SAARC

STC Newsletter

Vol. XIII No. 1 January-June 2003

(H.E. Mr. Q.A.M.A. Rahim, Secretary General, SAARC delivering his inaugural speech on the occasion of World TB Day 2003)

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STC Newsletter is a regular publication of SAARC TB Centre, It includes reports on activities, decisions of important meetings of the Centre and recent information on tuberculosis and its control

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SAARC TB Centre Newsletter

Vol. XIII, No. 1 January-June 2003

From the Editorial Desk

The first issue of the STC Newsletter of 2003 has been modified slightly to make it more clear on its mission. To make the Newsletter more edifying, we have included the TB control Programme Managers from the Member Countries in Editorial Board as Members.

From the first quarter of this year, STC has recruited an experienced and dynamic Deputy Director to look after all technical activities of the Centre under the supervision of the Director. The Centre has recharged its strength having an energetic executive. We are highly grateful to Appointment Committee and Government of Pakistan for providing us such an energetic manpower.

The Centre possesses skilled and efficient three professionals from Bangladesh, Nepal, and Sri Lanka in different cadre. They provide their invaluable contributions in every activity of the Centre to make the achievements up to the desired level.

The activities performed under the SAARC-Canada Regional TB and HIV/AIDS Project are highly appreciated. In every newsletter the professionals provide their inputs regarding the information about TB, TB & HIV/AIDS and TB HIV Co-infection in the SAARC region.

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Report on Activities:

World TB Day 2003

(Joint function organized in BICC, Kathmandu)

Theme: **People with TB**
Slogan: **"DOTS cured me –it will cure you too!"**

SAARC TB Centre is commemorating 24th March as a World TB Day every year as an international day. This year the day has been observed with various activities designed to move forward public awareness and momentum gain about TB and its control in the community through out the SAARC region. The theme of the day was –*"People with TB"* and the slogan was *"DOTS cured me – it will cure you too"*.

TB programme managers, world wide make use of this day as a platform to disseminate the messages for fighting against TB as well as promoting the control activities by creating public awareness which is considered as the most influencing factor in public health programme.

Activities:

On March 23, 2003 STC organized a programme of displaying banners. Attractive colourful banners with slogans related to TB and its control and information about DOTS were displayed at different prominent places of the Kathmandu valley.

On March 24, 2003, SAARC TB Centre and National TB Centre organized a special programme jointly with WHO, JICA, DFID, NATA and other I/NGOs working in the field of TB control at Birendra International Convention Centre (BICC).

On the same day the electronic and printing media broadcast and covered the messages of the different dignitaries along with the message of the STC Director for the people of the region.

Information on TB control status of Member Countries, TB, HIV/AIDS, TB-HIV co-infection

and posters of different activities of SAARC TB Centre were displayed at the BICC located at the central part of the Kathamndu valley on March 24, 2003. Large number of people observed this display.

On the same day a function was organized jointly by SAARC TB Centre (STC), National TB Centre (NTC), Japan International Cooperation Agency (JICA), Department for International Development (DFID), World Health Organization (WHO) and Nepal Anti-TB Association (NATA) at the auditorium of the BICC. Different activities were held to mark the day successfully.

The function started at 2.45 PM under the chairmanship of Hon'ble Prof. Dr. Upendra Devkota, Minister for Health, HMG Nepal. Rt. Hon'ble Mr. Lokendra Bahadur Chand, Prime Minister of Nepal, inaugurated the function as the Chief Guest. On behalf of the organizing committee Dr. D. S. Bam, Director, STC presented badge of the function " DOTS cured me, it will cure you too!" to the Chairman and Chief Guest of the function. Mr. Mahendra Nath Aryal, Secretary for Health, delivered the welcome speech. After the welcome speech, Rt. Hon'ble Prime Minister inaugurated the programme by lighting the oil lamp and delivered his inaugural speech.

A video clip on TB control was displayed by switching the video by the chairman. Dr. D. S. Bam presented the success story of TB control programme in Nepal.

A cured child, a cured woman, a volunteer and chairman of one of the DOTS committee also shared their experiences during the involvement with TB programme.

The chairman of the programme distributed ***Rana Samundra Bam awards*** and ***Dixa Daxa awards*** to different personalities for their remarkable contributions in the field of TB control. After completion of the prize distributing ceremony the chairman released the publications of STC and NTC.

In the function, NATA Central Chairman, Mr. DB Pradhan, Advisor, DFID Dr. Micheal O'dwyer, WR Nepal, Dr. Klaus Wagner, His Excellency Mr. Zenji Kaminaga, the Ambassador of Japan and His Excellency Mr. Q. A. M. A. Rahim, Secretary General, SAARC addressed the gathering.

The chairman delivered his speech highlighting the importance of awareness and advocacy in the field of TB control with congratulations to the award and prizewinners.

The vote of thanks was delivered by Dr. L. R. Pathak, Director General, Department of Health Services. ◆

(The Chairman of the joint function releasing the publications of STC)

JSC Meeting on SAARC-Canada Regional TB and HIV/AIDS Project

The 3rd meeting of the Joint Steering Committee (JSC) held at SAARC Secretariat under the chairmanship of His Excellency Mr. Q. A. M. A. Rahim, Secretary General, SAARC on 11 March 2003.

Dr Donald Sutherland, Senior Director, Scientific Affairs, Health Canada, Ms. Carla Hogun Rufelds, First Secretary (Development) and Consul, Canadian Cooperation Office (CCO), Kathmandu, Ms. Jacinthe Desmarais, Manager, International Projects of Health Canada and Mr. Paul Alexander, Epidemiologist, attended the meeting from Health Canada.

From SAARC, H. E. Mr. Rahim, Mr. Ahmed Sareer, Director, Social Affairs Division and Mr. Kumar Shrestha, Senior Officer participated in the meeting.

Simultaneously, Dr. D. S. Bam, Director, Dr. B. P. Rijal, Microbilogist, Dr. Md. M. Rahman, Epidemiologist, Dr. Mallika Samaratunga, Research Officer from SAARC TB Centre attended the meeting.

Dr. D. S. Bam made a detailed presentation on the activities carried out by the project during 2002-03 and also on those planned for the year 2003-04. Detailed discussions on the planed activities and achievements were held after the presentation.

The Joint Steering Committee (JSC) is the key governance structure for strategic direction and oversight of the project. It serves as the formal body through CIDA, SAARC and Health Canada to review the progress of the project, provide advice and facilitate implementation of project's activities. The JSC meets no less frequently than once a year. The minutes of these meetings are circulated promptly to all partners. The SAARC Secretary General chairs the JSC meeting.

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Meeting between SAARC TB Centre(STC) and WHO/SEARO

In accordance with the MoU between STC and WHO/SEARO a meeting was held in New Delhi on May 8, 2003 to explore the possible areas of mutual cooperation in the field of TB and HIV/AIDS control in the region.

The meeting was attended by Dr. J. P. Narain, Coordinator HIV, TB and other communicable diseases, (who chaired the meeting). Dr. Nani Nair, Short-term Professional for TB control, Dr. M. P. Verma, Short-term Consultant for TB and HIV, Ms. L. Supsaeng, Short-term consultant for HIV/AIDS and Dr. Ying Ru-Lo, Medical Officer, HIV/AIDS from WHO/SEARO and from STC Dr. Rano Mal Piryani, Deputy Director, Dr. Md. Mojibur Rahman, Epidemiologist and Mr. Paul Alexander, Epidemiologist, Health Canada.

During the meeting, the participants from both the organizations presented papers on situation and work plan for the control of TB and HIV/AIDS in the region. A brain storming session was held to identify the areas of mutual interest, comparative advantages and possible areas of collaboration. The meeting identified the following areas for possible collaboration in control of TB and HIV/AIDS in the region:

- Strategic information/networking and surveillance
- Operational research
- Training/meeting/consultations/conferences
- Monitoring mission
- Advocacy
- Quality assurance in lab diagnosis and other (lab) related issues.

The meeting also agreed to explore the possibility of having a joint session at the upcoming IUATLD conference. The meeting also suggested for a separate meeting with Gabrielle Ross, Regional Advisor for Gender and Women's Health to discuss on TB and Gender, which was held on the following day morning.

The meeting concluded with an agreement that WHO/SEARO and STC would continue to work closely in areas identified and strengthen their collaborative efforts for control of TB and prevention of HIV in the region. The delegation from STC thanked the chair and other participants for their kind cooperation.

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Meeting between SAARC TB Centre and UNAIDS-ICTSA held

A meeting was held between STC and UNAIDS Inter Country Team for South Asia (UNAIDS-ICTSA) in New Delhi on May 9, 2003. The objective of the meeting was to explore the possible areas of mutual cooperation.

The meeting was attended by Dr. Rano Mal Piryani Deputy Director, Dr. Md. Mojibur Rahman, Epidemiologist from STC, Mr. Paul Alexander, Epidemiologist from HC, Dr. Emelia Timpo and Ms. V. R. Ganesh from UNAIDS-ICTSA.

In the meeting a brief presentation on STC and SAARC-Canada regional project on TB and HIV/AIDS was made by Dr. Rahman. Dr. Rano

Mal Piryani informed the meeting about the upcoming workshop of nodal officers in STC. Similarly, Ms. Vidhya Ganesh made a presentation on South Asia HIV database by highlighting the objectives of South Asia Political Advocacy Project (SAPA).

The key issues that emerged from the meeting were:

- While UNAIDS-ICTSA has a comparative advantage in technical areas, the STC is best placed to advocate for greater political commitment through the SAARC Secretariat and facilitate co-ordination and networking between member countries through the SAARC forum.
- The role and responsibilities of Nodal Officers designated by member countries of SAARC must be carefully defined for them to contribute effectively to implementing TB, HIV/AIDS control, care and prevention programmes and TB/HIV interventions at country level.

The meeting concluded with an agreement that UNAIDS-ICTSA and STC would continue to work closely in HIV/AIDS database development and exchange of data information and other related activities where the work of each would be complementary in providing support within the region.

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STC Microbiologist took part in Laboratory Assessment Mission to Pakistan

At the invitation of NTP Pakistan a mission comprising members from Stop TB Department, WHO Geneva, Royal Netherlands TB Association, National TB Institute Yemen, Ojha Institute of Tuberculosis Karachi reviewed the laboratory services of NTP Pakistan from 20 to 30 April 2003.

The mission overviewed and assessed the current situation of TB laboratory, analyzed the need and provision of TB laboratory and evaluated the implementation of quality assurance system for the TB lab.

After observing the NTP laboratories the mission provided recommendations to strengthen the TB laboratories network for DOTS in Pakistan.

Dr. Basista Prasad Rijal, Microbiologist, STC attended this mission as an observer. The mission was lead by Dr. Sang Joe Kim, TB Strategy and Operations, Stop TB, WHO.

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A Tribute to Dr. Penjor

We expressed profound grief at the passing away of Dr. Tenzin Penjor, our respected Member of Governing Board of SAARC Tuberculosis Centre from Bhutan. His death has caused a grievous loss in the field of TB control. His contribution to the SAARC TB Centre is always remarkable.

We conveyed our heartfelt condolence to the bereaved family at this moment of immeasurable grief.
We pray to the Almighty God for eternal peace to the departed soul.

STC Participated in South Asia High Level Conference on Accelerating the Momentum in the Fight Against HIV/AIDS in South Asia

His Majesty's Government of Nepal hosted a high level conference on accelerating the momentum in the fight against HIV/AIDS in South Asia was held in Kathmandu from 3 to 4 February 2003. The conference was jointly organized by UNICEF Regional Office for South Asia (ROSA) and the Secretariat of the Joint United Nations Programme on HIV/AIDS (UNAIDS).

STC Director and professionals took part in this conference and H. E. Mr. Q. A. M. A. Rahim, Secretary General, SAARC delivered his opening statement on behalf of SAARC. In his opening statement H. E. said, although the HIV/AIDS prevalence rate was still low in the region, it was known to have one of the most rapidly growing epidemics globally. "With every SAARC nation reporting infections today, HIV/AIDS has already become a regional problem" he added.

In continuation to the opening statement H. E. also added that the HIV/AIDS situation was further aggravated by very high prevalence of tuberculosis in the region. Drawing the attention of the participants he explained unholy partnership of TB with HIV/AIDS.

Highlighting the activity to combat the challenges posed by TB and TB HIV/AIDS in the region, he mentioned about the SAARC project with the assistance of the Canadian International Development Agency (CIDA), which was aimed at addressing TB, HIV and TB-HIV co-infection in the region. "The SAARC-Canada Regional Project is also aimed at enhancing the capacity of STC, which is functioning since 1992 in Kathmandu, to coordinate the joint efforts of the SAARC countries meeting the challenge of the combined toll of TB and HIV/AIDS", he added.

Recalling one of the declarations of the Eleventh Summit held in Kathmandu in January last year, he mentioned that the Heads of State/Government of SAARC Countries had emphasized the importance of evolving a regional strategy to combat the debilitating and widespread impact of HIV/AIDS, TB and other communicable diseases in the region.

About the collaborative work H. E. highlighted the SAARC–WHO MOU through which a collaborative arrangement between STC and WHO has been established towards the control of deadly epidemics including HIV/AIDS, and declaration of STC as a WHO collaborating center on the subject.

In conclusion he expressed deep appreciation to HMG Nepal and UNICEF for bringing together not only high-level decision makers including Ministers, but also parliamentarians, faith-based leaders, representatives of civil society organizations and young people from the region for a common cause. He also expressed his wish for every success of the conference.

The Conference was participated by the National delegations comprising Ministers, Parliamentarians, faith-based leaders and young people as well as representatives from the National HIV/AIDS programmes, networks of people living with AIDS, civil society organizations and the media from Afghanistan, Bangladesh, Bhutan, India, Nepal, Pakistan, Maldives and Sri Lanka. The representatives of UN agencies, bilateral donors and international NGOs and SAARC TB Centre also attended the conference. The conference was facilitated by the resource persons from Africa and South East Asia.

Dr. D. S. Bam, Director, STC and Mr. Ahmed Sareer, then Director, SAARC Secretariat were nominated as members of drafting committee formed in said conference. They put light on the important issue of TB-HIV/AIDS co-infection in the region. To handle this problem STC will be the focal point resolved by the committee.

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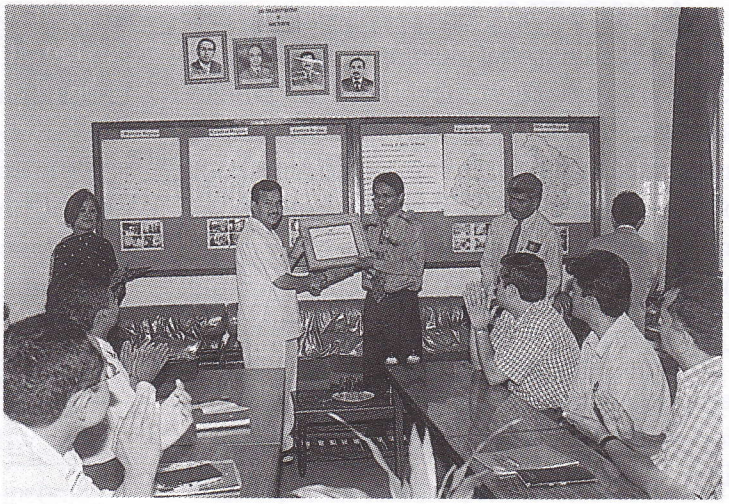
Information Source:

Proceedings of the South Asia High Level Conference: Accelerating the momentum in the fight against HIV/AIDS in South Asia

Goodbye to Mr. Sareer:



In the honour of Mr. Ahmed Sareer, Director, SAARC Secretariat from Maldives a farewell function was organized at SAARC Tuberculosis Centre (STC) on June 4, 2003. Mr. Sareer returned to his home country after completion of his tenure at the SAARC Secretariat. He associated with STC as a member of governing board and a representative of SAARC Secretariat to STC. His commendable work facilitated the STC to climb to its present day status as a Centre of excellence & WHO collaborating center. He has provided a remarkable contribution in performing the activities of the CIDA funded project on TB and HIV/AIDS.

In the function, Dr. D. S. Bam, Director, Dr. Rano Mal, Deputy, Director, all Professionals as well as General Services Staff bid farewell to Mr. Sareer, with gratitude.

DIRECTOR, STC HONOURED WITH BHARAT JYOTI AWARDS

International Institute of Success Awareness (IISA) of India conferred "Bharat Jyoti Awards" to **Dr. Dirgh Singh Bam**, Director STC for his outstanding contribution in the field of TB control in the region on Wednesday 22 January 2003. Dr. Bam has been working in STC since its establishment in Kathmandu. The contents of the certificate received by Dr. Bam are as follows:

IISA
Certificate of Excellence
Presented to
DR.DIRGH SINGH BAM
(As Doctor of the Millennium)
For outstanding Services,
Achievements and Contribution in the field of Medicine
By
Shri Deep Chand Bandhu
Hon'ble Minister for Industries (Govt. of Delhi) at New Delhi on 22nd Jan. 03.

Gurpreet Singh
(Executive Director)

STC participated in UNAIDS ICTSA, Reference Group Meeting held in New Delhi, June 19-20, 2003

At the second regional meeting of the UNAIDS ICTSA database centers held in Dhaka, Bangladesh from 12-14 May 2003, it was recommended that the database coordinators come together as a reference group to coordinate and provide technical support to each other during the process of analysis and report writing. UNAIDS New Delhi, extended information to STC to be a part of this reference group. STC participated in reference group meeting held in New Delhi, India from June 19 – 20, 2003. The discussion was focused on the following issues:

- Possible structure of the report to be adopted by all centers
- Agree on common minimum key indicators that will be used for analysis and develop a uniform process of aggregation of age group, geo locations, gender, study subjects.
- Linkages with national programmes and sustainability
- Estimation of additional technical assistance needed by the database centers for analysis and report preparation.

The participants from India, Sri Lanka and Pakistan provided draft structures and linkages with national programmes.

Dr. Rano Mal Piryani, Deputy Director and Dr. Md. Mojibur Rahman, Epidemiologist participated from SAARC TB Centre and Dr. Nihal Singh, WHO/SEARO joined the meeting. All provided extremely useful inputs during discussions.

Partnership programme with Medical Colleges and Private Sector

Under the partnership programme of SAARC TB Centre(STC) with Medical Colleges and Private Sector on TB control programme, Dr. D. S. Bam, Director and Dr. Rano Mal Piryani, Deputy Director, STC participated in the seminar on involvement of medical colleges in TB control programme, held at BP Koirala Institute for Health Sciences, Dharan, Sunsari on 25 June 2003. Papers on TB control programme and DOTS strategy in Nepal and Global and Regional Situation of Tuberculosis and Impact of HIV on Epidemiology of TB were presented by Dr. Bam and Dr. Piryani respectively.

In the evening, Director and Deputy Director presented papers in the public private partnership programme in TB control organized by NTP, Nepal and NATA, Morang. They also participated in the interaction session with private practitioners, health workers, NATA officials, and representatives from NGOs etc.

The Director and Deputy Director visited Rengeli Hospital, Letang PHC and Mewa sub health post to observe the services provided by these centers to TB patients as well as recording and reporting procedures, case holding etc. in Morang district.

This visit further strengthened the involvement of medical colleges and private sector in TB control.

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National Tuberculosis Control Programme (NTCP) in BHUTAN

(Based on Tuberculosis Control Manual, Bhutan, Published by National TB Control Programme Public Health Division, Health Department, 2nd Edition 2001)

How big is the global burden of tuberculosis:

Tuberculosis is a devastating disease, infecting over 32% of the global population and causing an estimated 3.0 million deaths a year. The 98% of these deaths and 95% of all cases occur in low-income countries. Nearly 40% of all cases occur in the ten countries of the South East Asia Region.

About 1/3rd of World Population (1.86 billion people) have been infected with tuberculosis, making it one of the most prevalent infections in the world. The highest prevalence is in South East Asia, where 44% of the population is infected. Fortunately, not everyone who is infected progresses to develop active disease. HIV co-infection is the most important risk factor, increasing the lifetime risk of progression from infection to disease from 10% to over 50%.

Nearly 8 million people develop tuberculosis every year, of which 3.5 million have infectious pulmonary disease, maintaining the cycle of transmission.

TB is the leading cause of death due to infectious diseases.

We can measure the size of the tuberculosis problem in Bhutan in several different ways:

1) Annual Risk of Infection (ARI) measures the proportion of people becoming infected with tuberculosis each year. We measure it using the result of tuberculin surveys. A tuberculin survey was carried out in Bhutan in 1991 and the ARI was about 1.5%.
2) Prevalence is a measure of the number of cases of a disease in a population at a specific point of time. In includes old as well as new cases. The World Health Organization (WHO) estimates that there are about 83 sputum smear positive pulmonary tuberculosis cases per 100,000 people in Bhutan and about 185 cases of all types of tuberculosis per 100,000 people.
3) Incidence is the number of new cases occurring in a population in a year. The estimated incidence of pulmonary sputum smear-positive tuberculosis in Bhutan is 67 per 100,000 people or about 410 new patients per year. About 910 people develop tuberculosis every year.
4) Case finding is the identification of sources of infection (pulmonary sputum smear-positive cases) in the community. Of the estimated 410 new pulmonary sputum smear-positive cases per year, 300 were detected in 1999. This is equivalent to a case finding rate of about 73%. The national target for case finding is 70%.
5) Case holding is the process by which patients with tuberculosis are treated with anti-tuberculosis drugs until they are cured. The cure rate is the percentage of pulmonary sputum smear-positive cases started on treatment that are cured. In Bhutan only 195 of the 300 new smear-positive cases diagnosed in1999 finished their treatment and were cured. Thus cue rate is 65%. This rate must improve otherwise there will actually be an increase in number of people with tuberculosis in the community. This is because partially treated people stay alive longer and in-

fect more people. Partially treated people also develop resistant tuberculosis. The national cure rate target is 85%.

We must all try to improve case holding and case finding must also be improved simultaneously. If we try to improve case finding first, without improving cure rate we will not only increase the number of people with tuberculosis in the community but also create drug resistant forms of tuberculosis, which are expensive to treat and most of which are almost incurable.

What is the NTCP?

The NTCP is an approach within the national health system to control tuberculosis. It has policies, plans and activities to achieve good case finding and management of tuberculosis patients. The NTCP is a countrywide and an integrated programme within the general health services.

What is overall goal of the NTCP?

The overall goal of the NTCP in Bhutan is to reduce the mortality, morbidity and transmission of tuberculosis until it is no longer a public health problem.

How will we achieve this goal?

By finding, treating and curing as many people with infectious (smear-positive) pulmonary tuberculosis as possible. The targets of the NTCP are to:

- find 70% of people who have smear-positive tuberculosis,
- cure 85% of patients with smear-positive tuberculosis and
- reduce the prevalence of tuberculosis to 1 per 1000 population.

The main strategy of the NTCP in Bhutan to achieve these targets is DOTS. This (DOTS) means Directly Observed Treatment, Short-course chemotherapy.

What is DOTS?

DOTS is the internationally recommended strategy to control tuberculosis and is one of the most remarkable recent successes in primary health care. In 1997 the WHO Director General declared it the Òhealth breakthroughÓ of the 1990s. Basic principles of case finding and treatment (many of which were developed in India in the 1950s and 60s) were incorporated into a policy and management package and tested in several African countries in the late 1970s. WHO actively promoted the package as DOTS and by 1997, 102 (48%) of the 212 WHO member states worldwide had adopted this strategy. Of these, 59 countries (58% were routinely implementing DOTS for over 90% of the total population, 35 (34%) had expanded DOTS to cover 10% of the population and 8 (8%) were in the early/pilot phase of DOTS.

A good tuberculosis control programme has five essential components, which are also called five components of DOTS also. They are:

- Political commitment,
- Diagnosis by sputum smear microscopy of people coming to the health services with symptoms of tuberculosis,
- Directly observed treatment with standardized short course chemotherapy regimens.
- Uninterrupted drug supply and
- Continuous monitoring through a standardized reporting system, regular training and supervision.

Commitment:

National commitment to implement DOTS strategy is essential at all levels. At the national level, the government demonstrates commitment by making tuberculosis control a high priority and ensuring that the NTCP has adequate resources. The NTCP demonstrates commitment by adopting the strategy of DOTS and by modifying operational and technical policies to bring them in line with the DOTS strategy. At the district level, health workers

demonstrate their commitment by planning, implementing and monitoring DOTS. Locally, health workers, volunteers and community leaders all have important part to play and their commitment is vital to a successful programme.

Diagnosis:

Diagnosis of tuberculosis patients is based on smear microscopy because this is the most effective and efficient way of identifying infectious patients. Screening of people who come to health services because they have a cough for more than three weeks is the best way to identity people who might have tuberculosis. People with tuberculosis usually seek care because they have symptoms, so there is no need to do house to house surveys to find them. Sputum smear microscopy is cheap, simple and can be done in most Health Centres.

It is a highly sensitive and specific test for detecting people with infectious (smear-positive) tuberculosis. People with non-infectious forms of tuberculosis such as smear-negative pulmonary tuberculosis and extra-pulmonary tuberculosis need additional investigations such as Chest X-ray. However, X-ray is a non-specific test and leads to over-diagnosis of tuberculosis. We maintain the quality of smear examination by a system of quality assurance, which includes regular training, supervision and rechecking of slides.

Treatment:

There are two important principles of tuberculosis treatment:

1) The first is that people must receive an effective drug regimen
2) The second is that they must take it until they are cured

NTCP has recommended regimens of short-course chemotherapy (SCC) for treating different categories of tuberculosis patients based on international recommendations and rigorously controlled clinical trials.

CATEGORY I: 2SHRZ/6HE

CATEGORY II: 2SHRZE/1HRZE/5HRE

CATEGORY III: 2HRZ/6HE

These regimes are effective and should be followed by every one treating people with tuberculosis. To ensure that patients take treatment until they are cured, every patient must be observed taking their medicines at least for the first two months of treatment.

Directly Observed Treatment (DOT) is a way of making sure that we cure the maximum number of patients with tuberculosis. We define directly observed treatment as:

A strategy to ensure tuberculosis patients are cured, in which a person who is accountable to the health service observes the patient taking their medicines properly and provides him with the information and encouragement he needs.

By observing the patient taking the medicines, we make sure that "the drugs get to the bugs" so that the bugs, which cause tuberculosis, are killed quickly. DOT is also a way of supporting patients and giving them the highest possible chance of cure.

Drug Supply:

Patients often stop medicines because they cannot get them. Again there are two important principles that ensure patients never run out of medicines:

1) The first is that anti-tuberculosis medicines must be free. If patients have to pay for expensive medicines, they will often stop taking them prematurely.
2) The second principle is that Hospital and BHUs must always have sufficient stocks of all essential anti-tuberculosis medicines.

In Bhutan anti-TB drugs are provided free and

we have a good essential drug supply (EDP) programme to ensure regular and sufficient drugs.

Monitoring:

There are two forms of monitoring:

1) Reports on case finding and outcome of treatment and
2) Regular supervision.

We monitor the outcome of treatment using an internationally recommended recording and reporting system based on quarterly cohorts of patients. The patients registered for treatment during a three-month period form a cohort. We monitor their progress on treatment by doing sputum examinations at 2, 5 and 8 months and recording these results in the tuberculosis register in each hospital. In this way, we can calculate what proportion of patients complete a full course of treatment and are cured.

The second form of monitoring is supervision. Regular supervision is very important to ensure that the technical and operational policies of the NTCP are being followed to provide on-the-job training and to assist with problem solving at the local level.

What are the activities of the NTCP?

- Promote early diagnosis of people with infectious pulmonary tuberculosis by sputum smear examination.
- Establish a network of microscopy centers and a system of quality control of sputum smear examination.
- Provide effective chemotherapy to all patients, in accordance with national treatment policies.
- Ensure a continuous drug supply to Dzonkhags. This includes systems for procurement, storage, distribution, monitoring and quality control of drugs. This is being done by programme and EDP (Essential Drug Programme) under DVED (Division of Vaccine, Equipment & Drugs).
- Monitoring the results of treatment and evaluating progress of the programme, by analyzing the treatment outcome in cohorts of patients and giving feedback to the Dzonkhags/Health centers.
- Provide continuous training and supervision for all staff involved in the NTCP at each level of the health system.
- Develop health education methods and materials and to promote community awareness about tuberculosis.
- Coordinate NTCP activities with other primary health care activities.
- Carry out research programme to improve the NTCP.

What indicators do we use to evaluate the NTCP?

We use the following indicators to measure the effectiveness of our work in the NTCP:

- Positivity rate: the proportion of smear-positive cases detected out of the tuberculosis suspects examined. This should be > 10% or so.
- Proportion of new smear-positive out of all new cases diagnosed. This should be 50% or more in an effective DOTS strategy.
- Case detection ratio of new pulmonary smear-positive case- the proportion of cases detected out of those estimated to occur each year. The National target is 70%.
- Reported incidence rate for new smear-positive cases (per 100,000 population by age and sex)
- Smear conversion rate at 2nd /3rd months for new smear-positive cases and relapses respectively. It should be 85-90%.
- Treatment outcomes for new smear-positive cases and relapses, these are mainly cure (>85%) and completion (<5%) rates.

What is the structure of the NTCP?

The Health Services is one of two major Departments under the Ministry of Health and Education. The NTCP is a fully integrated activity within the general health care system. The only vertical staff in the NTCP is the Programme Manager and Assistant Programme Officer.

The responsibilities of the central unit of the NTCP are to:

- Make policies, plans and budgets for the NTCP.
- Prepare training programmes for health workers involved in the NTCP.
- Monitoring the NTCP and prepare and provide regular reports on NTCP activities to the Ministry of Health & Education and related agencies.
- Supervise NTCP activities at the regional/ Dzonkhag levels and
- Coordinate the NTCP activities with other programmes and Dzonkhags.

What are the responsibilities of staff at hospitals?

The district hospitals are the main management units for the NTCP. District Medical Officers/ Superintendents/Medical Officers, TB-Incharges, District Health Supervisory Officers manage & supervise all NTCP activities.

Activities in the Dzonkhags are to:

- Identify people with symptoms of tuberculosis.
- Diagnosis tuberculosis by sputum smear microscopy
- Provide directly observed treatment for all people with tuberculosis, usually by admitting patients for at least the first two months of treatment
- Refer patients to their respective Health Centres for the continuation phase of treatment.
- Contact defaulters and ensure that these patients resume treatment.
- Ensure that follow up sputum smears are collected and examined according to NTCP policies.
- Maintain the Dzonkhag tuberculosis register.
- Prepare and submit the quarterly NTCP report to the programme.
- Receive and provide feedback on transfer out the transfer in patients respectively.

TB Incharges have been identified and trained in all Hospitals and Dzonkhags. Except for the one in JDWNR Hospital all others carry out the TB follow up activities as an extra responsibility. It is felt that the high burden Hospitals/ Dzongkhags will have to identify some one entirely for Tuberculosis Control Programme. The main responsibilities of these workers are to:

- Follow up TB patients in the Dzonkhags and those transferred out.
- Follow up and compile TB reports and send monthly/quarterly to the programme.
- Liaise between Dzonkhag Hospital and peripheral Health Centres in terms of logistic support related to TB control activities.

What are the responsibilities of staff at the BHU?

Staff at the BHU have the following responsibilities:

- Raise public awareness on tuberculosis,
- Carry out sputum microscopy of suspected cases,
- Refer people with symptoms and signs of tuberculosis to the district hospital,
- Supervise and monitor patients in the continuation phase of treatment,
- Trace defaulters and reintroduce treatment or refer to District Hospitals,
- Prepare the monthly NTCP report and submit it to the district hospital,
- To provide feedback about transfer in cases.

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Mother-to-Child Transmission of HIV/AIDS:

issues within lesser developed nations

Evidence suggests that approximately 35% of all infants born to HIV-infected mothers may acquire the virus via mother-to-child-transmission (MTCT), if no preventive measures are adopted. During 2001, approximately 800,000 children globally who were 15 years and under, became infected with HIV, and over 90% of these infected children were infected via MTCT. Sub-Saharan Africa accounts for 90% of global HIV infected children and the predominant portion of children in 2001 who died of HIV/AIDS lived in Africa.[1]

Global situation of Mother to Child transmission of HIV/AIDS:

Global region	Children who are at risk of HIV infection via mother-to-child-transmission in 2001
Eastern europe and Central Asia	5,000
East Asia and the Pacific	68,000
Industrialized/first world nations	5,000
Latin America and Caribbean	52,000
Middle East and North Africa	40,000
South Asia	160,000
Sub-Saharan Africa	2,200,000

Data Sourced from AIDS Unit, UNICEF, New York, February 2002. Website-www.unicef.org/aids

Infants may become infected with HIV during pregnancy, during the delivery process, and during breast-feeding. Evidence suggests that 15-20 % of infant infections occur during pregnancy, 50% during the labor and the delivery process, with infant breast-feeding accounting for approximately 30-35% of infections.

Mothers, who live with HIV/AIDS and are from lesser-developed nations, are faced with difficult decisions regarding whether or not to breast-feed. This is particularly so for South Asian nations where most children are born into very impoverished conditions and breast-feeding is an economic necessity. Infants not infected during the pregnancy period and the birthing process itself, and whose mothers are infected with HIV, must deal with a 15% risk of acquiring infection via breast feeding, this dependent on the duration of the feeding. The use of breast milk formula substitutes reduces the risk of exposure to HIV from infected mothers, yet such is often too costly and milk substitutes also carry other risks such as diarrhoea. Moreover, there is often no access to clean, safe water in these poorer nations which limits proper preparation of the feed.[1,2]

An expectant mother infected with HIV must confront many grave challenges which include concerns over her very own health and well-being and survival, the risks of passing infection to her child via breast feeding, the costs of milk substitutes, and the health problems the baby could develop if not breast fed.

Because of these challenges and especially so in developing nations e.g. South Asian, African nations etc., the United Nations General Assembly Special Session (UNGASS) on HIV/AIDS in June 2001, generated keen interest and global leadership, awareness, and pledged support regarding HIV/AIDS. This Special Session saw the emergence of a declaration by governments and partners that stipulated:

1.) a reduction in the proportion of infants infected with HIV by 20% must be achieved by 2005, and by 50% by 2010.
2.) 80% of pregnant women will have access to antenatal care and relevant health information, adequate counseling, and any other relevant HIV prevention services.
3.) increasing the availability and accessibility for HIV positive expectant women and babies to effective, safe treatments e.g. anti-retrovirals (ARVs) in order to reduce the risk of transmission of HIV to child
4.) effective interventions for HIV positive women, including access to voluntary and confidential counseling and testing (anonymous), and whenever appropriate, provisions of breast milk substitutes and a continuum of care to mother and child.

The United Nations relevant partner agencies on HIV/AIDS have proposed and developed a strategy that has 3 main components to reduce MTCT:[1,2]

1.) Preventing HIV infection in all people, especially young women. This essentially encompasses the education of all women and men regarding HIV/AIDS risk and prevention facts and methods, providing access to safe barrier methods e.g. male and female condoms, lifting the position of women in often male dominated societies e.g. the male dominated South Asian societies where women have little if any social, economic, or personal sexual negotiating skills or rights, and increasing the responsibility on men to reduce the spread of HIV in the first place. This places special emphasis on reducing rape and forced sex and unwanted sex etc.
2.) Prevention of unintended pregnancy among HIV positive women involves the strengthening of reproductive health and access to family planning services so that women have the necessary information to reduce unintended pregnancies.
3.) Specific interventions to reduce HIV transmission from HIV infected mothers to their child, which includes provision and access to ARVs, safer delivery practices, and relevant counseling and support on infant-feeding methods. Moreover, access to voluntary and anonymous counseling and testing is to be increased, these permitting women and partners to assess whether they are infected.

Evidence suggests that the access and use of ARVs can reduce by half the rate of MTCT during pregnancy,[2] labor, and delivery. *Such treatment regimens may include a 1 month course of zidovudine (AZT) during the last weeks of pregnancy. Moreover, a single dose of nevirapine provided to the mother at delivery, this followed by a single dose to the infant within 72 hours of birth.*[1,2]

All HIV infected mothers should have access to counseling and support on infant-feeding methods. Replacement or substitute feeding should be advised only when acceptable, feasible, affordable, sustainable, and safe. Otherwise, exclusive 6 month breast feeding is recommended.[1,2]

UNICEF is adopting an aggressive response to MTCT, which encompasses partnerships at all levels. This approach includes:[1,2]

1.) Prevention of HIV infection among all women of child bearing age and especially within developing nations
2.) Strengthening family and community support for women and their partners to prevent HIV infection and to access services for preventing MTCT
3.) Aggressive expansion of access to voluntary and anonymous counseling and testing
4.) Enhancement and improvement of antenatal care for expectant mothers
5.) Expanded access to ARVs for preventing MTCT of HIV
6.) Provision and access to advice for expectant mothers and partners on appropriate feeding methods for infants of HIV positive mothers
7.) Overall uplifting of the health and well-being and nutrition status of parents and children living with HIV/AIDS

These goals by UNICEF are a top priority in UNICEF's Medium Term Strategic Plan for 2002-2005, and should be considered and adopted by relevant partners globally to prevent MTCT of HIV. These proposed actions are particularly relevant to developing nations e.g. African nations, South Asian, Latin American etc. who often lack the necessary socio-economic infrastructure. Such nations must partner with UNICEF and related agencies to achieve reductions in MTCT of HIV. The expertise is there, the success stories are there, the plans and strategic goals articulated, what is required now is commitment and leadership.

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(Article prepared under SAARC-Canada Regional TB and HIV/AIDS Project, supported by CIDA)

TB/HIV within SAARC Region and ProTEST: A useful initiative for controlling co-infection in South Asia

Human immunodeficiency virus (HIV) pandemic and it's clinical consequence, Acquired Immunodeficiency syndrome (AIDS), persists as the main global public health scourge, this disease wreaking particular havoc on sub-Saharan Africa. Years of socio-economic developmental progress have fallen victim to HIV/AIDS within Africa, and the signs point to a similar faith in other global nations (e.g. European, South Asian, and Latin American etc.) if HIV is not made the urgent public health and national security priority that it is. African nations with high HIV prevalence rates today previously evidenced low prevalence rates, and while the epidemic timetable is a variable one impacted by a host of factors, similar socio-economic ingredients are presently in place in many developing nations e.g. South Asian, and thus capable of exploding the epidemic (s). HIV/AIDS is capable of 'hollowing' out the very core of a society, destroying the often most economically productive age group e.g. 25-45 years.

The focus of this commentary is on the SAARC region countries (South Asian) and the impact that HIV/AIDS is beginning to have and will have, should low 'general population' prevalence rates drive complacency in tackling the virus. While the HIV/AIDS epidemic is now emerging and a recent occurrence within South Asia (India, Pakistan, Bangladesh, Sri Lanka, Nepal, Bhutan, and Maldives) and though infection prevalence is low within these developing nations (typically less than 1.0% e.g. India 0.8% and Nepal 0.5%), it is the presence of high-risk groups e.g. commercial sex workers, injecting drug users (who share needles), men-who-have-sex-with-men, mobile migrant workers etc. and associated high-risk behaviours, that is worrisome. These high-risk groups within South Asian countries are evidencing dangerously high prevalence rates of HIV e.g. 60-70%. Where high-risk behaviour exists, HIV/AIDS will soon follow. Moreover, South Asian countries possess the large population sizes and factors necessary for explosive increase in HIV/AIDS. Furthermore, this region has more than one-half its populations under the age of 25 and there is strong evidence of high-risk behaviour by this age-group. When coupled to the lack of public awareness on HIV risk and preventive methods, access to preventive/barrier methods, poverty, gender inequality, high STD rates, high illiteracy (and especially for females), lack of blood and blood product safety, trafficking of women/young girls, and the stigmatization, discrimination, and denial often attached to HIV/AIDS, then the stage is set for exponential growth (increasing incidence) of infection within these countries. HIV/AIDS infection varies between and within South Asian countries, yet the challenge now is to stabilize the elevated rates (or reduce them), and keeping the low rates suppressed. This public health challenge comes in light of the fact that the infection trend appears to be an increasing one within the region countries.

Tuberculosis (TB) prevention and control remains a particular challenge globally with 2 billion persons infected with *Mycobacterium tuberculosis* (one-third of global population) and approximately 39% of global TB cases occurring within South East Asia. South Asia (SAARC

region) bears approximately 32% (2.5-3 million new cases annually) of global TB burden yet with 22% of global population.[1,2] TB remains the leading cause of death among young persons and adults from a single infectious agent. Evidence has accumulated which suggest that the HIV infection is driving the TB epidemic (s) globally, and particularly so within high-HIV prevalent populations. HIV continues to have a destructive impact on TB epidemiology world-wide with TB being the most opportunistic infection associated with HIV. HIV infection is the strongest known risk factor for TB infection becoming active clinical TB disease, speeding the progression from latent or recently acquired infection to active clinical disease. In addition, HIV may contribute to the emergence of multi-drug resistant TB (MDR-TB) which is very difficult to treat, expensive to treat, and often fatal. HIV changes the clinical presentation of TB and reduces survival despite adequate response to appropriate anti-TB treatment. In South Asia, areas with highest rates of HIV are also reporting greatest increases in TB cases, and this is the problem. Furthermore, TB is having a dangerous impact on HIV for evidence suggests that there is increased HIV viral replication when co-infected, speeding up the natural clinical progression of HIV infection.[3,4] The intimate and destructive relationship between HIV and TB may well be two-directional such that TB adversely alters the natural history of HIV/AIDS disease. Clinical evidence suggests that co-infection and resulting disease presents more morbidity, mortality, and associated financial costs to the sufferer than either disease/infection on its own.

Approximately one-third of persons infected globally with HIV are also co-infected with Mycobacterium tuberculosis (12 million as of the end of 2000).[5] In nations with highly evolved HIV epidemics, and especially those of sub-Saharan Africa, most TB patients are also HIV infected,[6] with analysis showing TB incidence estimates in all African countries markedly associated with estimates of adult HIV seroprevalence (adults).[7] The impact and burden of TB is so intimately woven to the HIV epidemic that prevention and control of HIV in the first instance must be of utmost importance for TB control programmes, similarly to how TB treatment/care and prevention must be a cardinal concern of HIV/AIDS treatment/care and control programmes. However, in spite of the overlapping epidemiology between HIV and TB, the global public health responses have largely operated on separate fronts. TB strategies have stressed TB case finding and treatment, with little attention to HIV/AIDS interventions. Similarly, HIV/AIDS programmes have typically paid little attention to TB. This must change and the global public health communities and especially the World Health Organization (Global TB/HIV Working Group) is responding to the emerging dual infection.

Since strong evidence implicates an intersecting dual pandemic, WHO has formulated a broadened initiative (ProTEST or the Promotion of Voluntary Testing whereby HIV counseling and testing (VCT) is at its core) to reduce the burden of HIV-attributed TB, this expanded strategy calling for close partnership between TB and HIV programmes.[2,8] WHO has recognized that a marriage of both disease control programmes is absolutely necessary and particularly so within developing nations, if HIV, TB, and the HIV-TB co-infection pandemics are to be controlled. Such an approach goes beyond traditional and separately managed HIV and TB prevention and control programs. This enhanced approach is the key to a more comprehensive and collaborative response to TB in high HIV-prevalent districts/regions and entails interventions against TB (intensified case-finding, treatment and cure, and preventive isoniazid treatment), as well as strategies against HIV (VCT, making available barrier methods e.g.

condoms etc., detecting and treating STDs, the promotion of safe injecting drug use, making safe the blood supply and blood products, and the provision of the HAART strategy (highly active antiretroviral treatment)). This approach can be viewed as a simultaneous attack on both diseases, in an effort to control TB/HIV co-infection (HIV-attributed TB). VCT for HIV can connect TB and HIV programme activities and this synergy is absolutely important at this stage of the dual epidemics. The rewards of VCT for HIV to TB patients include referral for the appropriate care and support for persons testing HIV-positive. Similarly, people attending a centre for HIV's VCT can gain from TB screening and those found to be both HIV-positive and with active TB will then require referral for TB chemotherapy treatment; those without active TB should be provided TB preventive isoniazid treatment (IPT). In short, the objective of the WHO's ProTEST initiative is to decrease the combined impact and burden from TB and HIV by decreasing the amount of persons becoming infected with HIV in the first instance; by decreasing the number of people spreading both HIV and Mycobacterium tuberculosis; and decreasing the risk of developing clinical TB in persons infected with both HIV and Mycobacterium tuberculosis. What is important is that while this ProTEST strategy was initially geared for high-burden HIV regions, one may argue that it may be beneficial to utilize in low burden regions/countries/districts as well, and specifically among high-risk sub-groups of those settings. This strategy opens the door for screening for HIV, TB, STDs and other associated high-risk behaviors that are often antecedents to HIV/AIDS.

VCT as the core of the ProTEST initiative is often unavailable in developing nations e.g. SAARC region nations, due to the financial costs of establishing counseling facilities, expertise, and the stigmatization etc. often connected to being diagnosed as HIV-positive. Moreover, we are dealing with a situation whereby we are bringing persons to screen for an infection/disease that has 100% mortality (if positive) and after advising on the status, suggesting that you proceed for screening for an infection/disease (TB) that you likely will have, yet can be cured. This is a challenge to both the afflicted persons and those performing the testing, counseling, and guidance. Thus this very complex situation demands much training of the providers of this ProTEST, especially in terms of pre- and post-test counseling. This and similar limiting issues must be addressed for this programme to be successful. Yet this strategy seems attractive for the TB/HIV co-epidemic (whether high or low burden regions) and VCT offers a direct entry point for more effective TB prevention and care for HIV seropositive and seronegative persons. WHO has taken the lead in this regard and is coordinating a network of partners involved in the ProTEST Initiative, including ministries of health of countries bearing the dual burden of HIV and TB (piloting in approximately 5 selected African nations), international development assistance agencies, non-governmental organizations and academic institutions.[9] The network will facilitate the exchange of information and experience between partners and provide oversight and guidance of ProTest projects.

The good news is that we are not powerless against HIV/AIDS for we do have evidence that prevention and intervention methods do work (e.g. the Thailand 100% condom programme). Thus HIV can have tremendous success stories, yet it must be faced head-on and within South Asia, it must be addressed 'now'. Successful interventions are available to decrease the burden of HIV-related TB and this is never more important than the present for South Asian nations that are faced with pressing HIV, TB, and co-

infection epidemics. This region is already the highest burden TB region globally and both diseases (and co-infection) may exact irrecoverable socio-developmental tolls on these nations if not addressed with urgency. Therefore, the time is now for TB and HIV programmes to collaborate in carrying out these activities as widely as possible and ProTEST should be given increased consideration and at least piloted in some nations to assess the benefits. The enormity of TB, HIV, and the dual infection require immediate and urgent multi-sectorial action, a focus at all levels of societies and governments. Leadership and commitment remains core. There must be close collaboration by both HIV and TB prevention and control programs. The ProTEST Initiative is one such strategy that can greatly help to build and strengthen collaborations between TB and HIV programmes and to increase the full range of prevention and treatment interventions to reduce the impact of HIV/AIDS, TB, and HIV-related TB within global nations (particularly developing nations), and especially the focus of this commentary, the SAARC region countries India, Pakistan, Sri Lanka, Bangladesh, Nepal, Maldives, and Bhutan.

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Abstracts

1. Non-adherence to tuberculosis treatment in the eastern Terai of Nepal:

D. F. Wares, S. Singh, A. K. Acharya, R. Dangi

Int. J Tuberc Lung Dis 7(4):327-335,
2002 IUATLD

Setting: Terai districts, eastern Nepal.

Objectives: To identify potential methods of increasing adherence to tuberculosis (TB) treatment by determining factors that patients felt influenced adherence.

Methods: New pulmonary TB patients registered from July to November 1998 with an outcome of non-adherence to treatment (NA) were identified from District TB Registers, traced and interviewed using a semi-structured questionnaire. An equivalent number of adherent (A) patients were interviewed.

Results: Of 81 NA patients traced, 30 were interviewed, 16 had been incorrectly classified, age was incorrectly recorded in four, 13 had migrated and 18 were not found. The groups were similar in demographics, type and knowledge of TB. More A patients knew their diagnosis ($p=0.07$) and reported haemoptysis as an initial symptom ($p=0.03$). NA patients had longer travel to health facility ($p<0.001$), and fewer hand been informed by health care workers (HCW) about the consequences of not completing treatment. The m0ost common reasons given for stopping treatment were side effects, HCWs' mistakes or behaviour and health service failure. Desire for cure and knowledge that TB was curable were the most important reasons for completing treatment

Conclusion: Non-adherence seemed related to treatment delivery failures. The health system needs strengthening in Nepal. Intensified HCW training and supervision, better health education for patients and families, more flexibility for treatment supervisors, adequate supplies for treatment centres and decentralization of treatment delivery to the lowest health service level practicable are urgently needed.

2. Miliary tuberculosis and acute respiratory distress syndrome:

JY Kim, YB Park, YS Kim, SB Kang,
JW Shin, IW Park, BW Choi

Int. J Tuberc Lung Dis 7(4):359-364,
2003 IUATLD

Objective: Miliary tuberculosis is a life-threatening disease caused by the haematogenous spread of Mycobacterium tuberculosis. We evaluated the clinical manifestations of 34 patients with military tuberculosis.
Design: A retrospective case review

Results: The diagnosis of miliary tuberculosis was based on the identification of miliary nodules on chest radiography and one of the three following criteria: 1) acid-fast bacilli smear and /or culture positive in clinical specimens (22/34), 2) histopathological identification of TB granuloma (6/34), and 3) radiological and clinical improvement after anti-tuberculosis treatment (6/34). The mean

age (±SD) of the patients was 42.7 ±21.6 years, with two peaks in the age group 20-30 and in those over 60. There were 16 underlying diseases in 14 patients, of which liver cirrhosis was the most common. The drug sensitivity pattern was available for 17 isolates of M. tuberculosis: 14 were sensitive, while the other three were resistant to at least one anti-tuberculosis drug. Eight patients developed acute respiratory distress syndrome (ARDS), five of whom died during intensive care. Platelet count, serum albumin and liver enzyme level at the time of admission were significant factors both for ARDS development and for survival.

Conclusion: ARDS caused by miliary TB is associated with a high fatality rate, scope remains for improvement in its management.

3. Cost analysis of paediatric tuberculosis treatment in Japan:

M Rahman, O Takahashi, I Takamatsu, M Sekimoto, K Hira, T Fukui

Int. J. Tuberc Lung Dis 7(3):254-257
2003 IUATLD

Objective: To estimate the cost of treating a tuberculosis (TB) case and to analyze TB-related medical service utilization, a cost-of-illness study was conducted for all patients with a primary diagnosis of TB admitted to a public hospital in Japan.

Methods: Retrospective analysis by abstracting in and out patient medical records of 57 paediatric patients diagnosed with TB during 1993-1998 at a public hospital in Osaka prefecture. Costs were estimated based on third party's payer perspectives according to the service utilization pattern. In addition to cost data, socio-demographic information and service unitization pattern were also extracted from the medical records. Cost of preventing a case of TB was abstracted from the published literature.

Results: The average cost of treatment was US$8384 (95% CI 5667-11099), while the average length of hospitalization was 63 days (95% CI 43-84). Based on 20-80% vaccine efficacy, the cost of preventing a case of TB was US$35950-175862. In univariate analysis, site of TB (p=0.04) was significantly associated with TB treatment cost, while case-finding method (contact tracing symptoms, etc.) was associated with length of hospitalization (p=0.03). Multivariate regression analysis, however, showed none of the factors to be significant predictors of TB treatment cost or length of hospital stay.

Conclusion: the cost of treating a case of paediatric TB in much lower than that of preventing one. Japan's universal BCG vaccination policy should be re-examined in the light of economic, social and political issues.

4. Tuberculosis transmission pattern in a high-incidence area: a spatial analysis:

Z Munch, SWP Van Lill, CN Booysen, HL Zietsman, DA Enarson, N Beyers

Int. J. Tuberc Lung Dis 7(3):271-277
2003 IUATLD

Setting: In the Cape Town suburbs of Ravensmead and Uitsig, tuberculosis has reached epidemic levels, with notification of 1340/ 100,000 in 1996. These suburbs are characterized by overcrowding, high unemployment and poverty. It is traditionally believed that tuberculosis transmission takes place mainly in households after close contact with an infectious person. Studies have recently linked tuberculosis transmission to locations outside the household and have associated these places with a particular high-risk lifestyle. Anthropological studies in some suburbs of Cape Town, in which a very high number of local; drinking places (shebeens) were identified (17 per km^2), have suggested that social drinking is part of such a lifestyle.

Objective: To investigate various risk factors and places of transmission of tuberculosis using a geographical information system (GIS).

Results and Conclusion: The 1128 bacteriological proven cases of tuberculosis studied over the period 1993-1998 were investigated using spatial epidemiological techniques of exploratory disease mapping. Point pattern analysis and spatial statistics indicated clustering of cases in the areas of high incidence. Significant associations of tuberculosis notifications were found with unemployment, overcrowding and number of shebeens per enumerator sub-district. High tuberculosis notifications with unemployment and its associated poverty emerged as the strongest association.

5. The molecular epidemiology of tuberculosis in Western Canada:

JM FitzGerald, A Fanning, V Hoepnner, E Hershfield, D Kunimoto and the Canadia Molecular Epidemiology of TB Study Group.

Int J Tuberc Lung Dis 7(2):132-138,
2003 IUATLD.

Objective: To define the molecular epidemiology of TB in western Canada and in particular the risk factors for clustering.

Measurements: We prospectively identified all positive cultures from newly diagnosed cases of TB diagnosed between February 1995 and January 1997 and carried out restriction fragment length polymorphism (RFLP) testing on all isolates.

Results: Of 956 cases identified, 944 fulfilled the entry criteria. The mean age was 49.65 years (±22.33), and 508 (53.6%) were males. Three hundred and three (32.1%) subjects were clustered, this varied from 20.2% of the foreign born, 48.4% of Canadian non-aboriginal and 61.1% of all Aboriginal persons. Younger persons ($p=0.0001$), males ($p=0.015$), those with pulmonary disease ($P<0.001$), living in a shelter in the past year ($p<0.001$), drug susceptible disease ($p<0.036$), predisposing factors ($p<0.001$), prior contact ($p<0.001$) and prior skin test)$p<0.002$) were more likely to cluster. Among specific risk factors, HIV infection, injection drug use alcohol excess and weight loss were all significant.

Conclusion: In this description of the molecular epidemiology of TB in Western Canada, previous results have been confirmed and extended. These results highlight the importance of identifying specific high-risk groups especially in the context of renewed efforts to targets persons for treatment of latent TB infection.

6. PPD RT23 for tuberculin surveys in India:

VK Chadha, PS Jagannatha,
PS Vaidyanathan, P Jagota

Int J Tuberc Lung Dis 7(2):172-179
2003 IUATLD

Setting: Tuberculosis sanatoria and villages in Bangalore district,

Objectives: To study the appropriateness of continuing to use 1TU dilutions prepared by the BCG Laboratory, Guindy, in Chennai, India, from a freeze-dried form of PPD RT23 with Tween 80 received from Statens Serum Institut (SSI) Copenhagen, for tuberculin surveys in India.

Design: The responses to dual tuberculin tests were compared among 1) 63 smear-positive cases using 2TU PPD prepared by the Guindy laboratory

(Dilution-G), and 2TU PPD prepared by the SSI (Dilution-G; and 3) 1338 apparently healthy children using 1TU and 2TU Dilution-G. Test sites were allocated randomly using the double-blind technique. Tuberculin responses obtained during studies conducted in India and in other countries were compared.

Results: The differences in sensitivity of tuberculin testing using the different preparation were found to be small and statistically non-significant. Among children, a higher proportion of reaction sizes in 10-14 mm and 15+mm categories were observed to 2TU compared to 1TU in the study area where non-specific sensitivity is highly prevalent. Studies in India and other countries do not suggest any loss in potency of 1TU dilutions of PPD RT23 with Tween 80 provided by the BCG Laboratory, Guindy, may continue to be used for tuberculin surveys in India.

7. Treatment of new pulmonary tuberculosis patients: what do allopathic doctors do in India?

R Prasad, RG Nautiyal, PK Mukerji, A J ain, K Singh, RC Ahuja

Int. J Tuberc Lung Dis 6(10):895-902 IUATLD 2002

Setting: Out and in patient services of the Department of Tuberculosis and Chest Diseases at King George's Medical College, Lucknow, India.

Objective: To analyze the prescribing patterns of allopathic doctors for treatment of new cases of pulmonary tuberculosis (PTB), and to compare their practices with the current national and World Health Organization (WHO) recommendations.

Design: A consecutive case series. Tuberculosis treatment practices of 449 primary doctors who had prescribed treatment for PTB to 218 patients were analyzed.

Results: Thirty-three different drug combination regiments were prescribed by 449 primary doctors. Approximately 45% (95% CI 41.5-49.9) of doctors did not practice the current NTP/WHO recommended drug regimens. Overall 75% (95% CI 70.4-78.8) of doctors made prescription errors with respect to one or more aspects of treatment, including treatment duration (64.5%) and drug dosages (30%). The most frequent prescription error was treatment for longer than necessary (60.2%; 95% CI 55.5-64.8). Overall, both chest specialists and non-chest specialists made prescription errors with almost equal frequency (77.5% vs. 72.2%, p=0.228). The majority of the doctors (70.2%; 95% CI 65.7-74.5) used fixed dose formulations of two to four drugs.

Conclusion: For effective tuberculosis control, strategies for targeted continuing medical education and auditing of the practices of all doctors need to be implemented without delay.

8. Quality assurance programme for drug susceptibility testing of Mycobacterium tuberculosis in the WHO/IUATLD Supranational Reference Laboratory Network: five rounds of proficiency testing, 1994-1998:

A Laszlo, M Rahman, M Espinal, M Raviglione, and the WHO/IUATLD Netrwork of Supranational Reference Laboratory.

Int. J Tuberc Lung Dis 6(9):748-756 IUATLD 2002

Setting: Quality assurance for the WHO/IUATLD Global Tuberculosis Drug Resistance Surveillance Programme.

Objective: To implement an ongoing proficiency testing programme for drug susceptibility testing (DST) of Mycobacterium tuberculosis within the WHO/IUATLD Supranational Reference Laboratories Network (SRLN).

Design: Five culture panels, each consisting of 10 duplicate drug susceptible and drug resistant clinical isolates (100 strains) of M. tuberculosis were tested for resistance to streptomycin (SM), isoniazid (INH), refampicin (RMP) and ethambutol (EMB). DST procedures included the proportion, absolute concentration and resistance ratio methods, as well as the radiometric BACTEC 460 method.

Results: The efficiency, sensitivity and specificity of M. tuberculosis DST as well as the intra laboratory reproducibility showed that the laboratories tested susceptibility to RMP and to INH very reliably, with values ranging from 97% to 99%. The testing of SM and EMB was less dependable, with values ranging from 90% to 95%. The sensitivity of testing of EMB increased from 60% in Round 1 to 98% in Round 5, without a concomitant decrease in specificity.

Conclusions: This study has shown that regular proficiency testing can significantly improve the quality of DST, even in the most sophisticated TB laboratories. Mean DST efficiency levels of 92% for both SM and EMB and 97% and 99% for INH and RMP, respectively are proposed as reasonable performance goal for the SRL network. Efficiency, consistently lower than these values, would require remedial action. Efficiency levels lower than mean – 1 standard error, i.e. 80% for SM and EMB, 89% for INH and 95% for RMP, should always be considered as sub-standard performance for DST.

9. Risk factors associated with default, failure and death among tuberculosis patients treated in a DOTS programme in Tiruvallur District, South India, 2000:

T Santha, R Garg, TR Frieden, V Chandrasekaran, R Subramani, PG Gopi, N Selvakumar S Ganapathy, N Charles, J Rajamma, PR Narayanan.

Int J Tuberc Lung Dis 6(9):780-788
IUATLD 2002

Objective: To identify risk factors associated with default, failure and death among tuberculosis patients treated in a newly implemented DOTS programme in South India.

Design: Analysis of all patients registered from May 1999 through April 2000. A community survey for active tuberculosis was underway in the areas; patients identified in the community survey were also treated in this programme.

Results: In all, 676 patients were registered during the period of the study. Among new smear-positive patients (n=295), 74% were cured, 17% defaulted, 5% died and 4% failed treatment. In multivariate analysis (n=676), higher default rates were associated with irregular treatment (adjusted odd ratio [AOR] 4.3; 95% CI 2.5-7.4), being male (AOR 3.4;95% CI 1.5-8.2), history of previous treatment (AOR 2.8; 95% CI1.6-4.9), alcoholism (AOR 2.2;95% CI 1.3-3.6), and diagnosis by community survey (AOR 2.1;95% CI 1.2-3.6). Patients with multi-drug resistant tuberculosis (MDR-TB) were likely to fail treatment (33% vs. 3%; P<0.001). More than half of the patients receiving Category II treatment who remained

sputum positive after 3 or 4 months of treatment had MDR-TB and a large proportion of these patients failed treatment. Higher death rate were independently associated with weight <35 kg (AOR 3.8; 9% CI 1.9-7.8) and history of previous treatment (AOR 3.3; 95% CI 1.5-7.0).

Conclusions: During this first year of DOTS implementation with sub-optimal performance, high rates of default and death were responsible for low cure rates. Male patients and those with alcoholism were at increased risk of default, as were patients identified by community survey. To prevent default, directly observed treatment should be made more convenient for patients. To reduce mortality, the possible role of nutritional interventions should be explored among underweight patients.

10. Tuberculosis in children dying with HIV-related lung disease: clinical-pathological correlations:

WP Rennert, D Kilner, M Hale, G Stevens, W Stevens, H Crewe-Brown.

Int I Tuberc Lung Dis 6(9):806-813
IUATLD 2002

Setting: Chris Hani Baragwanath Hospital, Soweto, South Africa.

Objectives: To compare post mortem histological, microbiological and biochemical findings with clinical and radiological data generated ante mortem in children infected with HIV dying from clinical lung disease.

Methods: Post mortem lung and liver biopsies were undertaken on 93 consecutive deaths in children with HIV. Specimens were processed for culture, histology and staining for M. tuberculosis, Pneumocystis carinii pneumonia (PCP) and cytomegalovirus (CMV). Post mortem diagnoses were compared with clinical and radiological data generated during the final hospitalization.

Results: Tuberculosis (TB) was diagnosed post mortem in four (4.3%) cases, a further 17 (18.2%) patients had been treated empirically for TB before death, and the remaining 72 (77.5%) patients had not been treated for TB. TB was more prevalent in children aged 1 year or older (13.4%) than in younger patients (1.4%) ($p<0.025$). Patientswith PCP, CMV pneumonitis or lymphocytic interstitial pneumonitis (LIP) had the same clinical presentation or radiographic appearance as patients with TB. The only features distinguishing patients with TB were older age and ante mortem gastric aspirate cultures positive for M. tuberculosis.

Conclusions: The diagnosis of TB in children infected with HIV remains difficult. Clinical and radiographic features are shared with other opportunistic diseases. Case identification strategies relying on clinical and radiographic findings lead to over treatment, particularly in children younger than 1 year of age. Gastric aspirate cultures remain a reliable tool for the identification of infected patients.

11. Factors affecting patient compliance with directly observed treatment short course in Kathmandu urban areas of Nepal. ISBN : 974-04-2932-7

Tara Singh Bam, Kanittha Chamroonsawasdi, Suwat Srisorrachatr, Kitti Shiyalap.

A cross-sectional study was conducted in January 2003, among 175 compliant and 59 non-compliant patients, randomly selected from Kathmandu Urban DOTS centres, to identify the compliance behavior and related factors, using a self administered questionnaire.
More than half (61%) of non-compliant patients interrupted their treatment due to lack of motivation

and believing that they were cured. The proportion of compliance was high among the younger (15-34) age group ($p<0.05$) and among the single (marital status) patients ($p<0.05$) (79.7% and 82.5% respectively). The overall knowledge scores ($p<0.001$) and, perception scores ($p<0.001$), perception of susceptibility to disease ($p<0.05$) and benefits of treatment ($p<0.001$) were significantly different between the compliant and non-complaint groups. Non-complaint patients were more likely to think that treatment could be stopped once they were free of symptoms and thought they were cured. A significant relationship was found between compliance and availability of health education, DOT, and traveling time ($p<0.05$). The overall scores of social support from family and friends were significantly different between the two groups ($p<0.05$). Compliance patients had good emotional and informational support from family and friends. A significant difference was found between the two groups for overall social support scores ($p<0.05$). The results using multiple logistic regression analysis showed that knowledge (OR = 1.32; 95% CI : 1.03-1.70) and availability of health education (OR = 6.27; 95% CI : 2.88-13.64) were related to compliance with DOTS.

Compliance with DOTS is affected by knowledge, health education, DOT, traveling time, perception of susceptibility and benefits, and social support. It could be improved by provision of more information about tuberculosis and expansion of DOTS involving the community.

12. The Growing Burden of Tuberculosis: Global Trends and Interactions with the HIV Epidemic

Elizabeth L. Corbett, Catherine J. Watt, Neff Walker, Dermot Maher, Brain G. Williams, Mario C. Raviglione, Christopher Dye.
Arch Intern Med/Vol 163, May 12, 2003;163:1009-1021. www.archinternmed.com
American Medical Association 2003

Background: The increasing global burden of tuberculosis (TB) is linked to human immunodeficiency virus (HIV) infection.

Methods: We reviewed data from notifications of TB cases, cohort treatment outcomes, surveys of Mycobacterium tuberculosis infection and HIV prevalence on patients with TB and other subgroups. Information was collated from published literature and database held by the World Health Organization (WHO), the Joint United Nations Programme on HIV/Acquired Immunodeficiency Syndrome (UNAIDS), the US Census Bureau and the US Centres for Disease control and prevention.

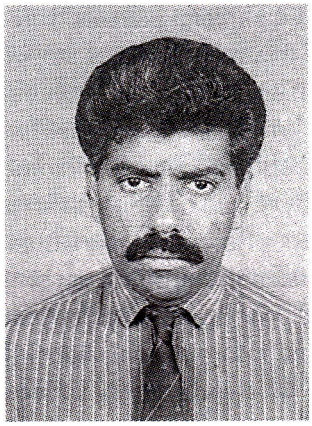
Results: There were an estimated 8.3 million (5^{th}-95^{th} centiles, 7.3-9.2 million) new TB cases in 2000 (137/100000 population, range, 121/100000-151/100000). Tuberculosis incidence rates were highest in the WHO African Region (290/100000 per year, range 265/100000-331/100000), as was the annual rate of increase in the number of cases (6%). Nine percent (7%-12%) of all new TB cases in adults (aged 15-49) years) were attributable to HIV infection, but the proportion was much greater on the WHO African Region (31%) and some industrialized countries, notably the United States (26%). There were an estimated 1.8 million (5^{th}-95^{th} centiles, 1.6-2.2 million) deaths from TB, of which 12% (226000) were attributable to HIV. Tuberculosis was the cause of 11% of all adult AIDS deaths. The prevalence of M. Tuberculosis HIV co-infection in adults was 0.36% (11 million people). Co-infection prevalence rates equal or exceeded 5% in 8 African countries. In South Africa alone there were 2 million co-infected adults.

Conclusions: The HIV pandemic presents a massive challenge to global TB control. The prevention of HIV and TB, the extension of WHO DOTS programmes and a focused effort to control HIV-related TB in areas of high HIV prevalence are matters of great urgency.

Welcome News

Appointment of Deputy Director:

As per the decision of the appointment committee, Dr. Rano Mal Piryani from Government of Pakistan has appointed as Deputy Director in the month of November 2002. He has joined the SAARC TB Centre, Kathmandu on April 11, 2003.



Dr. Mal, a consultant chest physician belongs to Mithi District, Tharparkar, Sindh, Pakistan. He did M.B.B.S. in 1986 from Liaquat Medical College, Jamshoro and received certificate of merit. He obtained MCPS in Family Medicine in 1991 from College of Physicians and Surgeons, Pakistan. He got Diploma in Tuberculosis and Chest Diseases (DTCD) in 1992 from University of Karachi. He joined Government service in 1987 and served his native district for more than six years. He served Ojha Institute of Chest Diseases, Karachi nearly six years and Department of Chest Medicine, Jinnah Post-graduate Medical Centre, Karachi for three years.

He has more than twenty-five research papers at his credit. His paper on "Tobacco Epidemic in Tharparkar" was declared as best scientific paper in Biennial Conference on Lung Health, held in month of March 2002 at Peshawar, Pakistan. After examining his thesis and clinical performance, Board of Advance Studies and Research, University of Karachi on May 9, 2002 has awarded him a "Degree of Doctor of Medicine in Chest Medicine". He is first from interior of Sindh to have such degree in the subject of Chest Medicine. He has written his thesis on "Presentation of Pulmonary Tuberculosis in cannabis or/and opiates Drug Abusers", which was evaluated at Liverpool and Cardiff, UK.

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Proposed Programmes

Forthcoming Events:

1. Regional Workshop of Nodal Officers of Member Countries under SAARC-Canada Regional TB and HIV/AIDS Project, 8-10 July 2003, Kathmandu.
2. Thirteenth meeting of the Governing Board of STC and Preparation of SAARC regional training modules for TB control programme, October 2003.
3. Regional epidemiological training and training session on integration of gender in epidemiological report October 2003.
4. Regional workshop to develop the SAARC Regional TB & HIV/AIDS strategy – October 2003
5. A laboratory management workshop for 2 senior managers from 9 national TB reference laboratories based on WHO/IUATLD training modules, December 2003.
6. Meeting of Lab Directors/Incharges of National Ref. Lab of Member Countries - Dec. 2003
7. Trainers' training on TB control programme, Dec. 2003 in Pakistan.

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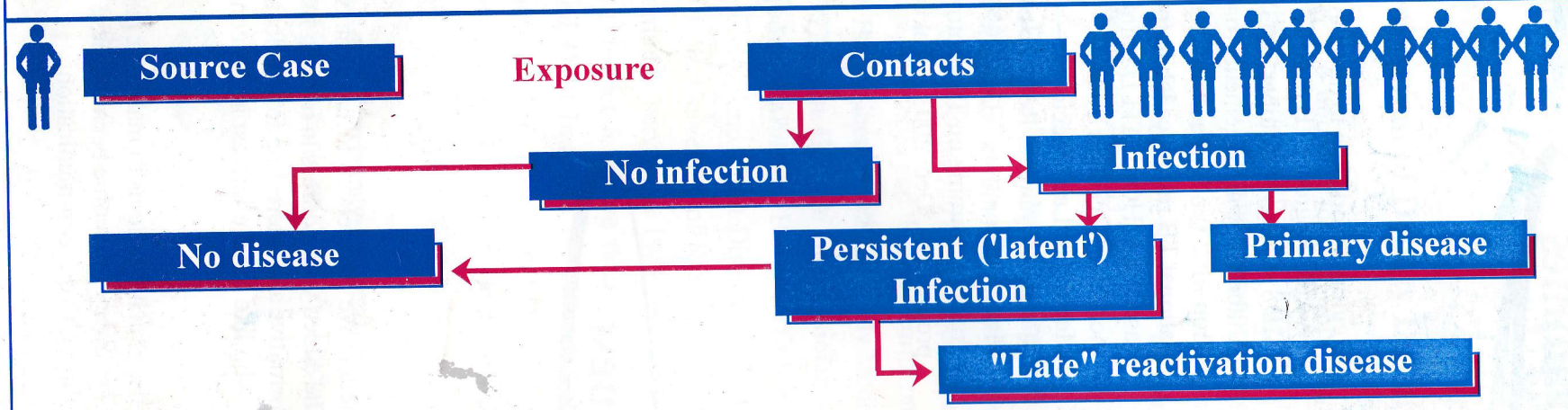
Editor's request

Dear readers,

Thank you very much for your interest in STC Newsletter. We ensure you to have the STC Newsletter regularly and also have noted your request and added your address in mailing list. It is your publication; please guide us to make it useful, informative and interesting for the doctors, health workers, researchers, patients and general public who like to take interest in TB control aspects and HIV prevention in public health.

We request our readers to send comments and suggestions, which enable us to make our publication as per your need. Your suggestions and guidance are always welcome because these are the source of our inspiration. Please keep on guiding us through your communication.

Natural History of Tuberculosis (TB)



Source: WHO Bulletin, International Journal of Public Health, Vol. 80, No. 6, 2002, 484

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