Containing the Re-emerged Tuberculosis

Think Globally but Act Locally

There are some gaps in the national TB control programme, for example, between estimated cases and detected cases, between "successful" treatment and "treatment completion" rates, between sputum smear tests and drug sensitivity tests... These gaps should be narrowed or eliminated. Left entirely to the TB control programme, these gaps

by Dr Zakir Husain

TUBERCULOSIS experts held an important meeting in Bangkok in 1998 to review the global threat of a resurgent world epidemic . Tuberculosis is an old enemy but has now re-emerged with vengeance and has become a global health threat affecting millions particularly in the poor countries but not sparing the poor in the rich countries either. The World Health Organisation estimates that as many as three million people are now dying each year due to tuberculosis. If this epidemic is not contained many more millions will die of tuberculosis in the coming years. And who are dying in large numbers? It is mainly the adult population in their prime productive years and most of them in the developing countries in Asia. In Bangladesh alone, there are more than 300,000 new active tuberculosis cases each year, and more than 60,000 die of this each year as estimated by the national TB Control Programme. This is a colossal loss of lives in the most productive period .The Director General of the World Health Organisation has sounded a public health alert identifying Asia as the epicentre (central point) of the epidemic. If Asia controls the epidemic there is hope of containing if not eliminating tuberculosis from the world in the coming decades.

What makes the TB epidemic different?

There are several features that make the current epidemic of tuberculosis different

* In many parts of the world, tuberculosis germ has developed resistance to common anti-TB drugs.
* HIV (human immuno deficiency virus) infection , by lowering general immunity, causes otherwise silent TB infection to flare up as active tuberculosis
* The immunity acquired by childhood vaccination against tuberculosis wears off in adult life.
* Successful treatment requires uninterrupted use of several drugs for at least six months or even more.
* Treatment of those infected by resistant germs is so costly that many who cannot afford full treatment will remain capable of infecting others. with resistant germs.
* Many private practitioners continue to treat TB patients inappropriately without knowledge of modern treatment. .
* Patients who feel better at start of treatment often discontinue treatment long before completing full course. These persons can spread infection to others.
* If all infected persons with active tuberculosis are not treated fully, control programme will fail.

Unlike acute infectious epidemics with high immediate death rates, TB epidemic will never burn out in natural course; will linger in endemic form affecting slowly but surely large numbers of people . There was a time when TB was a silent but almost sure killer if untreated. Then during the fifties came the antibiotics that cured TB but it made medical practitioners and public health authorities complacent. People and governments relaxed their guard against TB, doctors began to treat patients inappropriately, irregularly, and incompletely . Spread of infections continued and many infected persons were carrying germs resistant to common anti-TB drugs. And now increase of poverty and dislocation of population in many countries are producing conditions that favour return of the epidemic.

Bangladesh had started a TB control programme in 1965 . More than 30 years later it still is a major public health problem and seemingly getting worse. And now with rising poverty, inadequate and under funded public health infrastructure, tuberculosis has re-emerged as a major threat.

What makes TB now a global threat?

It is common knowledge that TB is a disease of poverty, overcrowding, lowered body resistance. Therefore, like many other diseases of poverty, some may think, it should worry the poor countries only. But with today's rapid international travel and movement of large numbers of people across countries, there is no real barrier to spread of TB. There is greater inequality in the world today; poverty is increasing in many countries; social spending is declining ; the safety net is fragile. Millions in the developing countries are vulnerable to TB infection. With a raging epidemic of this magnitude there may be no island of security. That makes it a global public health threat requiring global action collectively by poor and rich countries in a spirit of co-operation and solidarity, action not just by the countries with major epidemic. But at the core, local action determines the success of national and global action.

Why emphasis on local action?

Treatment of TB is still effective if it is started in time and carried out fully. On both these counts we need strong and continuous local action. Infected people must be identified and registered house to house All and not some must be brought under treatment. Treatment by a combination of drugs will arrest the disease, make the person feel better and eventually make the person non-infecting . But treatment must be uninterrupted and totally complied with. That requires very close and constant observation. Some who feel better with treatment may stop taking drugs, become ill again and infect others. Most will require direct observation and regular follow up to make sure that the drugs are actually taken day after day. Continuous supply of required drugs must be kept up.

Patients from poor households, floating migratory population, will have to be specially monitored for completion of treatment. Otherwise they will relapse into active cases. All of this can only be done by strong local supervision and treatment follow up locally even at the household level in many cases. Persons with resistant TB will need special treatment and strict watch. That can best be done locally.

Treatment of TB requires co-operation from the members of the households and by the community and public in general. Information and education about the nature of the infection, its effective treatment, the ways of prevention of spread, must be disseminated nationally as well as particularly to the local communities. All of the above strongly suggest a degree of vigilance, support, and follow up only possible through local capacity building for action.

Lessons from the past support local action

Passive case detection which expects the ill person to report to health station might work in largely literate population enjoying reasonable social security. But with low literacy and high poverty levels in Bangladesh, active detection in many locations will be necessary.

In poor households and migrant populations, their effective access is very limited. Many of then may not be seeking care when ill or continue to remain under treatment for long. Active search shall bring all those currently affected into the fold of control programme.

Early integration (into health infrastructure) and maximum utilisation of existing resources are key to sustainability of special disease control programmes. TB control programme is no exception. Yes, vertical programmes have often been applauded. But these have been costly, and could not be sustained in the long run; malaria eradication being a notable case

A successful disease control programme relies heavily on good local planning , problem solving, monitoring, and replanting cycle. Decentralised programme management and capacity building have been particular strengths,

Genuine community support and mobilisation of local resources(including volunteers where indicated) are extremely important.

Payment of additional money to field workers as incentives has often proved counter productive, encouraged false reporting and corruption. Need to use other incentives.

Service delivery should adapt to client convenience especially of the poor, disadvantaged and remote such that effective full coverage is achieved. .

The tyranny of reporting duties to meet central office demands should be removed: field workers must devote full time to actual service of clients and collect and record information relevant only to local managerial use.

Geographical Information system detailed into union/ward level case profile should be established and used for micro planning, monitoring, and evaluation.

There are some gaps in the national TB control programme, for example between estimated cases and detected cases, between "successful" treatment resulting sputum negative and "treatment completion" rates, between sputum smear tests and drug sensitivity tests. sharing of work between dedicated TB supervisors and other field supervisors. These gaps should be narrowed or eliminated . Left entirely to the TB control programme, these gaps cannot be bridged.

The author is a health consultant.

AIDS Vaccine Patent 'Dupes and Dumps' Scientists

The search and development of an AIDS vaccine has been one of the most challenging medical endeavours in recent times. Leading the field has been a team of scientists from Oxford and the University of Nairobi. Now the Britons have gone ahead and patented the research findings, excluding the Kenyans. Gemini News Service listens in on Kenyans' anger.

John Kamau writes from Nairobi

DESPITE a hasty compromise, a patenting row between Oxford, Britain, and University of Nairobi (UoN) scientists threatens to put the search for an AIDS vaccine in jeopardy. An even greater casualty almost certainly will be trust between Western and Third World researchers.

"The matter is a grave one," says Nicholas Biwott, Kenya's minister or trade, who is in charge of patenting. "We have ordered thorough investigations into the issue."

The tussle began in mid-October when a Kenyan newspaper disclosed that British scientists, who have been collaborating with Kenyan scientists since 1998 to develop an HIV/ AIDS vaccine, patented the findings as their own in December 1999, ignoring the Kenyan scientists. The Oxford unit of the collaboration, the Medical Research Council (MRC), applied to the British Patent Office for a patent covering HIV research done by two of its scientists, named as inventors of the immunogen, Dr Thomas Hanke Prof Andrew McMichael.

This would mean any commercial profits from this venture would go to the Britons.

Kenyans were outraged and their trust dipped.

"We spent sleepless nights writing proposals and doing research," says 51-year-old Dr Joab Bwayo, the UoN head of microbiology. Bwayo is famous for leading a research team that discovered that some sex workers in Nairobi's sprawling Majengo slums contracted HIV/AIDS after years in their trade while another set had not done so despite being in the sex trade for just as long.

"The Majengo research showed that though the sex workers came into contact with the virus, their T-cells, which are part of the body's immune immune system, quickly destroyed the cells which had been infected with the virus," says Bwayo.

The Kenyans insist they pioneered that research some 10 years ago and are part of the knowledge.

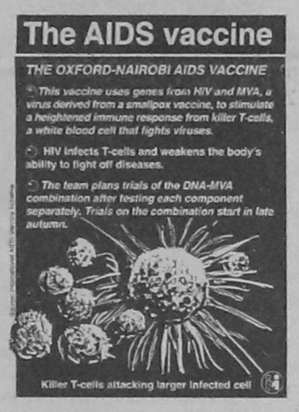
"We discovered some unique facts about the immunodeficiency virus sprawling Majengo slums. It was due to the lack of sophisticated laboratory equipment that our researchers teamed up with experts from Oxford," says Bwayo, optimistic that things will be sorted out but angry at the turn of events."The mapping of the DNA was also done in Kenya," says Dr Omu Anzala, a member of the Kenya Aids Vaccine Initiative (KAVI) which has been conducting research at Majengo.

Kenyans think that it was wrong for KAVI to have sought collaboration with the Oxford scientists. "The project should have been handled locally by the Kenya Medical Research Institute (KEMRI)," says Dr Kenneth Rotich, a medical doctor, referring to a government-funded research body.

"We must be extra cautious when dealing with Western scientists. We trust people so much and this is no laughing matter," says Dr Henry Abwere, a UoN pharmacy lecturer.

Kenyan researchers now feel that they ignored pertinent issues in the Memorandum of Understanding between them and the Oxford scientists, especially on patenting. They have put too much trust in their Oxford counterparts, they say.

On 20 October the two sides met in Nairobi with the agency that brought them together in the first place, a New York-based non-government organisation called the International AIDS vaccine Initiative. The IAVI also funds the vaccine research.



A joint statement issued by the "three partners" set up a technical task force, with members drawn from the three institutions, to establish mechanisms to address current and future patent and intellectual property issues.

"We are always have been equal partners in this endeavour. Our partnership is based on mutual respect and our recognition of our different strengths as institutions," the statement said and paid glowing tributes to the Kenyan contribution.

It reminded the team that "this partnership is about ending the worst public health crisis in the history of humankind, not money."

"Although experts on patent procedures are working on this issue, my advice to local researchers to include matters of intellectual property rights from the launch of any collaborative research agreements or memorandum of understanding," says Nicholas Biwott, Kenya's minister of trade, and in charge of intellectual property.

Funded by the IAVI to the tune of $9.1 million, the joint study was set to launch phase one in December when more than 60 volunteers in Nairobi were to participate in clinical trials.

Although the researchers say that the row will not put the experiments in jeopardy, some Kenyan commentators are bitter.

They dismiss the explanation by British scientist that they were forced to take out the patent to prevent other organisations doing so, saying this means that they could not even trust their Kenyan partners.

"This is an explanation without a leg to stand on," says M G Kimani, writing in Kenya's Daily Nation newspaper which broke the initial story.

"We have been insulted in plain English that there are no Kenyan inventors," says Daily Nation columnist Kwamchetsi Makokha. "Dr Bwayo alone has a 30-page CV that does not mention the primary schools he went to. It is a catalogue of research projects and published scientific papers. That Dr Bwayo, Dr Anzala and Prof Jeckoniah Ndinya-Achola were no more than laboratory hands."

"This is stultifying, supremely embarrassing and makes our scientists look deficient," says Dagi Kimani, a medical reporter in Kenya.

The author is the editor of Nairobi-based Rights Features Service and writes for 'New African', London.

Lest We Forget

Dr Qudrat-e-Khuda : His Contribution in Scientific Research and Education

by Jamayet Ali

EMINENT scientist and educationist Dr Muhammad Qudrat-e-Khuda was born in the village Margram of Rampurhat Sub-division under Birbhum district in May 1900 in his grandfather's house. His father's name was Syed Shah Sufi Khondokar Abdul Mukit. A university graduate Mr Mukit was popularly known as the Peer because of his piousness. Once Dr Khuda asked his father about his family status. His father said, "If you can build a happy and prosperous life, it will be the best appellation of your family."

Dr Khuda started his primary education in Margram High School. He stood first in Matriculation examination in 1918. Then he got admission to the Presidency College. He obtained first division in both I.Sc. and B.Sc. examinations and was awarded gold medals for brilliant results. He then got admitted to the University of Calcutta. When he was a student of second year M.Sc his father died. But despite heavy shock at his father's death, he stood first class first in M.Sc. examination in 1924. Then he engaged himself in research at the Imperial College of Science and Technology, London having state scholarship from the government of India. In 1929, he obtained his DIC and D.Sc. degree from the same college under the University of London. Then he returned from London despite requests from his professor for doing further research at London University.

Dr Qudrat-e-Khuda wanted to serve the nation and carried on his research at the Presidency College, Calcutta and was awarded the Prem Chand Roy Chand Scholarship. He received gold medal for his post-doctoral researches. He made a new revolution in the field of ketocyclotautomerism modifying strain hypothesis. He first proved by experiment the origin of strainless monocyclic ring. His basic research on stero isomerism of camphoric acid has been included in the higher course of study. This research is believed to be the base of conformational theory in Organic Chemistry. Dr Qudrat-e-Khuda set significant examples in developing processes suitable for application in the industries. He wanted to strengthen economic base of the country through industrialization on the processes developed in the laboratories using indigenous raw materials so that people may enjoy the fruits of research at a lesser cost. He developed the process for production of caffeine from tea waste. To make jute economically viable he developed processes for production of partex, hardboard and corrugated sheet from it. He made research on evaluating certain important types of fish for their valuable constituents and essential amino acids. He also carried out biochemical and nutritional investigation on rice and rice production.

Dr Khuda carried out research on various medicinal plants. Nata Karanja is a kind of herbal medicinal plant which is largely seen in the jungle and fallow land. One kind of bitter constituent was extracted by Dr Khuda from its seed which may be used as cure for leprosy and other diseases in the system of Ayurvedic treatment. Dr Qudrat-e-Khuda, Dr Erfan Ali and Associates were able to extract three organic chemical substances from Nata

Dr. Qudrat-e-Khuda (1900-1977)

seeds. These are Alpha caesalpin, Beta caesalpin, and Gamma caesalpin. Moreover, they were able to extract a starch material named caesalpinitol from Nata leaves which is used as substitute of sugar for diabetic patients.

Dr Khuda and his associate Dr Khaleque made relentless efforts to extract some medicinal substances from Cephalendra Indica to apply them in the treatment of skin diseases, gonorrhoea etc. Dr Khuda prepared 102 papers based on his researches which were published in various journals at home and abroad. He was a Fellow and member of the Syndicate of Calcutta University. Before partition of British India he held the post of the Principal of Presidency College.

After partition in 1947 he came to erstwhile East Pakistan and became the first Director of Public Instruction (DPI). While holding the important position of DPI, Dr Khuda wholeheartedly tried to improve the quality of education. He believed that if Bengali could not be introduced as the medium of instruction, quality of education would never improve. So, he instructed translation of important books that were essential for the syllabuses. He was one of those who played pioneering role in the language movement for introducing Bengali in all spheres of national life. He wrote 27 scientific books in Bengali making them suitable as textbooks at school, college and university levels.

Dr Khuda was also a member of the Executive Council of Dhaka University. He was appointed Scientific Adviser to the Ministry of Defence of the Government of Pakistan. He attended various conferences organized by UNESCO and Commonwealth on many occasions. Dr Khuda was the Chairman of the Secondary Education Council from 1952-1955. At this time the East Regional Laboratories of the Pakistan Council of Scientific and Industrial Research was established in Dhaka and he was appointed as its first Director in 1955.

Dr Khuda did a lot to expand the East Regional Laboratories. It is worth mentioning that East Regional Laboratories started functioning under the leadership of Dr Qudrat-e-Khuda at Dhaka Polytechnic Institute, Tejgaon in 1955. It was Dr Khuda's utomost initiative to build new laboratory buildings at the present location (Science Laboratory). Construction work of the new laboratory building on the 27-acre campus ended in 1962 when all machinery and equipment from the Tejgaon Polytechnic Institute were transferred to the new site. It may be mentioned that 27 acres of land for the laboratories was acquired by Dr Khuda's own efforts. He is known as the Founder-Director of the Dhaka Science Laboratories. He rendered services as the Director till his retirement in 1966. Then he joined Bangla Unnayan Board as its Chairman where he tried to publish scientific books in Bengali.

He was actively engaged as the Chairman of Bangladesh Education Commission since 1972. In this period he took initiative in preparing a report with a view to improving the education system of the country. The report is known as Qudrat-e-Khuda Education Commission Report. He submitted recommendations to the government in 1975. He was appointed visiting professor, Department of Chemistry, Dhaka University in 1975 and served there till his death on November 3, 1977.