



STAC

Newsletter



Vol. XXII, No. 1. Jan.- Jun. 2012

In this issue

Report on Activities	Page No.
1. Public Awareness and Advocacy on TB & HIV/AIDS	
1.1. Commemoration of World TB Day, 2012	
- Partnership Programme with Journalists on prevention and control of TB -----	1
- Joint Programme-----	2
2. SAARC Regional Training of Trainers for Microbiologist on Culture and DST of Mycobacterium Tuberculosis -----	3
3. SAARC Consultative Meeting of Programme Managers of HIV/AIDS to revise the SAARC Regional Strategy on HIV/AIDS (2012-2016)-----	4
Brief News	
- Welcome to H. E. Secretary General of SAARC-----	6
- Inauguration of STAC Building-----	6
- Audit of Accounts of STAC for the year 2011 -----	7
- Farewell to Dr. V. S. Salhotra, Deputy Director, STAC--	7
- Visits to STAC-----	8
Participation in National/Regional/International Activities	
- Meeting of SAARC Health Ministers -----	8
- Meeting of the SEA Regional TWG-----	9
- Workshop on Country Capacity Building on WHO Collaborating Centres-----	9
News on NTP/NACP of SAARC Member State	
- Newer Initiatives by Revised National TB Control Programme, India -----	9
Special Article and Technical Information	
- Totally Drug Resistant Tuberculosis (TDR-TB): A Challenge! -----	10
- Early diagnosis of Tuberculosis: Global need-----	12



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.

For more information and correspondence, please contact

SAARC Tuberculosis and HIV/AIDS Centre, Thimi, Bhaktapur, G. P.O.Box No. 9517, Kathmandu, Nepal

Tel: 00977-1-6632601, 6632477, 6631048, Fax: 00977-1-6634379, E-mail: saarctb@mos.com.np Website: www.saarctb.org



Editorial

Infectious waste: a worst nightmare

Number of patients admitted to hospital for treatment of diseases, including the infectious ones is on the rise. They acquire infections in the community while some catch infections during their stay in the hospital. In fact, patients in hospitals become the source of origin of infectious waste in tons every day. The Environmental Protection Agency (EPA) reports that approximately 3.2 million tons of medical wastes from hospitals are generated each year in a State of United States of America alone. In 1987, the EPA reported the total generation rate of hospital wastes at 5,900 tons/day. This figure is based on the number of hospital beds estimated to exist and per bed per day generation rate was 13 pounds. Currently, most generators of medical waste designate between 10 to 15 percent of it as infectious. These wastes have a probable risk of transmitting disease in the community.

These infectious waste may include wound dressing pads, surgical removal of infected debris, catheters (urinary, central venous, intravenous) inserted into patients suffering from infectious disease, needles used for aspiration of infectious materials, nasogastric and endotracheal tubes, blood, urine and feces of the hospitalized patients, microbiological laboratory waste etc. These infectious waste segregation, treatment and disposal procedures are in place in some Member States while not in others. In 2002, the results of a WHO assessment conducted in 22 developing countries showed that the proportion of health-care facilities that do not use proper waste disposal methods ranges from 18% to 64%.

The hospital originated waste materials are openly thrown as garbages. These materials consists wide array of multi-resistant and virulent pathogens including HIV and hepatitis viruses. WHO estimated that, in 2000, contaminated injections with contaminated syringes caused: 21 million hepatitis B virus (HBV) infections (32% of all new infections); two million hepatitis C virus (HCV) infections (40% of all new infections); and at least 260 000 HIV infections (5% of all new infections).

Hospital is a place where numerous potent antibiotics are used and pathogens usually escape from these antibiotics evolving in numerous ways. They can survive for longer duration and has been a potential source of infections for people hovering around the garbage to find their cache. The rain water flushes these pathogens and carries to the river which is ultimately contaminated.

Similarly, hospital originated waste materials if not treated and disposed appropriately the pathogens can finally find their way through small drains to the river. These pathogens pass through the fertile cultivable lands and the little noticed fact is that the same water gets used not only for cleaning vegetables, but also by hotels, hospitals and residences in water deprived localities in the region. Water contamination by environmental and fecal pathogens has been found in several places and has been a source of infection outbreak in and around hospitals and communities. On top of this, environmental pathogens are emerging independently as multidrug-resistant. Unanimous use of several antibiotics for patients and in fisheries, veterinary and agriculture forces bacteria to survive against antibiotics. If a single multidrug-resistant and virulent bacterium escapes from a hospital and find its way to the water source it can proliferate to 5000 billion billions with a multiplication time of 20 minutes within 24 hours and can cause difficult-to-treat community outbreaks. The greatest risk to public health from microbes in water is associated with consumption of drinking-water that is contaminated with human and animal excreta and the waste originated from the patients in the hospital is also significant.

The degree of risks posed by medical wastes is still underestimated. Proper policies and strategy to segregate, treat, and dispose these wastes can result in minimal health and environmental risks. There is a regional need for coordination and cooperation to address this issue.

Editorial Board

Chief Editor:

Dr. Kashi Kant Jha

Editors:

Dr. V. S. Salhotra

Dr. Badri Thapa

Dr. Naseem Khan Afridi

Editorial Board Members from the Member States:

National TB Control Programme

Dr. Khaled Seddiq, Afghanistan

Dr. Md. Nuruzzaman Haque, Bangladesh

Mr. Chewang Rinzin, Bhutan

Dr. Ashok Kumar, India

Mr. Abdul Hameed Hasan, Maldives

Dr. Kashi Kant Jha, Nepal

Dr. Ejaz Qadeer, Pakistan

Dr. Sudath Samaraweera, Sri Lanka

National HIV/AIDS Control Programme

Dr. Feda Mohammad Paikan, Afghanistan

Dr. Sydur Rahman, Bangladesh

Mr. Namgay Tshering, Bhutan

Mr. Sayan Chatterjee, India

Mr. Abdul Hameed Hasan, Maldives

Dr. Krishna Kumar Rai, Nepal

Dr. Qazi Mujtaba Kamal, Pakistan

Dr. Nimal Edirisinghe, Sri Lanka

Report on Activities

1. Public Awareness and Advocacy on TB & HIV/AIDS

1.1. Commemoration of World TB Day 2012

“Stop TB in my lifetime”

World TB Day provides an opportunity to raise awareness about TB-related problems and solutions and to support worldwide TB control efforts. March 24 of every year is World TB Day, which commemorates the date in 1882 when Dr. Robert Koch announced his discovery of *Mycobacterium tuberculosis*, the bacillus that causes tuberculosis (TB) and a leading cause of death from infectious disease worldwide.

The theme of the World TB Day 2012 was “Stop TB in my lifetime” which underlines the fact that everyone can make his or her responsibility to eliminate the deadly disease from the face of the earth in the foreseeable future. The day offers an opportunity to focus on TB-related problems and solutions and to support worldwide efforts to control TB.

On the occasion of the Day following activities have been organized:

Partnership Programme with Journalists on Prevention and Control of TB

SAARC TB & HIV/AIDS Centre (STAC) and National TB Centre (NTC), Thimi, Bhaktapur, Nepal jointly organized a Partnership

Programme with Journalists on Prevention and Control of Tuberculosis on 21st March 2012 at STAC, Thimi, Bhaktapur.

The objective of the programme was to enhance public awareness on TB and its prevention & control by making media aware on situation of TB and achievements of control programmes in Nepal & SAARC Member States.

Dr. Kashi Kant Jha, Director, STAC/NTC highlighted the objectives of the programme and appealed the participants to be part of the solution. He also highlighted that this programme was organized to strengthen media partnership on TB control. He explained the theme of the Day “Stop TB in my lifetime”.

A press release was also issued by STAC/NTC on this occasion.

Dr. S. C. Verma, Senior Consultant Chest Physician, NTC gave his presentation on “Status of TB Control in Nepal & its achievements”. Dr. V. S. Salhotra, Deputy Director, STAC gave a presentation on “Status of TB Control in SAARC Region”.

Journalists asked several questions regarding the status of TB control in Nepal and its challenges. They also expressed their willingness to know more about the TB control status in SAARC Region.

More than 50 participants from different electronic and print media, they were National News Agency (RSS), RSS English, Prakshpan Daily, Gorkhapatra, Nepal Television, Radio Nepal, Kantipur Daily, Kantipur TV, Sagarmatha TV, ABC TV, Himalayan TV, Madhyapur Post,



Dabab, Samachar Patra, Thimi-Times, Citizen Media Nepal, Teachers' Monthly, Atlas-Alliance, Majdur Daily, Uniq Post, Bhaktapur.com/Rafat Sanchar +STV, Terai Television/Samaya Smaj Saptahik, Bhaktapur FM, News of Masik, Ujyalo FM, Dharahara Times, National News, Nepal Bhumi, Loktantrik Dabab, Hamro Samaj, Nepal Samachar Patra, Annapurna Post, Sandhya Drishti, Sandhya Times Daily, etc. participated in the programme.

Joint Programme

A joint programme was organized as main activity on the occasion of World TB Day on 23rd March 2012 by Government of Nepal, NTP, STAC, WHO, NATA, BNMT and other different organizations working for control of TB in Nepal at Nepal Academy, Kathmandu under the Chairpersonship of Dr. Praveen Mishra, Secretary, Ministry of Health & Population, Government of Nepal. Mr. Rajendra Mahato, Hon'ble Minister for Health & Population graced the occasion as Chief Guest. Mr. Ibrahim Zuhuree, Director, SAARC Secretariat attended the programme as

Representative of His Excellency, the SAARC Secretary-General.

The Chief Guest inaugurated the programme by lighting the traditional oil lamp and delivered his remarks. Dr. Saroj Rajendra, Acting Director General, Dept. of Health Services gave welcome remarks. Dr. Kashi Kant Jha, Director, STAC and NTC made presentation on achievements of NTP of Nepal. Dr. V. S. Salhotra, Deputy Director, STAC made a presentation on situation of Tuberculosis in the SAARC Region. Mr. D. B. Pradhan, President NATA, Dr. Lin Aung, WR Nepal, Mr. Ibrahim Zuhuree, Director, SAARC Secretariat gave their remarks. There was an announcement of extension of contract with Mr. D. R. Giri and Ms. D. S. Niraula as Nepal's TB Goodwill Ambassadors for the coming year.

A vote of thanks was delivered by Dr. S. C. Verma, Sr. Consultant Chest Physician, NTC, Nepal.

As Chairman of the programme,

Dr. Praveen Mishra, Secretary, Ministry of Health & Population, Government of Nepal delivered his remarks.

Releasing of Publications

The Chief Guest released the Annual Report 2011 of SAARC TB and HIV/AIDS Centre.

Exhibitions

An exhibition was jointly organized at the venue. In the exhibition, STAC highlighted the awareness on TB along with status of TB and HIV/AIDS in the SAARC Region. Acid Fast Bacilli (AFB) were also displayed in the teaching microscope. This exhibition was observed by the Chief Guest, Chairperson along with the other guests and visitors of the function.



Awareness Material

STAC prepared T-shirts with the World TB Day 2012 theme and distributed to SAARC Regional Centres, National TB Control Programmes of Member States,



Back view

Front view

SAARC Secretariat, WHO, NGOs/INGOs, UN Agencies and organizations working for TB control.

Publication of Messages

On this occasion of World TB Day, special messages from Rt. Hon'ble Prime Minister of Nepal, Hon'ble Minister of Health and Population, Hon'ble State Minister of Health and Population, Secretary of

Ministry of Health and Population, His Excellency Mr. Ahmed Saleem, the Secretary-General, SAARC, Director General, Department of Health Services, Government of Nepal Dr. Kashi Kant Jha, Director, SAARC TB and HIV/AIDS Centre and National TB Centre, Nepal issued and same were published in the Gorkhapatra (a National Daily of Nepal). The message from His Excellency, Secretary General was disseminated to all NTPs of

Member States of SAARC for publication.

Publication of Articles

Articles on "Early Diagnosis of Tuberculosis, Global Need" written by Dr. B. Thapa, Dr. V. S. Salhotra and Dr. K. K. Jha and "All Together Now" written by Dr. N. K. Afridi, Dr. V. S. Salhotra and Dr. K. K. Jha of SAARC TB and HIV/AIDS Centre were published in the national dailies of Nepal on the occasion.

2. SAARC Regional Training of Trainers for Microbiologist on Culture and DST of Mycobacterium Tuberculosis

SAARC TB and HIV/AIDS Centre (STAC), Kathmandu organized a seven-day training programme on "SAARC Regional Training of Trainers for Microbiologist on Culture and DST of Mycobacterium Tuberculosis in National TB Institute (NTI), Bangalore, India. The programme was held in collaboration with RNTCP, Government of India from 23 to 29 May 2012.

The **objective** of the training programme was to produce trainers to train on culture and DST of *M. tuberculosis*.

The participants from Bhutan, India, Maldives, Nepal, Pakistan and Sri-Lanka attended the Training.

Dr. Kashi Kant Jha, Director, SAARC Tuberculosis and HIV/AIDS (STAC), Dr. Prahlad Kumar, Director, National Tuberculosis Institute (NTI), Bangalore, India jointly opened the training by lighting the traditional lamp.



The Director, NTI welcomed the participants and resource persons and thanked STAC for selecting NTI as training venue.

The Director, STAC in his remarks thanked NTI, RNTCP and Government of India for excellent arrangements made for the Training. He also highlighted the situation of TB in the SAARC Region, its challenges and role and importance of laboratory services in TB Control. Dr. V. S. Salhotra, Deputy Director, STAC

highlighted the objectives and importance of the Training. Dr. Ranjani Ramachandran, resource person from WHO, India also spoke on the occasion. Dr. Badri Thapa, Microbiologist, STAC delivered vote of thanks and expressed his appreciation for the Member States for their support extended to STAC for conducting this activity.

In technical session the following papers were presented:

1. Introduction to STAC and its activities by Dr V.S. Salhotra, Deputy Director, STAC.
2. Introduction to SAARC Tuberculosis Reference Laboratory and its activities by Dr. Badri Thapa, Microbiologist, STAC.
3. Culture and DST for Mycobacterium tuberculosis, Laboratory performance indicators, LED based Fluorescent Microscopy, Mewer methods for culture and DST, Sputum packaging and Line Probe Assay by Ms. Reena K. NTI, Bangalore.
4. Minimum requirement for TB culture and DST laboratory, Biomedical waste management and Bio-safety in TB laboratory by Dr. S. Anand, NTI, Bangalore.
5. WHO guidelines/policy for diagnosis of tuberculosis by Dr. Ranjani Ranmachandran, WHO, India.
6. Personnel Protective Equipments in TB laboratory by Ms H. Sundaram, NTI, Bangalore.

Besides the presentations mentioned above the following demonstration were made for the participants:

- Sample collection, processing
- Sample package
- Preparation of drug free and drug containing media
- Sterility test and storage
- Primary culture, inoculation and incubation procedures
- Primary culture identification tests
- Primary culture reading
- Preparation of Mac Farland standard 1
- Performing DST
- Reading of the DST result
- Calibration of loop
- Washing and sterilization
- ZN and Fluorescent microscopy
- Procedure for transportation of strains
- Use of personnel protective equipments

OUTCOMES

1. Participants learned minimum laboratory standards required for TMTB culture and DST.
2. The participants gained knowledge on WHO policy and guidelines on TB diagnostics (Sputum Smear Microscopy, FM microscopy, Solid and Liquid culture and DST, Line

Probe Assay, LAMP assay, Capilia TB and Xpert MTB/RIF).

3. The participants learned bio-safety issues related to TB laboratory
4. The participants learned management of laboratory waste, sterilization and disinfection appropriate for TB laboratory.
5. Participants were able to identify the problems in culture and DST and troubleshoot them.
6. The participants gained knowledge on FM and LED-based FM Microscopy techniques (reagent preparation, staining and observation) and External Quality Assurance System.
7. The participants were able to assess the performance of their TB laboratory

CLOSING SESSION

The Director, STAC and Director, NTI awarded the certificates to the participants and Resource Persons. The resource persons and participant expressed their views regarding the training. Ms H. Sundaram delivered the vote of Thanks.

3. SAARC Consultative Meeting of Programme Managers of HIV/AIDS to revise SAARC Regional Strategy on HIV/AIDS (2012-2016)

SAARC Consultative meeting of Programme Managers of HIV/AIDS was held in Islamabad from 15 to 17 June 2012 in collaboration with UNDP.

The objectives of the meeting were to revise and update the existing SAARC Regional Strategy on HIV/AIDS (2006-2010) and to finalize SAARC Regional Strategy on HIV/AIDS (2012-2016).

The meeting was attended by different experts on HIV/AIDS from all SAARC Member States, except Bangladesh along with the Director from SAARC Secretariat, SAARC



TB and HIV/AIDS Centre (STAC), UNAIDS, UNDP, UNICEF, PLHA & NGOs.

Mr. Annes-ul-Hassnain Mosavi, Secretary, Ministry of Inter Provincial Coordination (IPC), Government of Pakistan inaugurated the meeting as a Chief Guest and addressed the meeting. In his address he highlighted that the meeting will strengthen work at the regional level through improved coordination, collaboration and partnership between regional organizations and National programmes especially for TB, HIV/AIDS and STI prevention and treatment programmes.

Dr. Qazi Mujtaba Kamal, National Programme Manager, NACP, Pakistan, Chairperson of the meeting welcomed the delegates and guests by delivering the welcome address.

Dr. Kashi Kant Jha, Director, SAARC TB and HIV/AIDS Centre, Kathmandu delivered his remarks.

Dr. Jha emphasized the need for the revision of Regional strategy on HIV/AIDS for the SAARC Region.

Mr. Ibrahim Zuhuree, Director, SAARC Secretariat delivered his remarks on behalf of SAARC Secretariat.

Ms. Naila Begum, Assistant Director, SAARC Division, Ministry of Foreign Affairs, Pakistan was also present the opening session of the meeting.

The technical session was started by the presentation of Dr. Naseem Khan Afridi, Epidemiologist, STAC on the objectives, methodology & expected outcome of the meeting. STAC. Dr. V. S. Salhotra, Deputy Director, STAC presented on existing SAARC Regional HIV/AIDS Strategy and its salient features, progress in implementation, constraints / challenges faced etc.

Presentations were made by representatives from UNAIDS, UNDP and UNICEF. Dr. Ritu Mahendru, Consultant, hired for preparation of SAARC HIV/AIDS Strategy presented draft of new SAARC Regional Strategy on HIV/AIDS.

The participants were divided into 3 groups to discuss the thematic areas of the Regional Strategy. The meeting concluded with the suggestions and recommendations on preparation of SAARC HIV/AIDS Regional Strategy for 2012-2016.



Brief News

Welcome to His Excellency Secretary General of SAARC

SAARC TB and HIV/AIDS Centre has the honour to welcome His Excellency Mr. Ahmed Saleem, the Secretary General of SAARC

His Excellency Mr. Ahmed Saleem of Maldives assumed charge as the Secretary-General of the South Asian Association for Regional Cooperation (SAARC) with effect from 12 March 2012. H. E. Mr. Saleem is the eleventh Secretary-General of SAARC and succeeds Uz. Fathimath Dhiyana Saeed.

H. E. Mr. Saleem joined the Ministry of Foreign Affairs in 1968, and had a distinguished career in the Maldivian Foreign Service (MFS) spanning for over 26 years during which he was Chief of Protocol and Head of the Multilateral Division of the Ministry of Foreign Affairs. He served at the High Commission in Sri Lanka and Permanent Mission of Maldives in New York. He also served as the Maldives' First Alternative Governor for the World Bank, IDA and ADB when he was deputed to the Ministry of Finance

for one year in 1977. From 1990, he served as the first Director from the Maldives at the SAARC Secretariat in Kathmandu. H. E. Mr. Saleem's public service record of more than 42 years also includes senior posts at the Ministry of Transport and Communications and the Ministry of Youth, Women and Sports.

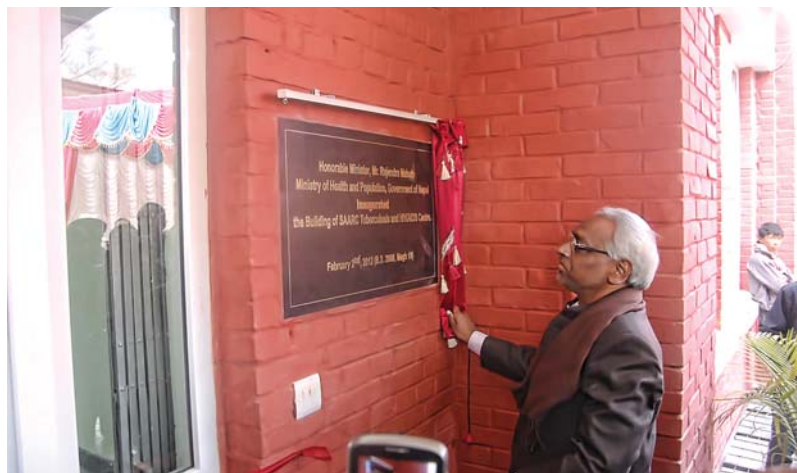
A regular writer on international and regional issues, H. E. Mr. Saleem became the first Editor of the Chronicle of the United Nations Association of Maldives (UNAM) and the SAARC Newsletter, published by the SAARC Secretariat in Kathmandu. His contribution to furthering public interest in and awareness of international, regional and social matters and in the advancement of the cause of human rights has been recognized widely in Maldives.



H. E. Mr. Saleem was one of the original nine members when the Human Rights Commission of the Maldives (HRCM) was first established by Presidential decree on 10 December 2003. In 2006, H. E. Mr. Saleem was appointed President of the newly constituted HRCM, a fully autonomous body under Maldivian law and in full conformity with the Paris Principles. He served in that capacity until August 2010.

Inauguration of Building of SAARC TB and HIV/AIDS Centre

Hon'ble Minister for Health and Population, Government of Nepal Mr. Rajendra Mahato, inaugurated the new building of SAARC TB and HIV/AIDS Centre at Thimi, Bhaktapur, Nepal on 2nd February 2012. The inaugural function was chaired by the Hon'ble State Minister for Health & Population, Government of Nepal, Mr. Saroj Kumar Yadav. Hon'ble Member of Parliament & former Minister for Health and Population, Government of Nepal Mr. Giriraj Mani Pokharel and Prof. Shiv



Kumar Rai, Hon'ble Member, National Planning Commission, Nepal attended the function as Guests of Honour. The foundation of building was laid down by the then Hon'ble Minister for Health & Population Mr. Giriraj Mani Pokharel on 28th November 2008.

Hon'ble Ministers along with other dignitaries observed the facilities available at the new building.

Dr. Kashi Kant Jha, Director, SAARC TB and HIV/AIDS Centre and National TB Centre delivered the welcome address. Dr. Jha highlighted the aims and objectives of the Centre along with its achievements. He also informed that the progress of TB and HIV/AIDS control in the SAARC Region and also highlighted the services available in the new building. A 15 minute documentary on the establishment of SAARC and STAC along with its activities prepared by STAC was released by the Chief Guest and projected at the programme.

The remarks were delivered by Mr. Ibrahim Zuhuree, Representative, SAARC Secretariat, Mr. Ganesh Dhakal, Representative, Ministry of Foreign Affairs, Government of Nepal, Dr. Praveen Mishra, Secretary, Ministry of Health

and Population, Government of Nepal, Hon'ble Member, National Planning Commission, Nepal, Prof. Shiv Kumar Rai, Hon'ble Mr. Giriraj Mani Pokharel, MP & former Minister for Health Population, Government of Nepal. Mr. Ahmar Ismail, Charge d' Affaires, Embassy of Pakistan, Kathmandu and H. E. Dr. Neem Chandra Bhowmik, Ambassador, Embassy of Bangladesh, Kathmandu.

The Chief Guest in his remarks highlighted that the Government of Nepal has given top priority to TB and HIV/AIDS control programmes in Nepal as well as in the SAARC Region. He also reiterated the commitments of the Government of Nepal for further support for remaining work of the new building.

Hon'ble State Minister for Health and Population, Government of Nepal Mr. Saroj Kumar Yadav delivered his remarks as Chairperson.

Dr. V. S. Salhotra, Deputy Director, SAARC TB and HIV/AIDS Centre delivered vote of thanks.

Dr. Badri Thapa, Microbiologist, SAARC TB and HIV/AIDS Centre conducted the programme as Master of Ceremony.

Before inaugurating the STAC building, Hon'ble Minister for Health and Population also inaugurated Gene Xpert MTB/RIF Machine installed at National TB Centre, Thimi, Bhaktapur.



Audit of Accounts of STAC for the year 2011

A Joint Audit Team for the year 2011 (JAT 2011) comprising auditors CA, Mr. Bhava Nath Dahal, Director, Office of the Auditor General of Nepal and Mr. Muuthasim Ahmed Saeed, Manager, Financial Audit, Auditor General's Office, Maldives carried out the audit of the accounts and related activities of SAARC Tuberculosis and HIV/AIDS Centre for the year 2011, from 11th to 12th June 2012.

Farewell to Dr. V. S. Salhotra

Dr. V. S. Salhotra, Deputy Director, STAC has successfully completed

his tenure on 20th June 2012. He served the Centre for 5 years as Deputy Director. A farewell programme was organized at STAC on 20th June 2012. In this

programme, Dr. Kashi Kant Jha, Director, STAC awarded Letter of Appreciation to outgoing Deputy Director. STAC is very much thankful to Dr. Salhotra for his



contribution to the Centre and wishes him great success in coming days.

STAC Visits

Ms. Oriane BOYER, EMPAHSIS Project Director, CARE Nepal, Kathmandu visited STAC on different dates of January, February and April 2012, to discuss about the HIV & migrants. She discussed on the possibility

of collaboration between CARE Nepal and STAC in cross-border issues related to HIV/AIDS.

Dr. Jigmi Singay, Regional Advisor, Department of Communicable Diseases, WHO/SEARO visited STAC on 24th April 2012. Dr. K. K. Jha, Director, STAC briefed about the activities of STAC and discussed on different issues regarding TB and HIV/AIDS in the SAARC Member States. The

purpose of visit was to discuss on the activities of NTP.

SDF Team

A team consisting of Mr. Karma, Chief Executive Officer, Dr. Sunil Motiwal, Director and Mr. Philip Baidya, Assistant Director (Project Management) from SAARC Development Fund Secretariat, Thimphu, Bhutan visited STAC on May 16, 2012. The team observed the functioning of the Centre and expressed their satisfaction on the support rendered by the Centre to SAARC Member States regarding control of TB and prevention of HIV/AIDS.

Dr. Ma. Elena G. Filio – Borromeo (Marlyn), UNAIDS Country Co-ordinator for Nepal visited STAC on 26th June 2012. She discussed with the Director and Senior Officials of STAC on different issues for the prevention of HIV/AIDS in the Region.

Participation in National/Regional/International Activities

Meeting of the SAARC Health Ministers preceded by the Senior Officials (Health Secretariat) Meeting, Maldives 10-12 April, 2012.

His Excellency Dr. Mohamed Waheed, President of the Republic of Maldives, inaugurated the meeting on 12th April 2012. Dr. Kashi Kant Jha, Director and Dr. V. S. Salhotra, Deputy Director attended in the Meeting.



Meeting of the SEA Regional Technical Working Group (TWG)

Dr. Naseem Khan Afridi, Epidemiologist, STAC attended the Meeting of SEA Regional Technical Working Group (TWG) on TB organized by WHO/SEARO in New Delhi, India held from 11th to 13th April 2012. The meeting was attended by participants from different organizations such as WHO/SEARO, IMA, STAC, NTP Thailand, NTP Myanmar, TRC India, NTI India, IUATLD India, KNCV Indonesia etc. The overall objective of the meeting



was to provide clear guidance on new policies and strategies for TB control interventions in the countries of the region.

Workshop on Country Capacity Building on WHO Collaborating Centres

Dr. Naseem Khan Afridi, Epidemiologist and Dr. Badri Thapa, Microbiologist STAC participated in Workshop on Country Building on WHO Collaborating Centres (WHO CCs) organized by WHO/SEARO on 24 April 2012 organized at WHO Meeting Room, UN Building, Pulchowk, Lalitpur, Nepal. In this workshop the policy, rules, regulations and procedures regarding WHO CCs were discussed.

News on NTP/NACP of SAARC Member State

Newer Initiatives by Revised National TB Control Programme, India

1. Notification of Tuberculosis in India – TB continues to be a major public health problem accounting for substantial morbidity and mortality in the country. Early diagnosis and complete treatment of TB is the corner-stone of TB prevention and control strategy. Inappropriate diagnosis and irregular/incomplete treatment with anti-TB drugs may contribute to complications, disease spread and emergence of Drug Resistant TB. In order to ensure proper TB diagnosis and case management, reduce TB transmission and address the problems of emergence and spread of Drug Resistant-TB, it is essential to have complete information of all TB cases. Towards the same an Executive Order has been issued by the Government of India on 7th May 2012 mandating all the healthcare providers to notify every TB case

to local authorities i.e. District Health Officer / Chief Medical Officer of a district and Municipal health Officer of a Municipal Corporation / Municipality every month in a prescribed format. For the purpose of this notification, healthcare providers will include clinical establishments run or managed by the Government (including local authorities), private or NGO sectors and/or individual practitioners.

2. Case Based Web Based Recording and Reporting Mechanism (Nikshay) – to strengthen the surveillance system under the Revised National TB Control Programme in India a case based web based recording and reporting mechanism has been initiated with effect January 2012. Till previously, the Revised National TB control Programme

had a system of electronic recording and reporting system named EPI-CENTRE in which the aggregated data on number of patients from each TU Units was being digitized at district level and sent to state and central level. But it is important to have digitized case based web based information of each TB patient in the country. Under 'Nikshay' details of individual patients is entered which is planned to be eventually used for improved patient management at the point of service delivery. Further an SMS based monitoring of treatment follow-up for each patient; developing linkages between facilities for referral and transfer mechanism; linking of micropayments to DOT providers; real-time system for drugs and logistics management; financial reporting and management on online under the 'Nikshay' portal has been planned.

Special Article and Technical Information

Totally Drug Resistant Tuberculosis (TDR-TB): A Challenge!

Dr. Naseem Khan Afridi

SAARC TB & HIV/AIDS Centre, Thimi, Bhaktapur, Nepal

Tuberculosis (TB) is known to be one of the oldest diseases affecting the mankind and has been present in the human race since ancient times – in fragments of the spinal column from Egyptian mummies from 2400 B.C. It has taken a heavy toll on mankind both in terms of lives and development. For ages, it was difficult to diagnose and treat TB. Scientists have made enormous efforts in diagnosing and treating the TB. The time when drugs for treatment of tuberculosis was not available, the only way to treat tuberculosis was to put patients on healthy living (fresh air, nutritional support, avoidance of physical and mental strain, prolonged bed rest etc.) and hope for patient's recovery with the help of his immune system. With the discovery of drugs to treat tuberculosis, it was realized very early that for successful treatment and to prevent drug resistance, it is necessary to put the patients on multi-drug therapy. With the advent of chemotherapy with anti-TB drugs, drug resistance was reported very early. After the discovery of streptomycin, it was noted that case fatality from TB was significantly reduced. But at the same time it was observed that patients improved over the first few months and subsequently their condition deteriorated, in many cases it was due to drug resistance.

Single drug resistance is found in almost all the countries treating tuberculosis with anti-TB drugs. However, multi/poly drug resistance (resistance to more than one drug) is the cause for concern. MDR-TB is defined as resistance to Isoniazid and Rifampicin, with or without resistance to other first-line drugs (FLD). MDR-TB is being increasingly reported these days. WHO estimated, there were about 650 000 cases of MDR-TB occurring world-wide in 2010.

First reports of extensively resistant TB (XDR-TB) in 2006, isolated cases were reported in Italy that had resistance to all first-line anti-TB drugs (FLD) and second-line anti-TB drugs (SLD) that were tested. In 2009, a cohort of fifteen patients in Iran was reported which were resistant to all anti-TB drugs tested. The terms “extremely drug resistant” (“XXDR-TB”) and “totally drug-resistant TB” (“TDR-TB”) were given by the respective authors reporting this group of patients. Recently, a further four patients from India with “totally drug resistant” tuberculosis (“TDR-TB”) were described, with subsequent media reports of a further eight cases. The term “totally drug resistant” has not been clearly defined for tuberculosis, while the concept of “total drug resistance” is easily understood

in general terms. The prognostic relevance of in vitro resistance to drugs without an internationally accepted and standardized drug susceptibility test therefore, remains unclear and current WHO recommendations advise against the use of these results to guide treatment. Lastly, new drugs are under development, and their effectiveness against these “totally drug resistant” strains has not yet been reported. For these reasons, the term “totally drug resistant” tuberculosis is not yet recognized by the WHO. For now these cases are defined as extensively drug resistant tuberculosis (XDR-TB), according to WHO definitions.

Resistance to TB drugs can occur when these drugs are mismanaged. This may include when patients do not complete their full course of treatment for full length of time, when the wrong treatment, wrong dosage, or wrong length of time for taking the drugs is prescribed, when the uninterrupted supply of the anti TB drugs is not maintained and when there is poor quality of anti TB drugs. The discovery of patients with MDR or XDR-TB emphasizes the importance of ensuring that all care for tuberculosis, whether in the public or private sector, must conform to international standards in order to prevent the emergence

of drug resistance. Almost all countries must, in addition, ensure appropriate diagnosis and treatment of cases of MDR-TB. National regulations for the quality and dispensing of anti-TB drugs, particularly of the second-line drugs, need to be strictly enforced. To achieve this, most countries require simultaneous scale-up of the diagnostic and treatment services for drug-resistant TB, and the provision of adequate and continuous supplies of quality assured SLDs for both MDR- and XDR-TB to meet the increased demand. It is pertinent to mention that drug resistance is not synonymous with failure of treatment. A patient may fail to respond to treatment because of non-compliance which could be due to economic constraints, distance from health center, adverse drug reactions and social stigma. Drug resistance is a laboratory diagnosis and should not be just a clinical impression of treating doctors. Resistant strains of tuberculosis bacteria (*Mycobacterium tuberculosis*) are man-made; they develop when the medications used to treat the disease are not used or managed correctly.

The reports on TDR-TB are worrisome because it is a clear sign that TB is not being correctly diagnosed and managed and

irrational TB management practices are widespread. If TDR-TB continues spreading, TB will become incurable again and patients will have to rely on their immune system, rather than medical intervention, to overcome the illness – a scenario last seen a century ago. WHO recommends against the use of drug susceptibility testing (DST) results for second-line drugs, beyond those used to identify XDR-TB, in guiding treatment. It said the term 'totally drug resistant' was 'non-standardized' and 'misleading'; testing for resistance beyond XDR-TB was not advocated by WHO and 'poor clinical response to treatment has not yet been correlated with diagnosis of drug-resistant TB without laboratory confirmation from accredited labs.

Tuberculosis is a highly contagious lung infection that kills about 1.5 million people each year worldwide, according to the World Health Organization (WHO), so the development of a totally untreatable form of the disease would be cause for alarm. "It conveys that there is no hope, that not a single drug works," Fortunately, it does not appear that the Mumbai cases are completely untreatable. After evaluating the cases, it was reported that the patients actually had "extensively drug-resistant" tuberculosis (XDR-TB), a form of

the disease that is difficult to treat, but not incurable. Although three of the 12 patients have died, the other nine are reportedly being treated with antibiotics used to treat extensively drug-resistant TB, such as clofazimine and rifabutin.

There are also new tuberculosis drugs on the horizon, including two that will likely be available to patients in the next few years, making the timing of adding a "totally drug-resistant" TB category impractical. That doesn't mean, however, that it is impossible for an untreatable form of TB to exist. It's reasonable to discuss it. It also does not mean that public health workers can rest easy. Drug-resistant TB remains a huge problem worldwide. Not only does it take months or, in some cases, years to treat, but once drug-resistant strains develop, they can be passed from person to person. The new, soon-to-be-released TB drugs have been specifically developed to address drug-resistant strains, but experts warn that without proper disease management, patients will become resistant to the new treatments before they can do much good. Hence, there is a need to be continuously on alert and proper management of drug sensitive TB cases.

Early diagnosis of Tuberculosis: Global need

Dr. Badri Thapa, Dr. V.S. Salhotra, Dr. Kashi Kant Jha
SAARC TB & HIV/AIDS Centre, Thimi, Bhaktapur, Nepal

Tuberculosis (TB) is one of the major health problems in developing countries. One third of world's population is infected with *Mycobacterium tuberculosis* (MTB) (causative organism of TB). World health organization (WHO) has estimated that there were 8.8 million new cases of TB globally in 2010 and the estimated deaths were 1.1 million among HIV-negative cases of TB and an additional 0.35 million deaths among people who were HIV-positive. Since the discovery of tubercle bacilli more than a century ago, significant advances have been made in the knowledge on TB but the progress on early diagnosis of TB is slow and is affected by management issues. Early diagnosis and rapid initiation of treatment remains a key strategy for TB control. Early diagnosis and initiating treatment cures individual patients and also curbs the transmission of infection to others in the community. TB case finding remains the corner stone of the National TB Control Programme among different distinct components. Early diagnostic point of care tool is likely to add significantly to progress on TB control.

There are two basic approaches for the diagnosis of TB. The direct approach includes detection of tubercle bacilli or its products and the indirect approach includes

measurements of immune responses of the people infected with TB. Indirect approach (detecting antibodies) is no longer recommended by WHO for diagnosing TB. Among the direct approaches, smear microscopy (observing MTB under a light microscope), culture (growing MTB in laboratory by conventional and automated methods), molecular tests (DNA tests) and serological tests (detection of products of MTB) are commonly used for the diagnosis of TB. Smear microscopy has been an easy and cheap early diagnostic tool currently available to detect tubercle bacilli in clinical specimen in a primary care setting for decades. A basic microscopy facility and a trained technician are enough for this technique. For developing countries, smear microscopy is currently the only cost effective tool for the diagnosis and monitoring of patients with TB. However, the technique is labor-intensive, has considerable patient costs, is not sensitive enough and there is inconvenience associated with the need to submit sputum specimens over a period of two days. Smear microscopy also misses some TB cases. Due to these limitations, WHO has recommended Fluorescent Microscope (FM) at all levels of the health system, particularly in high HIV occurrence settings and in settings with high laboratory workload.

FM earlier used mercury lamp, which is expensive, needs continuous supply of electricity and needs a dark room for examination. It was difficult to implement in resource-poor settings. The low-cost ultra-bright light-emitting diodes (LED) bulbs were thus developed. LED bulbs replaced mercury bulbs and conventional FM was subsequently replaced by LED-FM. LED-based FM is less expensive, has long life span, can be battery operated and does not need a dark room for examination hence can be used conveniently in resource-limited settings. Conventional smear microscopy is optimized using LED-FM, and by using two spot sputum smears to ensure same-day diagnosis. This approach is now endorsed by the WHO and is being adopted by resource poor countries in a phase manner.

Culture through solid medium is a gold standard for TB diagnosis. The conventional culture techniques (using solid culture media) take 6 to 8 weeks to confirm the MTB infection while modern automated liquid culture techniques detects MTB as early as one week. Moreover, these techniques are labor-intensive, expensive and face several problems on its technicality. Although, culture is a gold standard test, however this cannot be used as early diagnostic tool for TB. Molecular tests (PCR, hybridization etc) allow the

detection of few tubercle bacilli present in the clinical samples. These tests take a day or two for the diagnosis but are not feasible in all settings considering their cost and technicality in resource constrained settings.

Smear microscopy is a most widely used early diagnostic tool in all primary health care centres. Despite its wide use, only 42.77% of TB cases that were notified in 2010 were sputum smear-positive, and these represented just 29% of the estimated burden of new disease globally. The drug resistant TB is also on rise and currently threatening TB control. Estimated 650,000 cases of multidrug resistant TB (MDR-TB) occurred worldwide in 2010 and only 46,000 cases were diagnosed under National TB Control Programmes and reported to WHO. This clearly reflects the critical deficiencies in diagnostic laboratory capacity.

In 2010, WHO endorsed Xpert MTB/RIF, an automated cartridge-based DNA test, which fills the gaps in early diagnosis of active TB and drug-resistance. This test detects DNA of a TB bacterium. 98 % of active TB cases and 98% cases that are resistant to rifampicin (a first line drug for treating TB) are correctly identified. Resistance to rifampicin indicates that a patient is more likely to have multidrug-resistant TB (MDR-TB) which is a growing

problem in countries particularly with HIV problems. This test can diagnose TB and rifampicin resistance within two hours. The assay is accurate, safe and can potentially be used outside of a laboratory setting by a minimally trained health worker. This test has been strongly recommended by WHO as the initial diagnostic test in individuals of having MDR-TB or HIV associated TB. However, it is expensive and unaffordable in many settings and requires sophisticated equipment that cannot be deployed at all levels. Also, the pricing of assay in the private sector in developing countries is substantially higher than the pricing for the public sector, imposing additional barriers for scale-up. Uninterrupted power supply, which requires operating this technology, is also a problem in developing countries. This test also generates more laboratory waste and needs more space than microscopy. The assay greatly diminishes but not virtually eliminates the problem of diagnosing HIV associated TB. Independent high-quality operational research in different geographical and economic settings is also required to show where, when, and how the new assay will provide clear advantages for TB control programmes and the patients. Xpert MTB/RIF has shown us a way of what the future holds and give us hope as an ideal

early diagnostic tool, but research is needed to invent an early diagnostic tool which fulfills the shortcomings of this technology.

Significant progress has to be made in TB control. Early diagnostic tool will improve suboptimal and delayed diagnosis of TB, initial and rapid patient management, appropriate therapy and/or establish linkages to care rapidly and finally break the chain of TB transmission in the community. Early diagnostic tool is required to diagnose not only drug susceptible TB but also multidrug, extensively drug and so called totally drug resistant MTB. HIV is a threat to TB control programme as TB occurs as an opportunistic infection in people infected with HIV. TB is also cumbersome to be diagnosed in TB/HIV co-infected patients. Early and effective diagnostic tool is also required to address this issue. The case detection rate worldwide in 2010 was 65% (WHO) and the lack of rapid and accurate diagnostics is undermining the progress towards the 2015 achievement of Millennium Development Goals for TB control. Cheap, easy, rapid, laboratory-free and instrument-free point of care early diagnostic tool is required for early diagnosis and rapid management of TB, to achieve Millennium Development Goals for TB control and to eliminate TB by 2050.

This article was published in a National daily, "The Himalayan Times" on 23rd March 2012

STOP TB

In My Lifetime

To

Postage stamp

If undelivered, please return to:
SAARC TB & HIV/AIDS Centre
GPO Box 9517, Kathmandu, Nepal