positive in 1999, about one-third were believed to be infected with TB.

MDR-TB

What is MDR-TB and how it is produced?

Multi-drug-resistant (MDR) bacilli are the Mycobacterium tuberculosis bacilli which are resistant to more than one anti-tuberculosis drug, specially the two main drugs - Isoniazid and Rifampicin. MDR is currently the most severe form of bacterial resistance. MDR-TB is entirely a man made phenomenon. Drug resistant bacilli are the consequence of human error of prescription of inadequate chemotherapy, poor management of drug supply, the use of drugs of unproven bioavailability, poor case management and non compliance of treatment.

How to prevent MDR-TB?

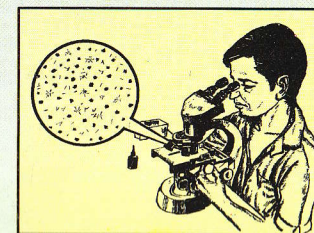
MDR is a potential obstacle to the successful treatment of TB. Where ever MDR is common; it shows the poor performance of TB control programme. Treatment failure rates are high in MDR endemic areas.

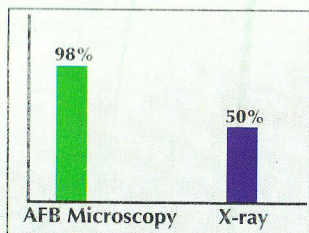
The resistance level in a given population can be reduced by the implementation of sound TB control policies and DOTS.

TB disease caused by an infection of non-MDR organisms can be cured by 6-8 months of regular treatment. But if a person is infected due to MDR-TB, it becomes very difficult with very less chances of cure. It is said that MDR-TB is 100 times more expensive to cure in comparison to non-resistant one. Some specialized drugs are available to treat MDR-TB but these are very expensive and highly toxic. Therefore, it is not possible to the NTPs of developing countries to treat large number of MDR-TB cases under the programme. The DOTS is the best way to prevent MDR-TB.

How TB can be detected?

Pulmonary TB can be detected by sputum slide examination under Microscope. Chest X-ray also helps in detection of TB of the lungs. At present, bacteriological examination of sputum is the best method of diagnosis of pulmonary TB. The smear microscopy is better method of diagnosis than X-ray because it is simple, easy to perform, less expensive and has much less inter-observer variability.

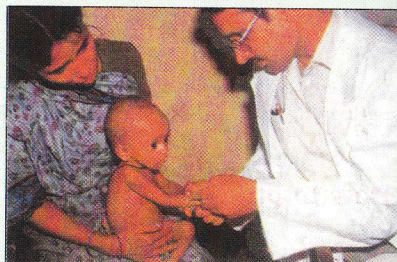




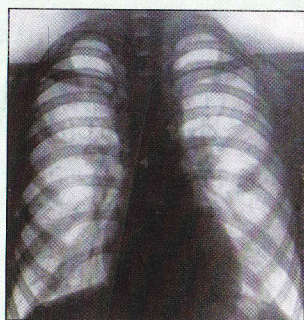
It is much more reliable and specific. It also provides information regarding bacteriological status of patients that help us to treat them on a priority basis. It is also used for follow up examinations to judge the progress of patients during the course of treatment.

Tuberculin Test

Dr. Robert Koch also used extract of TB bacilli for detection of TB. This test is known as Tuberculin Test. Its use is limited to detect TB in children below 5 years.



X-ray



Wilhelm Conrad Roentgen discovered X-ray in 1895. X-ray made possible to visualize the chest shadow caused by tubercular lesion but it needs the eye of experts to find out the valuable results.

A BCG Vaccine

Two French scientists Albert Calmette and Camille Guérin developed a vaccine against tuberculosis from an attenuated form of the bovine bacillus in 1921. BCG stands for Bacillus-Calmette-Guérin. It is the only vaccine we have for the



prevention of TB. It should be given to child at birth. BCG protects children from bacillary tuberculosis like meningial or miliary TB.

TREATMENT OF TB

How is TB disease treated?



Tuberculosis is 100% treatable and curable disease. TB drugs are available at free of cost in all government health facilities. The total duration of treatment is 6 to 8 months. Treatment should not be discontinued before completion of full course. If treatment is interrupted before completion

of full course the disease relapse with drug resistance, which is dangerous to patient and difficult to cure.

The First Anti-TB Drug

Selman A. Waksman and his colleagues, working in the USA discovered streptomycin, the first effective antibiotic drug against tuberculosis in 1944.



Available TB drugs



Isoniazid (INH), Rifampicin (RFP), Pyrazinamide (PZA), Streptomycin (SM), Ethambutol (EB) Thiacetazone (TH) are commonly used main anti-TB drugs available for treatment of tuberculosis.

National TB Control Programme

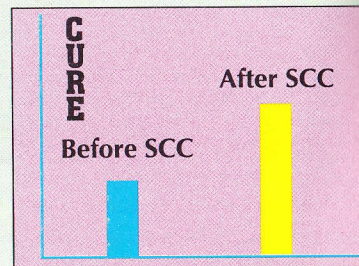
The programme run by governmental and non-governmental institutions for control of TB is called National TB Control Programme (NTP). All SAARC member countries have NTP. The main diagnosis



facilities, sputum examination by microscopy and all necessary drugs are made available at free of cost for full course of treatment to the patients under these programmes.

Chemotherapy

The Short Course Chemotherapy (SCC) is the most effective way of curing every infectious patient and preventing the spread of tuberculosis in the community. Cure is easily achieved through the use of these medicines, if these are taken as per advice of treating physician.



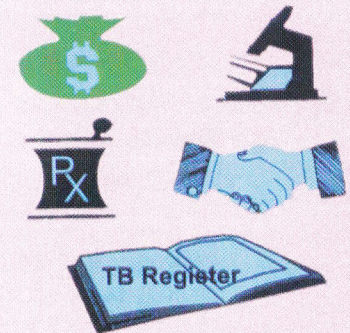
DOTS

DOTS is a abbreviation of Directly Observed Treatment Short-course, which is a new strategy to control TB by giving drugs to patients under direct observation of health workers. DOTS has been found 100 % effective to cure TB and to prevent multi-drug resistance. Only DOTS ensure cure of diagnosed TB patients. It can also prevent relapse and death. Effective treatment of TB can prolong survival of patients with AIDS. Through the general health services it can be used widely. The global targets for TB control is to cure 85% of new sputum smear-positive cases and to detect 70% of such cases. DOTS strategy has achieved these results on a programme basis in our region.



TB CONTROL: The 5 components of DOST

- ◆ Political commitment
- ◆ Diagnosis by microscopy
- ◆ Adequate supply of SCC drugs
- ◆ Directly observed treatment
- ◆ Accountability



DOTS has been shown to be the only strategy by which an 85% cure rate can be achieved on a programme basis



Modern TB Control Concept

- ⇒ TB has a cure and treatment is free of cost in TB control institutions.
- ⇒ TB control is a very cost-effective health intervention.
- ⇒ Successful treatment requires 6 - 8 months of consistent, uninterrupted medication.
- ⇒ New, drug resistant strains of TB are developing because patients are not completing their full course of treatment.
- ⇒ Drug resistant strains are significantly more dangerous to the individual and the community because they are more difficult and more expensive to treat.
- ⇒ The best way to prevent TB is to cure infectious cases in their early stages in order to prevent transmission to others.
- ⇒ Old TB control programmes were diagnosing and treating infectious patient but did not ensure that they have been cured. Therefore, they were doing more harms than good. Patients who have not completed treatment can develop - and spread drug resistant TB.
- ⇒ DOTS is answer of all these problems.
- ⇒ **We should implement DOTS as early as possible to all the TB patients.**

TUBERCULOSIS CONTROL PROGRAMMES IN SAARC MEMBER COUNTRIES

Background

Tuberculosis is the number one killer of adults in countries of SAARC furthermore TB control programme is becoming complicated due to spread of HIV/AIDS, uncontrolled urbanization, overcrowding, poverty, malnutrition and illiteracy. Simultaneously, TB control programme is expected to be seriously disadvantaged though the spread of multi-drug resistance, which may rise rapidly, if appropriate measures are not initiated urgently.

The SAARC countries have adopted DOTS to fight against TB. All member countries are implementing DOTS. As per information received from the member countries, the areas of DOTS are expanding year by year to cover more and more population under the National TB Control Programme. It is not only successful in curing tuberculosis but also one of the most cost-effective interventions in the public health programme presently available in the world.

Burden of Tuberculosis in SAARC

It is estimated that there are about 8-9 million new TB cases with 3 million deaths worldwide. It is reported that nearly 95% of TB cases and 98% of TB deaths are in developing countries. The 75% of TB cases are in the age group of 15-45 years, which is the most economically productive segment of the country. Over 30% of the world's total TB cases reside in the SAARC Member Countries. India, Bangladesh and Pakistan are among the list of high burden countries identified by World Health Organization (WHO). More males are reported having TB while as more deaths are reported among female TB patients. Altogether, TB is the biggest killer among adults. It is estimated that 2.5-3 million TB cases and 0.6-1 million TB deaths occur each year in the region. The poor socio-economic conditions and inadequate TB control measures have formed a vicious circle in the problem. Further, the multi-drug resistant TB and TB - HIV co-infection are likely to complicate the existing situation.

TB is a most opportunistic infection associated with HIV in many parts of the world including our region. TB and HIV are deadly partners, each one speeding up the progress of the other. It is estimated that total number of 33.4 million adults and children are

living with HIV/AIDS in the world. In Southeast Asia it is 6.7 million, which is second largest number after Sub-Saharan Africa. SAARC Region would face additional 1.8 million TB/HIV co-infected cases every year.

DOTS in Member Countries of SAARC

Directly Observed Treatment Short-course (DOTS) is popular strategy to combat TB now a days. It is short course chemotherapy given to the sputum positive patients under the direct supervision of the health workers. This strategy can cure more than 90% of new sputum positive cases and reduces spread of infection by breaking the chain of transmission. DOTS is most cost effective intervention available at present which can ensure high cure in detected TB patients.

The success of DOTS depends on the five components

1. Political commitment to nationwide coverage combined with effective leadership and an efficiently managed TB control programme as an integrated activity within the health care infrastructure
2. Case detection by sputum smear microscopy of patients presenting themselves at health facilities
3. Standardized short course chemotherapy under supervision of accountable health staff/person to all sputum smear positive cases of TB
4. Uninterrupted supply of standardized short course chemotherapy drugs.
5. Establishment and maintenance of a monitoring system to be used both for programme supervision and evaluation.

All the above five components of DOTS are equally essential

DOTS has proved its success in Member Countries of SAARC. Implemented DOTS areas in our region have demonstrated success rate above the target and such programmes have been appreciated all over the world. However, the current rate of DOTS implementation is slow. It appears that only Bangladesh, Bhutan, Maldives, Nepal and Sri Lanka will be able to achieve the global target by the year 2000 while as the larger populated countries India and Pakistan would be able to do so only by 2010.

Bangladesh

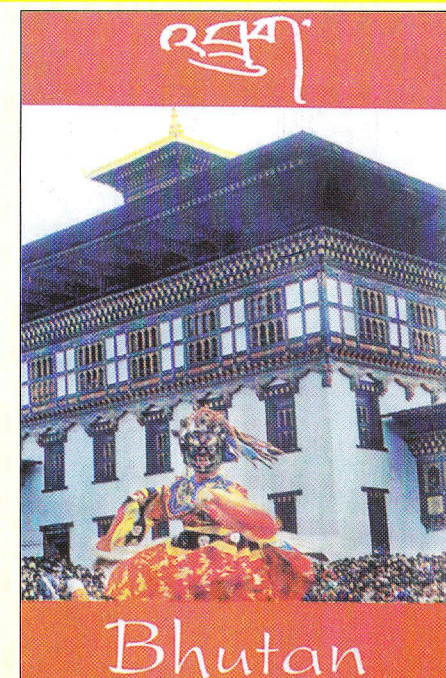
DOTS was introduced in 1993 and has now expanded to cover over 75% of the population with a treatment success rate of over 80%. The ARI of this country is 2.27%, and it is also reported that 50% of the adult population is infected. Annual incidence of sputum smear positive cases is 111/100,000 and all forms of TB is 246/100,000, annual deaths is nearly 50,000.

In this beautiful country there is an excellent cooperation with NGOs, which provide TB control services in about 1/3 of the country. In 1997, WHO described Bangladesh's TB control programme as a "model for the entire world".



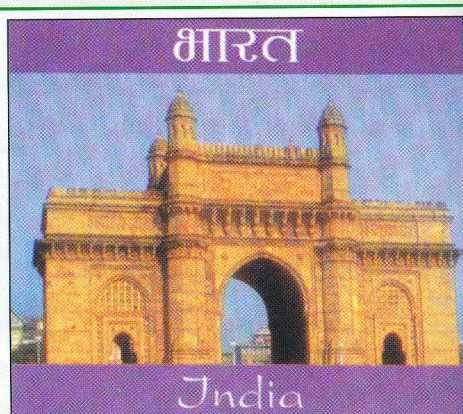
Bhutan

Bhutan is a small and very beautiful country of hilly terrain. The estimated ARI is comparatively lower than other Member Countries. It is around 1.5% and annual incidence is about 1.8/1000. The increasing proportion of sputum smear positive cases have been diagnosed in the recent years, and cure rates by using DOTS have also been improving consistently with a success rate over 90%.



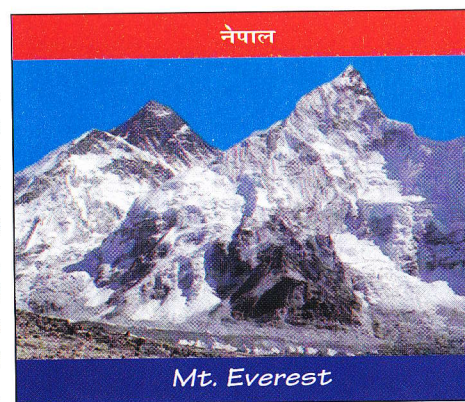
India

India has 25% load of global TB patients. The principles of DOTS had been established first in India. Now DOTS covers more than 135 million people. The cure rate is nearly 84%. The national programme plans for coverage of 271 million populations by the year 2000. To meet the target in time, most parts of the country will be prepared for DOTS implementation.



Nepal

A joint review of NTP by WHO and HMG held in 1994 revealed 30% case detection and 50% cure rate. DOTS was adopted in Nepal in 1995, the first demonstration centre was established in 1996. Presently 75% of the populations and 68 Districts have been covered. with the cure rates of 89%.



Maldives

TB has been a significant public health problem in the Maldives. There is a well-developed health care infrastructure available with free supply of anti-TB medicines, committed health staff to implement DOTS effectively. There is 100% coverage and high cure rate has achieved by DOTS among diagnosed TB cases.

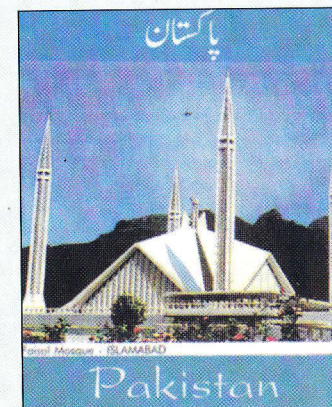


Pakistan

Tuberculosis is a major public health burden in Pakistan. The population of the country is 143 million. Globally this country ranks 5th among high burden countries. The incidence of TB is 181/100,000 where as prevalence is 405/100,000.

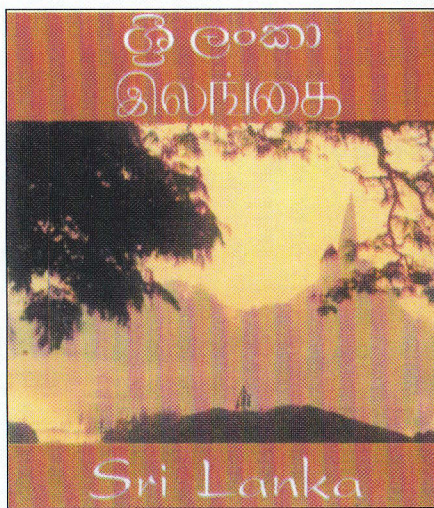
DOTS was adopted as national strategy for TB control in 1995. National technical guidelines were produced. National plan for countrywide implementation of DOTS was prepared with technical assistance of WHO. DOTS pilot sites were designed and implemented in various parts of the country.

In 1998, programme implementation decentralized to provinces and federal/provincial roles/relationship was redefined. Currently DOTS covers 10% of the population. The target is fixed to cover total population by the year 2004.



Sri Lanka

DOTS was started in Sri Lanka in 1997. First treatment under the DOTS was provided to new sputum positive cases by admitting the patients into hospitals for intensive phase in Colombo City. After that DOTS was implemented on an outpatient basis in Galle district. Now DOTS is being expanded to another areas and currently 97% population has been covered with the achievement of 85% cure rate.



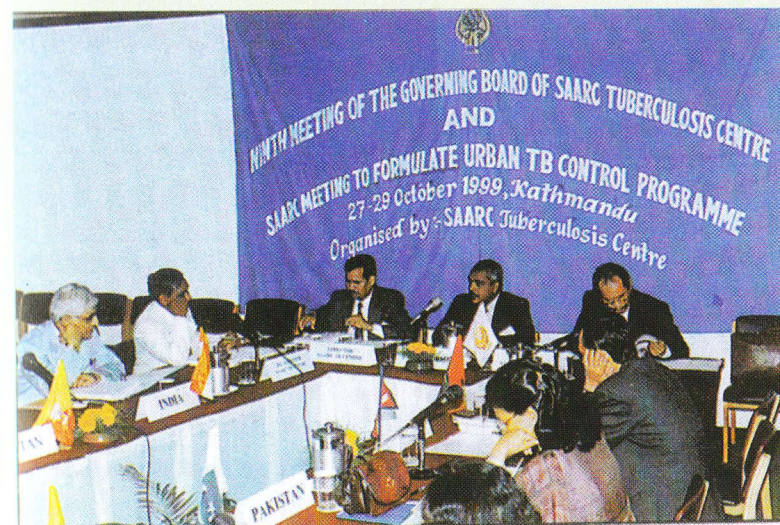
Regional Co-operation

Considering the huge burden of tuberculosis disease, SAARC has accorded a high priority to control TB and decided to establish a centre of eminence for the region, in



order to coordinate efforts of TB control programmes of the Member Countries. The centre came into existence in 1992, under the name of SAARC TB Centre and located in a beautiful valley of Kathmandu, Nepal. The centre is committed to assist the Member Countries in TB control by organizing training for trainers, workshops and seminars in priority areas. It also develop the management skills for implementation of NTPs and collect compile and disseminate the information on TB and its control. The centre also conducts and coordinates research to assist Member Countries in their efforts of TB control.

The achievements of SAARC TB Centre



SAARC TB CENTRE HAS CARRIED OUT THE FOLLOWING ACTIVITIES:

Seminars

- ⇒ Seminar on Surgical & Clinical Aspects of Tuberculosis, 22-23 December 1991, at Kathmandu.
- ⇒ Seminar on Socio-cultural aspects of Tuberculosis - December 1993
- ⇒ Seminar on TB Programme Managers of SAARC- November 1994
- ⇒ Seminar on TB Control Programme through Primary Health Care Approach in the Region - April 1995
- ⇒ Seminar on Pilot Demonstration Areas of TB Control in Member Countries - January 1997
- ⇒ Seminar on Production, Marketing/Distribution and Quality Control of anti-TB Drugs in the Region - July 1997
- ⇒ Seminar on Gender & Sociological Issues Related on TB - July 1999
- ⇒ Seminar on Compilation and Updating Advocacy and IEC Materials Relating to TB and HIV/AIDS - September 2000

Workshops

- ⇒ Workshop for Preparation of Health Education Materials to fulfil the needs of the SAARC Region - October 1995
- ⇒ Workshop on formulation of Guidelines for Co-ordination in governmental and Private Sector/NGOs Initiative of TB Control - June 1997
- ⇒ Workshop Relating to Research on TB and HIV in SAARC Region - October 1997
- ⇒ Workshop on SAARC-CIDA Co-operation on TB/HIV - March 1999
- ⇒ Workshop on operational research for TB Control in SAARC Countries - December 2000

Training

- ⇒ Training Programme for Trainers in TB Control Programme in SAARC Countries - July 1994
- ⇒ Trainers Training for District TB Control Programme in SAARC Countries - July 1995
- ⇒ Training Programme for Regional/District TB Programme Co-ordinators in SAARC Countries - July 1996
- ⇒ Training Programme for Laboratory Technicians on TB Bacteriology for SAARC Countries (organized in India) - April 1996
- ⇒ Training Programme for Strengthening IEC Activities with Special Emphasis on TB and HIV (organized in New Delhi) - February 1998
- ⇒ Training of Trainers for Tuberculosis Programme Managers in SAARC Countries (organized in Maldives) - July 1998
- ⇒ Training for TB Co-ordinators in SAARC Countries - December 1998
- ⇒ Trainers Training Course for TB Control Programme Managers (organized in Bhutan) - 12-22 June, 2000

Meeting

- ⇒ SAARC Consultative Meeting on TB and AIDS - October 1996
- ⇒ Meeting of the TB Experts for compilation of TB Control Training Manuals for SAARC Member Countries - June 1997
- ⇒ Meeting to Formulate Urban TB Control Programme - October 1999
- ⇒ Nine Meetings of the Governing Board since 1992
- ⇒ Export meeting for standardizing training curriculum in SAARC Countries - December 2000

Research

- ⇒ Member Countries have identified focal institute for research
- ⇒ Research on TB bacillus, drug sensitivity pattern in SAARC Region is in progress
- ⇒ Pilot demonstration site with suitable strategy in TB control is being developed
- ⇒ Partnership project with students, media and industries.

Collection and Dissemination of the Information

- ⇒ A resource centre (library) for TB and HIV has been developed
- ⇒ Regional TB and HIV/AIDS epidemiological data base is being established
- ⇒ Information network in Member Countries has been created
- ⇒ Directory of TB institutions and TB specialists has been prepared
- ⇒ Regular collection and dissemination of information is being done in the form of STC Newsletter, reports on workshops, meetings & seminars and materials on training and research
- ⇒ Presentation of scientific papers in international and national conferences
- ⇒ Writing articles in priorities areas relating to TB and HIV/AIDS is being written in various newspapers
- ⇒ Lectures are being delivered in different organizations, schools, offices of newspapers, industries and hospitals in order to create awareness on TB diseases and seek their cooperation in fight against TB.

Representation in International Conferences

- ⇒ Scientific sessions have been chaired and technical papers on TB and HIV have been presented in global lung congresses and IUATLD meetings held in Paris, Bangkok, Hong Kong and Dhaka, Madrid, and Florence
- ⇒ Regional situation and progress on TB control has been presented in WHO meetings held in Delhi, Bangkok and Myanmar

Activities for the year 2000

1. Trainers' Training for TB Programme Management
2. Public Awareness and Advocacy in Relation to TB and HIV
3. Workshop on Operational Research Related to TB Control in Member Countries
4. Expert Meeting for Standardizing Training Curriculum at the Level of Directors of National TB Institutes
5. Strengthening the Existing Networking with Training and Research Institutions in Member Countries.

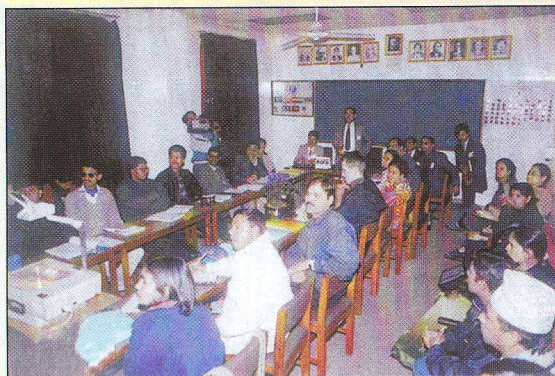
CHALLENGES FOR TB CONTROL

The common challenges

- ⇒ High burden of TB
- ⇒ Slow implementation of DOTS strategy
- ⇒ TB and HIV/AIDS co-epidemic
- ⇒ Increasing MDR-TB
- ⇒ Poor notification under NTPs
- ⇒ Unmanaged private sectors
- ⇒ Forging partnership with potential contributors like Medical Colleges, Medical Associations, Industries, Students and community at large.

OTHER PARTNERSHIP

Role of Media in TB Control



Journalists from SAARC Member Countries visited STC on 24th February 2000 in order to forge the partnership for TB control

The media is probably the most potential vehicle, which plays a key role in mobilizing public support to win over any problem, exist in the community. As a generalization, one can say that no programme would garner needed support without a visible information and educational efforts at all levels and it needs to be continuing one and this can be assisted by media very well. Considering this fact STC is in the process of making partnership with media to support our TB control efforts. Journalists from SAARC Member Countries have recently visited SAARC TB Centre on 24th Feb. 2000 and have ensured their solidarity and useful contribution in our fight against tuberculosis. Some of our articles in order to generate their support have been widely covered by media of Nepal and other member countries.

Involvement of Industries in TB Control

SAARC TB Centre (STC) and Confederation of Indian Industry (CII) have planned to mobilize the corporate sector into social activities. Since employees form the backbone of industry, their well being therefore is of prime concern. TB and HIV/AIDS can't be treated in isolation from other health and social services. Hence, STC and CII have planned to assist industry by creating a suitable system for interrupting the spread of HIV/AIDS and control of TB. An appropriate system has been designed with suitable measures to provide the right inputs and direction, for employees. The essential information, education and required services would be provided to lead and adopt safer practices for prevention of HIV/AIDS and implementation of DOTS for successful cure and control of TB.

H. E. Mr. Nihal Rodrigo, the Secretary General, SAARC had discussion with international agencies for generating support to control TB/HIV



Acknowledgment

We sincerely acknowledge the valuable contribution of Mr. Thinley Dorji and Mr. Amit Das Gupta, Directors, SAARC Secretariat for their guidance and encouragement for preparing this booklet. We acknowledge the support of Indian Embassy, Kathmandu, Mr. V. Venkataraman, principal, teachers and students of KVK. We also acknowledge the support of Mrs. Bhuwaneshwori Satyal, President, NATA, Kathmandu branch, principals, teachers and students of the five schools included in the II phase. We also acknowledge the contributions of following authors and institutions for the materials taken from their valued publications in order to prepare this booklet.

- ⇒ SAARC Publications - A SAARC Mosaic, Published by SAARC Secretariat in 1999
- ⇒ NTP Nepal Publications - Ten Steps of DOTS, Health Education on TB
- ⇒ WHO Publications - WHO report on the Tuberculosis epidemic, 1995, WHO magazine 46th, No. 4, year 1993, Stopping Tuberculosis
- ⇒ TB Control, India - Atlas on steps on NTP; TB Association of India
- ⇒ Grewal & Bhatia - Understanding AIDS, a textbook.

A P P E A L

KINDLY JOIN US

IN OUR FIGHT AGAINST TUBERCULOSIS,

IN ORDER TO MAKE OUR REGION

AND THE WORLD

FREE FROM TB

SAARC TB CENTRE

Appeal

Dear students,

You are the most potential
force of the community.

Join us to fight out TB
from our humanity

SAARC TB Centre



**Stop
TB**



**Use
dots**