



STAC

Newsletter



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Hon'ble Mr. Krishna Bahadur Mahara, Deputy Prime Minister, Nepal addressing the audience in a Joint Programme organized on the occasion of World TB Day 2011 in Kathmandu, Nepal



Dr. Kashi Kant Jha, Director, STAC addressing the participants of SAARC Training on Computer-based Data Management on TB & HIV/AIDS



Dignitaries attending partnership programme held at KIST MC & TH

STAC Newsletter is a regular publication of SAARC TB and HIV/AIDS Centre, it includes reports on activities, decisions of important meetings of the Centre, news of important activities of National TB and HIV/AIDS Control Programmes of SAARC Member States and recent information on TB, HIV/AIDS and their control.

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Editorial

Antimicrobial Resistance: a Threat of the Millennium

Since the discovery of penicillin by Sr. Alexander Fleming in 1928, it had been instrumental in treating critically ill patients and increasing life expectancy. However the emergence of penicillin resistance in 1940s has threatened all the gains offered by it. Newer pharmaceutical companies emerged and newer antimicrobial agents were discovered and commercialized for the treatment of infections but most of them are already ineffective to treat infections due to growing antimicrobial resistance. This emergence of multi-drug (MDR), pan-drug (PDR) and extensively-drug resistant (XDR) pathogens is a global problem, the seriousness of which is evident by the fact that WHO adopted the World Health Day theme 2011 as "Combating antimicrobial resistance". The growing resistance has posed serious effects for the health care systems in addition to the economic burden to the patients and families.

The SAARC region has 28.7% (i.e. one fifth) of global burden of Tuberculosis (TB). Malaria is also a public health problem in this region. Although HIV is less prevalent in the region (<1%), emergence of TB among HIV infected is a growing problem. In addition to these infectious diseases of public health importance numerous bacterial, viral, protozoal and fungal agents are infecting patients in the hospitals and the community. Usually the first line antimicrobial agents cure the patients, but the treatment has to be switched to second line when they emerge as drug resistant. This second line drugs (reserve drugs) are more expensive and more toxic and are also becoming ineffective. The Methicillin resistant and vancomycin resistant *Staphylococcus aureus*, MDR and PDR *Acinetobacter baumannii*, *Pseudomonas aeruginosa*, *Citrobacter* spp., *Stenotrophomonas maltophilia* etc., metallo-beta-lactamase producing *E. coli* and *Klebsiella pneumoniae*, antiretroviral resistant HIV-1, MDR and XDR strains of *M.tuberculosis* have already emerged in the region. Growing antimicrobial resistance has numerous effects like, prolonged hospital stay, treatment failure, spread of resistant pathogens to other patients, secondary complications and economic, social and mental problems to the patients as well as for their families. Region has achieved success in controlling TB but increasing MDR and XDR strain is a threat to the TB control programmes. Similarly, emergence of Artesunate resistance in malaria parasite will pose challenge in malaria control.

The emergence of resistance in the region is due to inappropriate and indiscriminate use of over the counter antimicrobial agents, irrational use, inadequate infection control practices, poor compliance, over prescription of antimicrobial agents for incentives and ineffective pharmacovigilance systems. Moreover, the emergence of resistance is intimately associated with poverty compelling patients to abort treatment against medical advice. Antimicrobial agents are also becoming popular in agriculture, veterinary and fishery. This wide use of antimicrobials has created selective pressure for human and environmental microorganisms to evolve themselves as resistant. The antimicrobial resistant microorganisms and their resistant genes are growing as an environmental pollutant in the region and the globe.

The regional success on containing antimicrobial resistance is possible through regional efforts on advocacy of rational use of antimicrobial agents, development of effective policy to address the rational use of antimicrobials and its implementation, strengthening antimicrobial surveillance network, rational use of antimicrobials in veterinary, fishery and agriculture, standardization of treatment guidelines and most importantly member states commitment, adequate resources allocation and research work in this arena to generate evidence to formulate/guide the policy to address antimicrobial resistance.

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Report on Activities

1. Commemoration of World TB Day 2011

"On the move against tuberculosis; Transforming the Fight towards Elimination"

World TB Day falling on 24 March every year is geared to step up global awareness about the epidemic of tuberculosis and to renew efforts to eliminate the disease. Though factors like growing drug resistance and the deadly connection between TB and HIV are posing a great challenge to the treatment of the disease, tuberculosis is preventable and curable if necessary precautions are taken and patients stick to the drug regimen.

This year's World TB Day entered into the second year of the two year campaign, "On the move against tuberculosis" focusing on innovation in TB research and care. Accelerating the campaign, are fresh objectives and targets from the Global Plan to Stop TB 2011-2015: Transforming the Fight—Towards Elimination of TB, launched in October 2010 by the Stop TB partnership.

The theme of the World TB Day 2011 is set up as "On the move against tuberculosis;

Transforming the Fight Towards Elimination".

1.1. Partnership Programme with KIST Medical College & Teaching Hospital

On the occasion of World TB Day 2011, a partnership programme with Medical College was organized by SAARC TB and HIV/AIDS Centre (STAC) at KIST Medical College & Teaching Hospital (KMCTH), Lalitpur, Nepal on 22nd March 2011.

Dr. (Prof.) Trilok Pati Thapa, Principal, KMCTH chaired the programme. Mr. Ibrahim

Zuhuree, Director, SAARC Secretariat graced the programme as Guest of Honour.

The objectives of the programme were to discuss the roles of Medical Colleges in capacity building, service delivery and research in relation to National TB Control Programme (NTP) and to disseminate updated information on TB control programme for seeking coordination and cooperation in control efforts on TB.

The programme was attended by more than 100 Medical Students and Staff of the College.



Participants attending partnership programme held at KIST Medical College & T H, Lalitpur, Nepal

Welcoming the participants and guests, Dr. V. S. Salhotra, Deputy Director, STAC made a presentation on "Introduction of SAARC TB and HIV/AIDS Centre and Role of Medical College in Prevention and Control of Tuberculosis".

Dr. Sharat Chandra Verma, Senior Consultant Chest Physician, National TB Centre, Nepal made a presentation on "Managing TB and DR-TB in NTP Nepal".

Dr. V. S. Salhotra made a presentation on "Global & SAARC Regional burden of Tuberculosis & New Drugs and Diagnostics on Tuberculosis".

Dr. Rano Mal Piryani Associate Prof. Department of Internal Medicine, KMCTH, Lalitpur made a presentation on "Linkages between National TB Centre, SAARC TB & HIV/AIDS Centre & KIST Medical College" and Dr. Miles Jung Sijapati, Lecturer, Department of Internal Medicine, In-Charge, DOTS Clinic, Facilitator for PAL Activities, KMCTH Lalitpur made presentation on "Efforts of KMCTH in Prevention & Control of TB/HIV & AIDS".

Discussion and participatory interaction programme were held after completion of above mentioned presentations.

In the programme, remarks were given by Dr. Mohammad Akhtar, Medical Officer, WHO/NTP, Nepal and Mr. Ibrahim Zuhuree, Director, SAARC Secretariat.

Dr. Trilok Pati Thapa, Chairperson of the programme delivered closing remarks and vote of thanks was given by Mr. K. B. Karki, Training Officer, STAC.

The outcome of the programme was the enhancement of involvement of Medical College in Prevention and Control of Tuberculosis and HIV/AIDS.

1.2. Interaction Programme with Journalists

On the occasion of World TB Day 2011, an interaction programme with Journalist was organized on 20th March 2011 by National TB Centre. The programme was organized under the Chairmanship of Dr. Kashi Kant Jha, Director, SAARC TB and HIV/AIDS Centre and National TB Centre. Dr. Jha read out a Press Release published on the occasion of World TB Day and Dr. V. S. Salhotra, Deputy Director, STAC made a presentation on "Status of TB in SAARC Region".

1.3. Joint Programme

SAARC TB and HIV/AIDS Centre commemorated the day by participating in a joint function organized by National TB Control Programme (NTP), Ministry of Health & Population, Government of Nepal and NGOs/INGOs in Kathmandu on 24th March 2011. The function was chaired by Dr. Sudha Sharma, Secretary, Ministry of Health and Population, Government of Nepal.

Hon'ble Deputy Prime Minister, Minister for Information & Communications, Health & Population and Land Reform & Management Mr. Krishna Bahadur Mahara graced the occasion as Chief Guest. Mr. Ibrahim Zuhuree, Representative of H. E. Secretary General, SAARC graced the occasion as Guest of Honour. Mr. Deepak Raj Giri and Ms. Deepashree Niraula, Goodwill Ambassadors for TB control, Nepal also attended the programme as Guest of Honour. In addition, the programme was attended by Dr. Yashovardhan Pradhan, Director General, Department of Health Services, Mr. Devendra Bahadur Pradhan, President, Nepal Anti-TB Association and Dr. Lin



Audience of Joint Programme organized on the occasion of World TB Day 2011 in Kathmandu, Nepal

Aung, WHO Representative to Nepal.

Dr. Pradhan, DG, DHS welcomed the distinguished guests and participants by offering welcome remarks which was followed by a welcome song sang by different artists about the awareness on TB diseases.

Inauguration of Programme

The programme was formally inaugurated by the Chief Guest Hon'ble Deputy Prime Minister, Minister for Information & Communications, Health & Population and Land Reform & Management Mr. Krishna Bahadur Mahara by lighting the traditional oil lamp.

Presentations

Dr. Sharat Chandra Verma, Acting Director, National TB Centre made a presentation on achievements of NTP, Nepal

and Dr. V. S. Salhotra, Deputy Director, STAC presented, Situation of Tuberculosis in SAARC Region.

Remarks

Remarks were given by President, NATA, Cured TB Patient, WHO Representative to Nepal, Representative of Her Excellency, Secretary General SAARC and the Chief Guest. The closing remarks were delivered by the Chairperson and vote of thanks was delivered

by Dr. B. K. Lal, Medical Officer, NTC.

Releasing of Publications

The Chief Guest released Annual Report 2010 of STAC along with other publications.

Message from Her Excellency

On the occasion of World TB Day, special message of Her Excellency Fathimath Dhiyana Saeed, the Secretary-General, SAARC was published in the Gorkhapatra (a National Daily of Nepal) and the message issued by H. E. was also disseminated to media houses in Nepal and all NTPs of Member States of SAARC for media coverage.

Messages from National Dignitaries

Messages from Rt. Hon'ble Prime Minister of Nepal Mr. Jhala Nath Khanal, Hon'ble Deputy Prime Minister,



Releasing of STAC publication on the occasion of World TB Day 2011

Minister for Information & Communications, Health & Population and Land Reform & Management Mr. Krishna Bahadur Mahara, Secretaries, Ministry of Health & Population, Govt. of Nepal Dr. Prabin Mishra & Dr. Shudha Sharma, Director General, Department of Health Services, Govt. of Nepal Dr. Yashovardhan Pradhan and Director, SAARC TB and HIV/AIDS Centre and National TB Centre Dr. Kashi Kant Jha were published in the Gorkhapatra, National Daily of Nepal.

Printing and Distribution of STAC Publications

On the occasion, STAC distributed a brochure "General Information on Tuberculosis" specially published for World

TB Day 2011 along with other publications related to awareness on TB and HIV/AIDS.

Display of Banners/ Flexes

Banners displaying different slogans relating to TB and HIV/AIDS were displayed in the premises of joint function and main programme venue.

Exhibition

Number of flex posters with information on STAC and the activities for TB and HIV/AIDS prevention and control in Member States were developed and displayed in the exhibition hall at the entrance of venue of main function. At the end of the function the Chief Guest along

with the other dignitaries and visitors observed the exhibition.

Publication of Special Article

Special article titled "**Are we doing enough for TB control?**" – Time to introspect on World TB Day 2011, written by Dr. Kashi Kant Jha & Dr. V. S. Salhotra was published in REPUBLICA a National Daily Newspaper of Nepal on 24 March 2011.

Goodwill Ambassadors for NTP, Nepal

STAC congratulated Ms. Deepa Shree Niraula and Mr. Deepak Raj Giri for extension of their contract as TB Goodwill Ambassadors, NTP Nepal for the coming year.

1.4. Commemoration of World TB Day 2011 in SAARC Member States

The day was commemorated in all SAARC Member States by conducting awareness programmes on TB and its control. Activities organized to commemorate the day in Bhutan, Pakistan and in Sri Lanka were as follows:

Bhutan

The World TB Day was observed on 24th March 2011 in all 20 districts across the country with the slogan "**Strengthening and Innovating Strategy to Eliminate TB**". Each district have planned their activity

and observed the day in the identified venue by gathering the people from various walks of life. During the day, presentations on the following were made to the people who have gathered to observe the day:



- The objective of observing the day
- The Global and National scenario of TB
- The scenario of TB in their respective districts
- Question and answer session

Posters and Banners were displayed with the messages on World TB Day theme. Brochures on TB were also distributed to the gathering. After the above presentations, the floor was open for question and answer sessions, where many of the participants voiced their concern and participated actively.

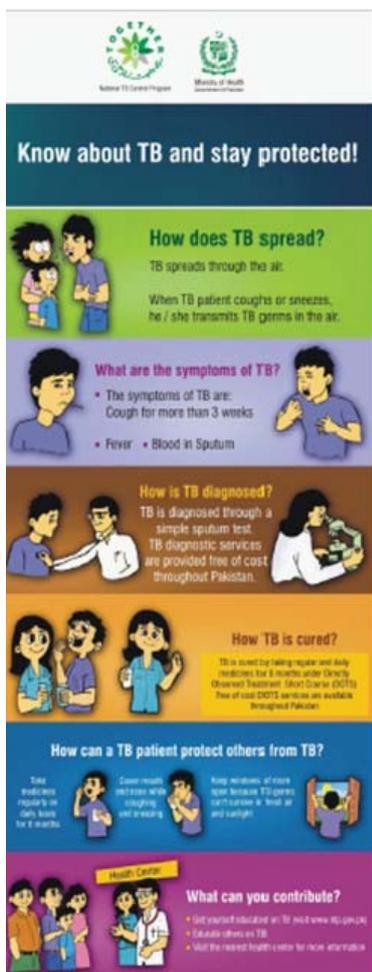
At the national level, the day was celebrated at the National referral hospital conference hall. Medical Doctors and other category of staffs of the national referral hospital marked the day on the above slogan. The Chief

Guest during the occasion was the Medical Director of the national referral hospital. The organizer welcomed all the guests for their presence to mark the day. After the welcome speech, presentations on the overall background of TB, the global burden, the situation of TB in Bhutan and the situation of TB in National referral hospital in particular were highlighted to the participants. The chief guest in his remarks said that TB is one of the age old diseases and is still a public health problem in Bhutan. He further mentioned that despite very good progress that has been made so far in controlling TB, there are challenges being faced like the emergence of MDR-TB and increase in number of HIV infections aggravating the situation of TB in Bhutan. To help reduce the transmission of TB, he said that early diagnosis and treatment is important.

The messages of the Hon'ble Minister of Health, WHO Regional Director's message and the SAARC Secretary General's message on World TB Day was published through the Media to create awareness among the population who have access to the print Media. In addition to this, an insert through the print media was also done containing the facts about TB. The day was marked successfully in all twenty districts across the country.

Pakistan

Every year National TB Control Programme (NTP) implements a number of activities to commemorate World TB Day in the month of March. Year 2011 is the second year of the two-year campaign of the Stop TB Partnership, on the move against tuberculosis, whose goal is to galvanize innovation in TB care and research. It is inspired by the ambitious new objectives and targets of the Global Plan to Stop TB 2011-2015: Transforming the Fight-Towards Elimination of Tuberculosis, which was launched by the Stop TB Partnership in October 2010. The campaign focuses on recognizing individuals – doctors, nurses, managers, patients, activists and advocates, and researchers



One of the awareness materials published by NTP, Pakistan on the occasion of World TB Day 2011

around the world who have found new ways to fight and stop TB in different settings and can serve as an inspiration to others. The campaign challenges us to look at the fight against TB in an entirely new way: that every step we take should be a step that counts for people and will lead us towards TB elimination.

Activities in connection with WTD 2011:

Series of activities by both public and private sector partners

took place all over Pakistan. A National Consultative Meeting with Provincial TB Control Programs and Partner NGOs was convened to develop WTDs plan of action, followed by a Press Conference with the objective to orientate the media personnel on Plan of Action in order to ensure their maximum participation in activities. This was followed by a National Seminar in the following week. NTP invited the Honorable Prime Minister to grace the occasion as Chief Guest. The event was attended by key stakeholders including representatives of Government Organizations, National and International NGOs, Donor Organizations, Bi-lateral Organizations, Media and Young People. The event highlighted the importance of commemorating World TB Day, the achievements of the National TB Control Program, its counterparts and partner NGOs. Similar events were organized at provincial and regional levels. Among the 47 districts in which Advocacy, Communication and Social Mobilization activities were implemented, sports events, community based awareness raising events, and media

briefings were also organized. Production and dissemination of promotional and Information, Education and Communication (IEC) material was also a part of World TB Day activities. During one week of activities the prominent places were branded with banners and streamers.

Sri Lanka

World TB Day 2011 was commemorated by organizing different activities in Sri Lanka. A Media Seminar was conducted on 23rd of March at Siyanco Holiday Resort, Polonnaruwa district. Several awareness programmes were conducted for school children in this district. To raise awareness on TB among the public a procession with different cultural activities was organized. The procession was participated by around 1500 participants including Political leaders, Doctors, Nurses, PHIs and PHMs, School children, Police and representatives of religious communities.

The main function was held at the Pulathisi Buddhi Mandapaya in Polonnaruwa district. The speakers of the function were Hon'ble Maithreepala Sirisena, Minister of Health, Sri Lanka, Mr. Viadimir P. Mikhylov, Russian Ambassador in Sri Lanka, Dr.

F. R. Metha, Representative, WHO, Dr. U. A. Mendis, Director General of Health Services, Dr. Sunil De Alwis, Director, National Programme for TB Control and Chest Diseases, and Hon'ble Pesala Jayarathna, Minister of Health, North Central province.

Guest speaker, Professor Sarath Wijesooriya from Colombo University made a speech on "Role of the Society in TB Control in Sri Lanka". This function was enlightened by musical events, stage drama and eastern cultural events.

In addition to the above mentioned activities, NPTCCD has conducted National level art and essay competitions. Health promotional items such

as T-shirts, Caps, Pens, Note Books, Banners, Posters, Leaflets, and Brochures were developed in three languages (Sinhala, Tamil & English) and distributed to all district chest clinics before 24th March. Banners and posters were displayed in every public places in the country.

Media campaign was launched for telecasting through Television, radio jingles were broadcasted. Docudrama of "Samawenna Nayanara" was telecasted in 24th March. Print media was used for paper supplement, articles and advertisements on the occasion of world TB day.

In parallel to the main event of the world TB day, two volley-ball

tournaments were conducted. The first tournament was within the staff of the NPTCCD v/s related institutions and another was inter-school tournament at Gampaha district.

Gampaha district has the second highest TB prevalence in the country therefore it was decided to conduct the Inter school volley ball tournament at this district in view of raising the awareness among the local community.

In addition to that district level programmes were conducted in all districts of the country to commemorate the World TB day with active participation of the school children and the community. The necessary guidance were provided by the staff of the 26 chest clinics.



Hon'ble Mr. Maithreepala Sirisena, Minister of Health, Sri Lanka addressing audience during World TB Day 2011 function organized at Pulathisi Buddhi Mandapaya in Polonnaruwa, Sri Lanka

2. SAARC Training on Computer-based Data Management on TB & HIV/AIDS, 21st -25th April 2011, Kathmandu, Nepal

SAARC TB and HIV/AIDS Centre (STAC), Kathmandu and Government of Nepal jointly organized SAARC Training on Computer-based Data Management on TB and HIV/AIDS for persons working on data in National TB Control and National AIDS Control Programmes in Nepal. The training was held on 21st - 25th April 2011 in Kathmandu.

The objectives of the activity were to strengthen the skills of participants in effective data management using analytical software programmes and to improve the knowledge and skills of participants in scientific report writing.

The training was attended by 26 participants from National TB and HIV/AIDS Control Programmes of Nepal.

Dr. V. S. Salhotra, Deputy Director, STAC delivered welcome address in the opening session of the training.

In the opening session, remarks were given by Dr. S. C. Verma, Senior Consultant Chest Physician, National TB Centre (NTC), Government of Nepal,



Dr. M. Akhtar, WHO Medical Officer, NTP, Nepal Dr. Ramesh Kumar Kharel, Officiating Director, National Centre for HIV & STD Control, Government of Nepal and Dr. Anoop Khanna, Associate Professor, Indian Institute of Health Management Research (IIHMR), Jaipur, India as Facilitator.

Dr. Kashi Kant Jha, Director, STAC and NTC, delivered opening remarks for the programme. Dr. Badri Thapa, Microbiologist, STAC delivered vote of thanks.

The session started with the introduction of data software, over view of MS Office and use of software for data management were discussed.

The other technical sessions were concentrated into different assignments, exercises, data management and analysis.

The participants and facilitators were awarded by Certificates on the last day of the training programme.

The training was facilitated by Dr. Anoop Khanna, Associate Professor, Indian Institute for Health Management Research (IIHMR), Jaipur, India and supported by local facilitators.

The outcome of the training was the enhancement of NT/NACP data management to produce accurate information which will ultimately facilitate the preparation of updated National and Regional reports.

Brief News

Signing on Headquarters Agreement:

Hon'ble Mr. Upendra Yadav, Deputy Prime Minister & Minister for Foreign Affairs, Government of Nepal and Her Excellency Uz. Fathimath Dhiyana Saeed, Secretary General, SAARC, signed two Headquarters Agreements between the Government of Nepal and the SAARC Secretariat for the SAARC Tuberculosis and HIV/AIDS Centre and the SAARC Information Centre on 3rd June 2011 in Kathmandu. The signing ceremony was attended by the Foreign Secretary and other senior officials of the Ministry of Foreign Affairs, Government of Nepal, Directors of both the Regional Centres and the concerned Directors from the SAARC Secretariat.

The Heads of State or Government during Male Summit held in



Hon'ble Mr. Upendra Yadav, Deputy Prime Minister & Minister for Foreign Affairs, Government of Nepal and Her Excellency Uz. Fathimath Dhiyana Saeed, Secretary General, SAARC

November 1990 decided to establish the SAARC Tuberculosis Centre and was renamed as SAARC Tuberculosis and HIV/AIDS Centre in November 2005. The SAARC Information Centre was established in 2005.

The Agreement will provide an overall framework for the smooth

functioning and operation of the Centres as the "Centres of Excellence" in their field of activities and for regulating the relations between the Centres and the Government of Nepal.

Welcome News

New Secretary General of SAARC

**SAARC TB and HIV/AIDS Centre has the honour to welcome
Her Excellency Uz. Fathimath Dhiyana Saeed, the Secretary General of SAARC.**

Her Excellency joined the Secretariat of South Asian Association for Regional Cooperation (SAARC) as Secretary General on March 1, 2011. She is the Tenth Secretary General of SAARC and is the first woman to occupy this prestigious position.



She is a former Attorney General of the Republic of Maldives and a former Parliamentarian. She was serving as Maldivian Government's Envoy for South Asia just prior to assuming her new assignment in Kathmandu. She holds a Master's Degree in Law from the Graduate School of Law and Politics, Osaka University, Japan.

New Director (Social Affairs), SAARC Secretariat

**SAARC TB and HIV/AIDS Centre has the honour to welcome
Mr. Ibrahim Zuhuree, the Director, (Maldives), SAARC Secretariat, Kathmandu.**

Mr. Zuhuree is graduated with a bachelor's degree in Applied Mathematics and Physics from the University of Western Australia in 2004. Volunteer for NGOs, educator and registered teacher, he worked as Head of the Mathematics and Physics Departments in Secondary Schools in the Maldives. He completed Master's degree in Public Policy and Management, with Highest Distinction, from Carnegie Mellon University, in 2007.



He did executive development program on Public Administration and Good Governance at the Korea International Corporation Agency in 2008 and Training Programme on International Relations & Diplomacy organized by the Bandaranaike Centre for International Studies in 2009.

He worked at the Department of External Resources in the Ministry of Foreign Affairs of Maldives before taking the responsibility as Head of SAARC Division in 2008.

Currently he is in charge of the Social Affairs Division at the SAARC Secretariat. STAC family extends the best wishes for his successful mission in the SAARC.

Appointment of New Professional Staff at STAC

Dr. Badri Thapa, (Nepal)
M.B.B.S., Ph.D.

Dr. Thapa joined SAARC TB and HIV/AIDS Centre (STAC) as a Microbiologist on 8th March, 2011. He graduated as Ph.D. in Medical Microbiology in 2009 from Faculty of Medicine, Siriraj Hospital, Mahidol University, Thailand. He received Siriraj Graduate Thesis Scholarship and has been awarded as the “Outstanding Student of Mahidol University for the year 2009”.



He obtained his Medical Graduation from Bangladesh in the year 2000. He started his career as Medical Officer at Emergency Department, Bir Hospital, Kathmandu during the year 2001 following which he served Nepal Army as a Medical Officer until 2005. After his graduation as a Ph.D. in Medical Microbiology, he worked as a Lecturer in Department of Microbiology in Kathmandu Medical College from 2009-2010. He has also worked as a part time consultant for HIV and AIDS Program Management Unit of UNDP, Nepal. He also worked at PMU/GFATM in Epidemiology and Disease Control Division, Government of Nepal as a program co-ordinator for Malaria.

He has published numerous scientific papers in National and International journals, reviewed Microbiology text books and is a reviewer for various biomedical journals.

Dr. Naseem Khan Afridi, (Pakistan)
M.B.B.S., M Sc Epidemiology & Biostatistics (AKU)

Dr. Naseem Khan Afridi joined SAARC TB and HIV/AIDS Center as a Professional staff on the post of Epidemiologist on 3rd May 2011.

He completed his M.B.B.S. from Khyber Medical College, Pakistan and obtained his Masters of Science degree in Epidemiology & Biostatistics from Aga Khan University, Karachi Pakistan.



He started his career as a Medical Officer in Health Department Govt. of Khyber Pakhtunkhwa and later became Epidemiologist. He worked as faculty to MPH program at Provincial Health Services Academy. He was also visiting faculty to MPH program at ICMS and SARHAD University. He has been consultant and principal investigator in a number of research studies particularly in the field of vaccination, tuberculosis and HIV/AIDS. He has developed the PC-I of Roll Back Malaria (RBM) program for Health Department Govt. of Khyber Pakhtunkhwa.

STAC staff whole heartedly welcome Dr. Thapa and Dr. Afridi in STAC family and wish them success in days to come.

Participation in National/Regional International Activities

- **Consultation and Pre-consultation Meeting**

Dr. V. S. Salhotra, Deputy Director, SAARC TB and HIV/AIDS Centre represented in the Asia and Pacific Regional Consultation on Universal Access to Prevention, Treatment, Care and Support meeting held from 30th to 31st March, 2011 and Pre-consultation Meeting on 29th March, 2011 in Bangkok, jointly organized by UNAIDS and ESCAP.

- **SAARC Consultative Meeting of Positive Women's Network**

Dr. Kashi Kant Jha, Director and Dr. Naseem Khan Afridi, Epidemiologist, SAARC TB and HIV/AIDS Centre participated in SAARC Consultative Meeting of Positive Women's Network, organized by SAARC Secretariat in Kathmandu from 17th to 18th May 2011. The theme of the meeting was Universal Access for Women and Girls Living with HIV in the SAARC Region - "Enhancing the role of Positive People's Women's Network". In the meeting Dr. Jha made a presentation on SAARC HIV Strategy – Women and Girls. Her

Excellency Uz. Fathimath Dhiyana Saeed, Secretary General, SAARC inaugurated the meeting.

The two day meeting was attended by representatives from all the SAARC Member States, SAARC TB and HIV/Centre, UNDP, UNAIDS and APN+.

- **Fifth Meeting of SAARC Expert Group on HIV/AIDS**

Dr. Kashi Kant Jha, Director and Dr. Naseem Khan Afridi, Epidemiologist, SAARC TB and HIV/AIDS Centre participated in Fifth Meeting of SAARC Expert Group on HIV/AIDS held at SAARC Secretariat from 19th to 20th May 2011. In the meeting, Dr. Jha made a presentation on TB and HIV/AIDS scenario in the Region and work of the Centre.

- **National Training Plan on HIV/AIDS**

Mr. K. B. Karki, Training Officer, STAC participated in formulation of National Training Plan on HIV/AIDS organized by National Centre for AIDS and STD Control, Teku, Kathmandu on 20th May 2011.

Special Article and Technical Information

Are we doing enough for TB Control? Time to introspect on World TB Day, 2011

*Dr. Kashi Kant Jha, Dr. V. S. Salhotra
SAARC TB and HIV/AIDS Centre*

24th March is the day when in 1882, Dr. Robert Koch announced the discovery of *Mycobacterium tuberculosis*. The discovery of the TB bacillus in 1882 was a major advance in the understanding of transmissible diseases, and was important in the development of the germ theory of disease. Following this discovery, and the development of the BCG vaccine, the control of TB was increasingly based on the biological understanding of the disease. This approach received a final boost with the discovery in the 1940s and 1950s of drugs that cure TB. Eventually these discoveries led to the development of the paradigm that "prevention starts with cure".

It has been more than 125 years since the discovery and the world, especially the developing countries are striving to control

the menace of Tuberculosis. World Health Organization and International Union against Tuberculosis & Lung Diseases initiated the commemoration of World TB Day on 24th March, 1992, exactly 100 years after the discovery of the causative agent by Dr. Robert Koch. Since then, The World TB day is commemorated all over the world to raise awareness among the general public on tuberculosis and to advocate for the strengthening and sustaining the Tuberculosis control activities.

According to the estimates by WHO, there were 14 million Tuberculosis cases worldwide in 2009. In that particular year an estimated 9.4 million new cases and an estimated 1.7 million persons died due to causes related to Tuberculosis, including 0.4 million HIV positive cases.

The Tuberculosis problem has been further complicated by HIV epidemic. The HIV infected are more prone to develop Tuberculosis compared to HIV negatives. HIV positive persons have 10% risk of developing Tuberculosis every year whereas there is a 10% lifetime risk of developing Tuberculosis in HIV negatives. Tuberculosis is also being complicated by the emergence of Multi Drug Resistant Tuberculosis (form of Tuberculosis in which the bacteria are resistant to the two most potent drugs to treat – INH and Rifampicin). As per latest estimates, 0.44 million cases of Multi Drug Resistant Tuberculosis emerged in the year 2008.

The SAARC Region (comprising of Afghanistan, Bangladesh, Bhutan, India, Nepal, Maldives, Pakistan & Sri Lanka) is also facing huge

burden of Tuberculosis. An estimated 2.7 million people develop Tuberculosis with about 1.2 million being smear positive infectious cases in the year 2009. The SAARC Region with about 23% of the global population has disproportionate burden of tuberculosis, having about 29% of the global incidence of Tuberculosis. It is estimated that about 128000 cases of MDR-TB occurred in the SAARC Region in 2009. Afghanistan, Bangladesh, India and Pakistan, out of the SAARC region are amongst the 22 high burden countries globally.

At the Global level, WHO recommended Stop TB Strategy is being followed including 22 high burden countries. The New Stop TB Strategy, launched by WHO in 2006, sets out the major interventions that should be implemented to achieve the MDGs, Stop TB Partnership and World Health Assembly targets. These are divided into six broad components:

- (i) Pursuing high-quality DOTS expansion and enhancement;
- (ii) Addressing TB/HIV, MDR-TB and the needs of poor and vulnerable populations;
- (iii) Contributing to health-system strengthening

based on primary health care;

- (iv) Engaging all care providers;
- (v) Empowering people with TB, and communities through partnership; and
- (vi) Enabling and promoting research.

The major indicators for gauging performance of National Tuberculosis Control Programmes are Case Detection and Treatment Success rates. At the global level, the case detection rate was 63% and the treatment success rate was 86% in 2008/09. In the SAARC region, the case detection rate was 72.5% and success rate was 87.9% in 2008/09.

The Stop TB Partnership under WHO has endeavored to achieve the Millennium Development Goal of halting and beginning to reverse the incidence of Tuberculosis by 2015 and has targeted to halve the prevalence and mortality rates by 2015 compared to 1990 levels. The incidence of Tuberculosis is already in decline. SAARC Region is on track to achieve the Millennium Development Goal and targets for Tuberculosis by 2015. The Stop TB Partnership is striving to eliminate Tuberculosis by

2050- less than 1 TB case per million population.

Are we on track to achieve the TB Elimination Goal? The National TB Control Programmes are doing well in the area of TB Control. Considerable advances have been made to reduce the morbidity and mortality arising due to Tuberculosis. Tuberculosis control is on the agenda of the national governments and international community and organizations and there has been immense increase in the pumping of financial resources for tuberculosis control. The Global Fund for Tuberculosis has emerged as a major contributor apart from bilateral and multilateral assistance sources. New Drugs and Diagnostics for Tuberculosis are being developed. While some new diagnostics have been recommended for adoption by the National Programmes, their use is limited by their high expenses. The new drugs for treatment of tuberculosis will still take some time to be available for use by the National Programmes. While, the National TB Control Programmes of all the High Burden countries have started addressing the threats of HIV

and MDR-TB for TB Control, the action is still slow and the National Programmes need to gain momentum in these areas.

It has been estimated through modeling that even if all the achievements under the Global Plan to Stop TB are made, still there would be about 100 cases per million population by 2050—more than 100 times the target of TB elimination.

It is well known that there are many direct and indirect factors responsible for development of Tuberculosis. On an average, people from groups of low socioeconomic status are more likely to have more frequent contact with people with active TB disease; more crowded and poorly ventilated living and working conditions; more limited access to safe cooking facilities; more food insecurity; lower levels of awareness or less power to act on existing knowledge concerning healthy behavior (for example safe sex, smoking, diet and alcohol use); and more limited access to high-quality health care. The active TB disease in the community, overcrowded conditions, poor ventilation, tobacco smoke, air pollution, HIV, Diabetes, malnutrition, lung disease, alcoholism are the factors which

make significant contributions to the emergence of new Tuberculosis cases in the community.

The industrialization brought about rapid economic growth but uneven distribution of wealth and limited social reform. The most rapid declines in TB incidence and death rates ever recorded were, on the other hand, in places where economic growth was coupled with social and health sector reforms and important medical advances. Progress in TB control in the industrialized countries over the past century was brought about by a combination of economic, social, public health and medical advances. The future success of TB control may depend on progress in all of these areas, especially because rapid urbanization, inequitable economic growth, widening income gaps and the presence of large pockets of social deprivation are still common in many countries with a high TB burden.

So, do we continue to address the TB problem in the same vein or do we need to do something more. Indeed, a lot more is required. While the Health Ministries need to address the problem through

strengthening of the Health Policies, strengthening health systems, inter programme collaborations, addressing inequities and health systems access issues, tackling the factors directly responsible for development of Tuberculosis and investing increased financial and human resources. The National Governments need to strengthen development policies and address inequities in development. The ultimate responsibility to address the social determinants that drive TB epidemics rests with several stakeholders, both governmental and nongovernmental. The responsibility goes well beyond the traditional realm of national TB programmes and well beyond the boundaries of ministries of health. For example, ministries of finance, education, social welfare, trade, labour and environment have important roles to play. In addition, civil society and the private corporate sector need to contribute.

So, it is time to shift to “Prevention combined with Cure for TB Control”. On the occasion of World TB Day, let’s pledge to do much more for TB Control.

Latent Tuberculosis in high risk groups: A Challenge for Tuberculosis Control Programme

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Abstract

One third of world's population is infected with latent tuberculosis infection (LTBI) and 5-10% of these have a lifetime risk of developing tuberculosis (TB) disease. Moreover, co-infection and the interplay between host-pathogen aggravate the situation and conversion of LTBI to active disease is a threat to TB control program. Detection of LTBI in high-risk groups through conventional Tuberculin Skin Test and modern Interferon-gamma Release Assays and its treatment can help TB control program to overcome the challenge put forward by LTBI. However, implementing recommended Isoniazid Preventive Therapy (IPT) faces challenges in our region.

Key words: Latent tuberculosis, Tuberculosis control programme, Tuberculin skin test, Interferon-gamma release assay

I. Introduction

Tuberculosis (TB) is an important infectious disease caused by *Mycobacterium tuberculosis* (MTB) with high morbidity and mortality. One third of world's population is infected with TB and most of these people estimated to have latent TB infection (LTBI) have a 5-10% lifetime risk of developing active TB¹. Furthermore, in the era of full-blown HIV pandemic, HIV is a potent risk factor for progression from latent to active TB. The risk of progression to active disease in a person coinfecting with MTB and HIV is 10% annually¹. Tuberculosis control program in the region is currently aiming on active case detection

through AFB smear microscopy and treatment through directly observed treatment short course (DOTS)². Furthermore misdiagnosis is a common phenomenon that is observed in several instances³. This lack of progress in TB control is, in part, reflected by a poor understanding of the fundamental relationship between MTB and the human host, especially LTBI⁴. If LTBI can be detected in high-risk groups then they can be prevented from developing active disease and chain of transmission can also be blocked. Subsequently, the administration of LTBI therapy can reduce the risk of developing active disease in this population. This article aims to provide a review on technical aspects of LTBI, the challenges of LTBI in TB control programme, diagnosis and its treatment.

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II. Methods

Literature was reviewed using the google search engine (31st may 2011) to identify articles related

to LTBI. The key words entered were, latent tuberculosis, high-risk groups, diagnosis of latent tuberculosis, treatment of latent tuberculosis, tuberculin skin test and interferon gamma release assays. Only articles related to the scope of review were selected. Literature was further updated reviewing the bibliographies of the articles and the reviews on this topic. This review aims to disseminate information on latent tuberculosis, challenges, diagnosis, treatment regimens and recommendations.

III. Results

III.1. Latent Tuberculosis Infection (LTBI)

TB infection and TB disease are two binary states. The transition points between these states are one of the three clinical outcomes, “primary TB disease”, “LTBI” and reactivation or post primary TB disease⁵. These transition points are interplay between host-pathogen interactions. In a person with intact immunity, the immune response controls and limits the infection and hence the individuals remain free from disease for prolonged period of times but these people are immunologically sensitized to MTB and have evidence of the infection. Immunological basis for this is that following exposure to MTB, infection may either be eliminated by the innate immune response (without the need for T cell priming) or eliminated following development of an acquired immune response. Those who are unable to prevent or eliminate infection following exposure have evidence of T cell priming and maintain low bacillary numbers and remains asymptomatic. However, loss of immune control and escalating MTB load may subsequently lead to the development of symptoms and overt clinical disease. HIV infection is the most potent risk factor for the development of TB disease. HIV coinfection has a fundamental impact on the

spectrum of the host-pathogen relationship with a general shift towards poor immune control, high bacillary numbers, and subsequent development of active infection and symptomatic disease. The lifetime risk of progression to active disease in a person coinfecting with MTB and HIV is 10% to 60% annually¹. Recurrent exogenous re-exposure to MTB in high TB prevalence settings is also very likely to play an important role, further increasing bacillary numbers and increasing the likelihood of progression to disease⁵.

III.2. LTBI and the challenge to TB control programme

TB remains a major threat to global public health in the 21st century. In 2009, WHO estimated that that 9.4 million cases of TB occurred and 5.8 million cases were notified of which 2.6 million were New Smear-Positive TB cases². The diagnosis of active TB in TB control programme has been primarily based on the early diagnosis through sputum smear microscopy of patients presenting with symptoms (cough, night sweats and weight loss), which only detects active disease. However, the majority of individuals is exposed to MTB and harbor LTBI in whom sputum smear microscopy is not helpful. It is to be noted that the individuals with LTBI can develop active disease at any time in their lifetime fueling the TB burden and making TB control programme ineffective.

Furthermore, several risk factors have been identified in the development of active disease like, HIV infection, patient on hemodialysis, transplantation/silicosis, diabetes, carcinoma of head and neck, treatment with chemotherapeutics and corticosteroids, underweight and age less than 5 years when infected⁶. Most importantly, HIV is one of the most potent risk factor for development of active TB disease. HIV leads to an increased risk of rapidly progressing primary

TB following exposure and also an increased risk of reactivation of LTBI. Postmortem studies of HIV infected patients showed that one third of deaths in HIV infected and half of deaths in AIDS defining disease were caused by TB⁴. A study in Africa and Asia has also shown that culture proven HIV-associated TB were free of symptoms. This suggests that TB is clinically unsuspected and under diagnosed leading to high morbidity and mortality. Furthermore, sub-clinical active TB is prevalent in HIV infected individuals under antiretroviral treatment. Screening of TB in HIV infected individuals showed that every 4 out of 100 screened were positive⁷. This significantly shows that the LTBI among HIV infected individuals is high.

There are more than 2 billion LTBI cases worldwide and about 33 million HIV infected cases and as high as 60% of HIV infected individuals develop active TB disease. HIV infected individuals harboring LTBI is a challenge for the TB control programme. Early detection and treatment of LTBI in high-risk groups may help TB control programme to meet this challenge. If LTBI can be detected in high-risk groups through conventional and modern diagnostic tools (reviewed in section below) then they can be prevented from developing active disease and chain of transmission can also be blocked.

III.3. Diagnosis of LTBI

III.3.1. Tuberculin Skin Test

Before 2001, clinicians have used the tuberculin skin test (TST) for diagnosis of LTBI. TST has been a sole tool to diagnose LTBI in contacts of persons recently diagnosed with active pulmonary TB, foreign-born persons and visitors from TB-endemic countries, especially immigrants who have arrived in the last two years, people who

are at increased risk of progression to active TB disease due to impaired immunity and people with radiographic evidence of old, healed TB without history of treatment⁶. This is a cost effective tool for the diagnosis of LTBI but this has several limitations. This takes 72 hours for the result and has poor specificity in populations vaccinated with BCG and infected with non-tuberculous mycobacteria (NTM)^{1,6}. False negative results are also obtained with poor injection technique, immune suppression, major viral illness in the past (measles, mumps, mononucleosis), live-virus vaccine in the past 4 weeks (measles, mumps, rubella, varicella, yellow fever), malnutrition and severe illness^{1,6}.

III.3.2. Interferon-gamma release Assay (IGRAs)

Recently, IGRAs have emerged as attractive alternatives for the diagnosis of LTBI¹. IGRAs have been approved by FDA for use in the United States; the original QuantiFERON®-TB test (QFT) and the recently (2005) approved QuantiFERON®-TB-Gold test (QFT-G), QuantiFERON-TB Gold In-Tube test (QFT_GIT) and T-SPOT.TB test (T-SPOT)^{5,8}. These tests use proteins that are secreted by all *M. tuberculosis* and pathogenic *M. bovis* strains. These proteins are absent from all Bacille Calmette-Guérin (BCG) vaccine strains and from commonly encountered nontuberculous mycobacteria (NTM) except *M. kansasii*, *M. szulgai*, and *M. marinum*^{1,8}.

IGRA results can be available in less than 24 hours after testing without the need for a second visit. As a laboratory-based assay, IGRA is not subject to biases and errors. Moreover, IGRAs do not trigger an anamnestic response (i.e., boosting). However, errors in collecting or transporting blood specimens or in running and interpreting the assay can decrease the accuracy of IGRAs.

Each of these tests (TST, QFT, QFT-G, QFT-GIT) relies on a different immune response and differs in its relative measures of sensitivity and specificity. QFT-G has high specificity and moderate sensitivity. A specificity of 98.1% was reported in 216 BCG-vaccinated Japanese nursing students who were entering their training and who were at low risk for *M. tuberculosis* infection, and a sensitivity of 89.0% was reported in 118 patients with culture-confirmed TB⁸. Test such as ELISpot is also available for diagnosis of LTBI.

TST positive individuals have a 60% risk of developing active TB⁹. A study has shown that IGRA positive HIV individuals have high-risk (8-12%) of developing active TB disease in the future¹. IGRAs can substitute TST as IGRAs can be used in all circumstances in which the TST is used⁵, including contact investigations, evaluation of recent immigrants who have had BCG vaccination, and TB screening of health-care workers and others undergoing serial evaluation for MTB infection.

IV. Treatment for LTBI

The development to active disease in person coinfecting with HIV and MTB is as high as 60% and the fact that 33 million people are infected with HIV, the person having LTBI and developing active TB disease is also high. Treatment of LTBI among high-risk group like HIV is promising to control and eliminate TB. Treating LTBI substantially reduces the risk of developing active TB disease in this risk group.

Other groups are also at risk of developing TB disease once infected like, recent contacts of a TB case, persons with fibrotic changes on chest radiograph consistent with old TB and patients with organ transplants, persons who are

immunosuppressed for other reasons (e.g., taking the equivalent of >15 mg/day of prednisone for 1 month or longer, taking TNF-g antagonists). Effort should be made to begin appropriate treatment for LTBI if their reaction to the TST or IGRA is ≥ 5 mm or positive respectively^{6,10}.

Furthermore, persons in the following high-risk groups like, recent arrivals (< 2 years) from high-prevalence countries, injecting drug users, residents and employees of high-risk congregate settings (e.g., correctional facilities, nursing homes, homeless shelters, hospitals, and other health care facilities), mycobacteriology laboratory personnel, persons with clinical conditions that make them high-risk, children under 5 years of age, or children and adolescents exposed to adults in high-risk categories should be considered for treatment of LTBI if their reaction to the TST or IGRA is ≥ 10 mm or positive¹⁰. Persons with no known risk factors for TB may be considered for treatment of LTBI if their reaction to the tuberculin test is ≥ 15 mm or IGRA is positive. Treatment of general populations harboring LTBI and following the treatment under DOTS is almost unimaginable. However, treatment of LTBI in high-risk groups is not impossible. WHO recommends Isoniazid preventive therapy (IPT) for people living with HIV. Among HIV individuals, the IPT reduces the development of active TB by 33%⁹.

IV.1. Regimens

Treatment should be started after excluding the active disease. Isoniazid Preventive Therapy (IPT) is given for HIV and TB coinfecting individuals and nine months regimen is most effective^{4,10}. Drug regimens recommended for treating LTBI are given in the table.

Table : Drug regimen for treating LTBI

Drugs	Regimen	Interval	Minimum No. of doses for treatment completion	Rating for HIV-negative persons	Rating for HIV-positive persons
Isoniazid	9 month	Daily	270	A (II)	A (II)
		Twice weekly	76	B (II)	B (II)
Isoniazid	6 month	Daily	180	B (I)	C (I)
		Twice weekly	52	B (II)	C (II)
Rifampin	4 month	Daily	120	B (II)	B (III)
Rifampin and Pyrazinamide	2 months	The combination of rifampin and pyrazinamide is generally not recommended for the treatment of LTBI.		D (II)	D (II)

This table has been reproduced with slight modification from <http://www.cdc.gov/tb/publications>. **Strength of recommendation:** A = preferred; B = acceptable alternative; C = offer when A and B cannot be given; D = should generally not be offered. **Quality of supporting evidence:** I = randomized clinical trial data; II = data from clinical trials that are not randomized or were conducted in other populations; III = expert opinion.

IV.2. Monitoring

The LTBI treatment should be monitored for drug adverse effects.

V. Recommendations

A high-risk group who are infected with LTBI can be effectively treated before progression to full-blown TB disease. Several evidences show that TST has been successfully used in identification of persons who are at increased risk for poor clinical outcomes like, meningitis, disseminated disease, or death. TST has several limitations and IGRAs are up coming as an alternative, which equally serves the purpose of TST. Considering the limitations of TST and numerous benefits to the patients provided by IGRAs, it is worthwhile to

invest on IGRAs for detecting LTBI among high-risk groups. HIV is a potential factor for failure to meet the TB control targets. TB is a major cause of death among people living with HIV/AIDS. The rapidly increasing HIV epidemic in this region is also increasing the TB cases. Hence, TB control program should integrate its services with other programmes like, HIV and screen HIV infected individuals and other risk groups like, migrants coming from TB and HIV endemic places, laboratory personnel, medical staff working in hospitals, children of individuals with TB disease, recent contacts of TB case, patients on immunosuppressive drugs and transplant patients to decrease the TB burden among these risk groups. It is worthwhile to detect LTBI among these risk groups and treat them rather than waiting for them to develop TB disease.

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