

## EDITORIAL

### **Tuberculosis control in Pakistan.**

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Tuberculosis remains a major public health problem in the third world countries like Pakistan. Drugs that can cure most cases of TB have been available since the late 1940s. However with around 2 million deaths from TB annually, the disease ranks 2nd only to HIV as a cause of death from infectious diseases<sup>1</sup>. The number of new cases of TB that occur every year also continues to grow reaching 9.3million in 2007. Twenty two high burden countries account for 80% of total global TB which includes Pakistan. Although sub-Saharan Africa has the highest incidence rate, Bangladesh, China, India, Indonesia and Pakistan together account for half of the global TB burden<sup>2</sup>.

The crises of TB situation, forcing World Health Organization (WHO) to declare it as a global emergency in 1993, would not have existed, but for gross neglect of this disease over 2-3 decades prior to 1993<sup>3, 4</sup>. Public health interventions were derailed by false perception, that TB would be eliminated from industrialized countries and steadily decline with the advent of effective chemotherapeutic agents. But this did not happen as most of the developing countries had no strategy, no plan and few resources to combat TB during that period<sup>5</sup>. Pakistan was one of the victims of that neglect both at national and international level.

TB control has been high on the international public health agenda since the early 1990s. Global targets for reduction in epidemiological burden of TB have been set for 2015 and 2050 within the context of Millennium Development Goals (MDGS) and by the stop TB Partnership. The principal targets are that the incidence rate should be falling by 2015 (MDG 6, target 6C), that prevalence and death rates should be halved by 2015 compared with their level in 1990, and that TB should be eliminated as public health problem by 2050. Reaching these targets is the focus of national and international efforts in TB control and WHO has established a global Task Force on TB Impact Measurement to ensure the best possible evaluation of whether or not the targets are achieved<sup>6</sup>. Two other global targets focusing on TB control programme performance are: to detect at least 70% of the incident cases: and to successfully treat the 85% of the cases that are detected.

WHO's DOTS strategy is considered to be the best prospect for control of Tuberculosis. TB control in Pakistan was almost nonexistent due to dormant and ineffective National TB control programme (NTP) until 2001. The reasons behind this were poor Government commitment and funding for TB control in the past and lack of support by the national and international partners.

Since 1993 when TB was declared a global emergency by WHO, drastic expansion in tuberculosis care has been witnessed all over the world. Although DOTs strategy was piloted in Pakistan from 1995 but the real progress in TB control was achieved after revival of NTP in 2001, when TB was declared as national emergency through Islamabad declaration.

Following Islamabad declaration, a 5 years plan was devised leading to universal DOTs coverage in the public sector by year 2005. Expansion of DOTs coverage all over meant availability of free diagnosis and treatment to all patients. TB services in Pakistan were integrated into the primary public health care system at district level. This primary health infrastructure was a great help in achieving the target of DOTs expansion all over the country in public sector by 2005. Difficulties faced during the initial period of DOTs implementation were because of problems with human resources, poor quality of services and lack of commitment at public health facilities at peripheral levels towards DOTs.

Subsequently a 5 years federal work plan was approved from year 2006, for which Rs. 1.81 billion were allocated for TB related activities including staff training, expansion of laboratory network, availability of quality drugs, surveillance, monitoring and evaluation, research and development, public-private mix (PPM) and behavior change communication.

An important step taken by Federal Ministry of Health & NTP towards TB control in the country was that of effective & meaningful partnership building. An Interagency Coordinating Committee guide & facilitate donor support and technical assistance for the programme & Country coordination mechanism facilitate partner's coordination. The NTP and PTPs organize annual joint programme reviews on TB care in collaboration with all partners.

In implementation of DOTs strategy in Pakistan, District TB coordinators play a pivotal role. They have the primary responsibility of implementing and supervising TB control activities at the diagnostic centres of their respective district. Since 2003, WHO programme officers, based at national, provincial and district levels have been helping in monitoring TB control activities and providing technical capacity building support. Monitoring the overall performance of programme is the responsibility of NTP.

One of the major components of DOTs strategy is the uninterrupted drug supply. The NTP and provincial governments have ensured the availability and accessibility of locally manufactured first-line ATT at all levels, purchased through the federal and provincial budgets or through interim grants from the Global Drug Facility. Treatment is delegated from the diagnostic centre (rural health centres or hospitals) to the basic health unit (BHU) level. Lady health workers serve as the main treatment supporters. A 6-month regimen for new cases consisting of 2 months of intensive phase with 'Rifampicin, Isoniazid, Ethambutol & Pyrazinamide' followed by 4 months of 'Rifampicin & Isoniazid' according to WHO recommendations<sup>7</sup> & Pakistan Chest Society guidelines is being implemented<sup>8</sup>. An 8-month treatment regimen for new cases, with 6 months Isoniazid & Ethambutol (HE) in the continuation phase, still in place at programme level is being phased out.

In order to achieve the 70% case detection target set by WHO, DOTS implementation at public health facilities only is by no means enough to achieve the MDGs. Despite the claim by NTP of 100 % DOTS in the public sector, it is widely believed that it is actually not the case, especially in the difficult terrain of Northern mountainous areas, war torn tribal territories, internally displaced people and in the remote areas of Baluchistan & interior Sind. Whereas NTP needs to strengthen the DOTS at the difficult areas in the public sector, it is of paramount importance to engage private sector in to the TB control since this sector is used as the first point of entry to the health care by most users. High priority has been given by the NTP to developing partnerships with the private sector<sup>9</sup>. It is also important in view of the fact that majority of the private practitioners in Pakistan do not follow NTP guidelines and have fairly poor knowledge of TB control<sup>10-12</sup>.

To introduce TB control according to NTP guidelines into the lagging private sector, the NTP engaged 4 non-profit organizations for the implementation of PPM DOTS pilot projects in 30 selected districts. Public sector funds were allocated in 2003 for implementation of 1 district-led PPM model, currently being implemented in 6 districts. In addition, the Greenstar Social Marketing Pakistan model was introduced in 5 metropolitan cities involving private laboratories for sputum microscopy, where more than 1000 GPs were engaged in TB DOTS. WHO-assisted mission in 2008 found that in the year 2007, PPM contributed to nearly 20% of total case detection, a remarkable achievement.

Another PPM strategy is “hospital DOTS linkage” which is currently implemented in 27 out of 67 public and private tertiary care hospitals by enhancing laboratory services for Sputum microscopy, introducing standardized treatment and developing referral systems between the hospitals and peripheral treatment centres through DOTS centres. Data from districts where DOTS linkages have been introduced showed an increase of up to 50% in case notifications during 2009. It is pertinent to mention here that majority of the private sector is still not in line with NTP & the DOTS strategy and a lot more effort is required in order to sustain & further intensify the DOTS expansion in this very large private sector.

Whereas a lot of progress has been made as is evident from the above, there are some areas which are lagging behind the others. Strengthening of laboratory network especially the drug sensitivity testing (DST) laboratories is badly required. Although efforts are being made & few BSL 3 laboratories are in pipeline but so far not a single reference laboratory for DST is available in the public sector in the country. Operational research, Advocacy, communication & social mobilization (ACSM), the daunting challenge of MDR-TB and engaging teaching hospitals in adopting DOTS strategy are areas which can do with more organized & vigorous effort.

According to the revised WHO estimates the incidence of TB in Pakistan is 230 per 100,000. The prevalence and mortality are 310 per 100,000 and 39 per 100,000 respectively. This indicates 410 000 incident cases of TB and 69 000 TB deaths in Pakistan every year. Pakistan is the sixth highest TB burden country in the world. A prevalence study is being carried out by NTP and its partners for obtaining a more accurate and precise information of the TB burden in the country.

In 2002 the case detection rate for all cases according to previous estimates was only 19%, way below the target of 70%. With expansion of DOTS strategy all over the country, this rate has increased to 84% in 2008. Similarly the detection rate of smear positive cases increased from 13% to 74%. However, with the recent higher estimates of TB incidence, the case detection rate for all TB cases is about 60% and for new sputum smear positive (ss+) cases is about 58%<sup>13</sup>.

Numbers of TB case detection, increased from 11,050 in 2000 to 248,115 in 2008. The treatment success rate of 91% of new ss+ cases notified during 2007 exceeded the WHO target of 85% , due to a reduction of the default rate to under 4%, and low death, failure and transfer out rates (2%, 1% and 2%, respectively).

This remarkable progress of the NTP in expanding DOTS to the public sector of every district, initiating Public Private Mix (PPM) strategy<sup>14, 15</sup>, and steadily increasing case notification and treatment success rates<sup>16, 17</sup> have been possible due to sustained Government commitment and funding for TB control, and technical and financial support from national and international partners.

Interventions planned to sustain and further scale-up the progress are as follows<sup>18</sup>:

- A nationwide prevalence survey is planned for 2010/2011 with technical assistance of the USAID-funded Tuberculosis Coalition Assistance Program partners: WHO, KNCV, The Union and JATA.
- An uninterrupted supply and funding for first-line ATT drugs has been assured until 2012 through funding from the Government and partners. However, long-term strategies for financing an uninterrupted supply of quality-assured first- and second-line ATT drugs, including paediatric formulations, are needed.
- Expansion of DOTS in the remaining 60 districts of private sector & parastatal organizations is vital for increasing case detection. Funding for these activities has been secured through partners support.
- Improvement in the drug management system is needed. As banning across-the-counter sales of ATT drugs is currently not a viable strategy in Pakistan, the NTP has opted to develop a “seal of quality” for locally produced ATT drugs that meets international quality standards, while WHO is engaged in providing technical assistance to local drug manufacturers aiming to attain a prequalification status.
- Improvements in the laboratory network for culture and DST for the diagnosis of drug-resistant TB is badly required. Efforts are being made to upgrade the existing labs & establish new ones with the support of partners. Rapid testing for MDR-TB is planned to be introduced in the 15 tertiary care hospitals.
- Addressing MDR-TB care is an urgent task. WHO estimates an annual incidence of over 13,000 MDR, ss+ cases in Pakistan based on estimates of 3.5% MDR in new cases and 35% in re-treatment cases<sup>19</sup>. A study conducted by Pakistan chest society<sup>20</sup> reports 1.8% primary resistance in a specified annual cohort of notified ss+ new cases.

Upgrading TB control in the new province of Gilgit–Baltistan, intensifying TB control in underserved areas & tribal areas hit hard by war on terror, innovative approaches for enhancing case detection in marginalized groups with limited access to health services, such as workers in the informal sector and periurban slum populations, integration of TB control strategies in medical colleges' curricula and introduction of an electronic nominal recording and reporting system for monitoring and evaluation are some of the challenges for further scaling-up of TB care in the country.

Although NTP needs to be congratulated for sustaining progress for over a decade, it nevertheless needs to pursue its activities with greater vigour and expanded framework in order to achieve regional and global targets, including Millennium Development Goals. Continuous government commitment and donor support will be instrumental for ensuring sustainability and further success.

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