Is Ministry of Health fully prepared to implement an Effective DOTS Program in Pakistan? An Operations Research on TB Control Program in the Public Health Sector in Sindh

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Abstract

Purpose of the study: Pakistan is among the high-burden countries for tuberculosis. One of the fundamental problems in TB control is a high defaulter rate among the registered TB cases in the public sector. In 1999, a cross-sectional study was designed to identify the determinants of low compliance for the TB treatment in two rural districts in Sindh.

Methods: Before the actual data collection, a pilot testing was planned in a secondary level care hospital. Fourteen defaulters for TB treatment were identified but none could be contacted due to incomplete addresses. Other alternatives were explored with the health facility team to reach them including a field-based search through Lady Health Workers of the National Health Program but all endeavors went into vain. The pilot testing propelled us to postpone the cross-sectional study but we continued scrutinizing the follow up problem for TB patients in other health facilities. Not surprisingly, more or less a similar picture was found in those health facilities.

Principal conclusions: The study concludes that the public health care system in Pakistan lacks even the basic requirements for an effective TB control program, that is, a viable information system and the functional integration of program with rest of the health care delivery system. A DOTS strategy to control TB was initiated in the public sector in Pakistan just one year prior to this study. The Ministry of Health requires re-visiting the program to ensure that the lacunae identified in this study are being taken care of in the current DOTS strategy (JPMA 53:324;2003).

Background

Pulmonary Tuberculosis is among the major killer diseases. About one third of the world's population is infected with the disease, 95% of which are in the developing countries and 98% of all TB related deaths occur in these regions. The burden of TB is greater in adults, more than three-quarters of cases occur in the 15-59 age groups.[1] Situation in Pakistan is not different from that in other developing countries. In Pakistan, an estimated 260,000 new cases occur annually and more than 50,000 individuals die due to TB.[2] With a very high defaulter rate for the completion of TB treatment, the incompletely cured patients return to the community to further infect 10-14 people in the course of a year. R. Liefooghe[3] et al. cited results of a follow up of 3950 TB patients, registered in Bethania Hospital Sialkot, Pakistan between January 1988 and December 1990. The study revealed that 72% of the patients did not complete their prescribed treatment course. Tuberculosis is a disease which requires not only uninterrupted long-term treatment but also, continuous monitoring of the patients in order to ensure treatment compliance. Non-availability of drugs, financial and

Table 1. Summary of treatment outcome for TB patients in Sindh, during 1995-99

	1995	1997	1998	1999
Registered patients	524545	41959	27470	76408
Regular patients	167727	8911	12185	42241
Defaulters	356818	33040	15285	34167
	(68%)	(79%)	(56%)	(45%)
Cured	9386	4213	5469	8470
Deaths	48	122	72	151

Source: Directorate Tuberculosis Control, Department of Health, Sindh, Hyderabad, 1999.

physical accessibility to the health centers and a lack of awareness regarding consequences of incomplete treatment are the known causes for low compliance for the TB treatment. Inconsistent treatment policy with poorly managed, under funded and incorrectly conceptualized TB control

programs are the added factors.[4] Non-compliance of a course can lead to relapse, possibly with drug-resistant bacilli.[5] A larger part of the resources within developing countries is likely to be used in near future for diagnosis and treatment of TB, thus rendering it a growing economic and financial burden.[6]

Control of tuberculosis is often given as a classical example of a public health activity that is important for the whole society and in which it is appropriate for the state to play a dominant role.[7] WHO recommends that each country should analyze treatment results through cohort studies based on a national recording and reporting system? Data obtained from the Department of Health (DoH), Sindh (Table 1)[8] depicts the seriousness of the problem in the public sector, showing a very high percentage of defaulters of all diagnosed registered TB cases, ranging from 45% in 1999 to 79% in 1997. It is better to understand the dynamics involved in this dismal situation. A descriptive study was therefore planned in 1999, in order to: 1) identify and contact defaulters for TB treatment, registered at the government health facilities. 2) find out the reasons for low compliance for the treatment and, 3) determine the present status of treatment and the disease among the identified defaulters.

A provincial directorate of TB control manages the National TB Control Program (NTP) in Sindh. The office of the directorate is situated at Hyderabad. A district TB Coordinator oversees the program in each district. The program is part of an overall provincial and district health system but operates as a vertical program, parallel to the existing health services through their TB clinics and microscopy centers. There are 161 TB clinics and 108 microscopy centers in Sindh.[9] The program has its own information system. The information gathered at the facility level is sent to the District TB Coordinator who compiles the report and forward it to the Director, TB control.

Methods and Results

Study design and study population

A descriptive study was designed to evaluate defaulters for the TB treatment at the government health facilities in Sindh. Districts Mirpurkhas and Khairpur, reporting the highest number of defaulters in 1998 (637 and 3116 respectively)[8], were selected for the study. Based on the TB defaulter rates for 1999, a sample size of 400 was calculated.

In order to obtain the concurrence of the Directorate TB Control and also to involve them in the study, several meetings were held with the program director and his team at Hyderabad.

A pilot testing was planned to enhance the internal validity of the data collection tools and also to examine logistical requirements and the feasibility in the field. Taluka Hospital at Tando Allahyar in Hyderabad district was chosen for this purpose to make it convenient for the Director TB control and his team to participate in the study.

Data collection

The study data was planned to collect identified defaulters using a structured questionnaire. Besides socio-economic and demographic variables, the questionnaire included specific variables such as: history of TB treatment at the government health facility, method of diagnosis, type and duration of treatment and reasons for discontinuation of treatment. To assess the current status of the disease, collection of three consecutive sputum smears according to the WHO guidelines, was also planned.

Pilot Testing

The pilot testing was planned to identify the defaulters for TB treatment who were registered at the Taluka Hospital Tando Allahyar in Hyderabad district from June 1998 to June 1999. Initial visits were paid to the health facility to develop rapport with the health facility team and also to give them an orientation about the study. The Director of the TB control program and his assistant also accompanied the principal investigator.

Available records were reviewed to identify TB treatment defaulters. Fourteen defaulters were identified through the TB register during the period June 1998 to June 1999. They could not be treated due to their incomplete addresses. Other alternatives were explored with the health facility team to reach the defaulters. Lady Health Workers (LHWs) of Prime Minister's Program, now called as National Program for Primary Health Care and Family Planning, were considered to be the best option to reach them*. Around 40 LHWs were contacted and requested to find the reported defaulters. Again with the incomplete addresses none of the 14 defaulters could be identified. With this frustrating situation, another compromising strategy was applied. All 40 LHWs were asked to provide addresses of all TB cases known to them in their catchment area, in a hope to find defaulters for the government health facilities from their lists. Of 110 TB patients identified by the LHWs, 16 were reported to have discontinued their treatment before the completion of the advised course. Among those, 12 were available for the interview and the collection of their sputum smear. None of them had ever registered or received any treatment for tuberculosis in a government health facility. Mean age of the identified defaulters

was 39.4 with a range between 25 and 54 years. Six were males and 6 females. Sputum specimens were sent to the collection point of Aga Khan Hospital's laboratory at Hyderabad, and the final examination was done at AKUH's main laboratory at Karachi. No sputum was reported positive for acid-fast bacilli.

Further exploration after the pilot testing

The whole exercise appeared a futile one. It was concluded that further efforts to pursue with the same strategies would produce no results in the proposed study sites viz. Mirpurkhas and Khairpur. This pilot testing however brought up some very important operational issues and problems attached with the health care delivery system in the public sector. The most apparent and important finding was an inefficient health management information system for the TB control program. In a seminar, held in Cotonou, Benin, organized by the International Union Against Tuberculosis and Lung Diseases, it was stressed that a good notification system is a key element for the success of National Tuberculosis Programs (NTPs).[10] A valid and credible information system is a pre-requisite for instituting an effective decision-making process. Owing to the importance of this area for TB management, we shifted the focus of our study to further explore the issue of proper registration of TB cases in other health facilities in the province.

Pursuing further, we visited five more health care facilities in Hyderabad, Dadu and Badin districts (Table 2) to assess the TB management information system and its role in the follow-up of registered TB cases. Of five health facilities visited, one had discontinued its TB clinic due to

Table.2. List of health facilities in three districts visited after the pilot study.

Location of health facilities	Type of health facility	District
Kotri	Taluka Headquarter Hospital	Dadu
Talhar	Rural Health Center	Badin
Nassar Pur	Rural Healt Center	Hyderabad
Tando Jam	Rural Health Center	Hyderabad
Chumbar	Rural Health Center	Hyderabad

non-availability of a medical officer and irregular supply of anti-TB drugs. Rest of the health facilities had the same problem of inadequate addresses of the registered TB patients. One medical officer explained that he had good relationships with two local General Practitioners (GPs) and that they always helped him find the TB cases whenever needed for follow up. He further explained that since there was no formal setting of households in the rural areas with proper addresses, one has to find and live with such kind of alternate arrangements. However, on request to demonstrate such mechanism, he regretted that two GPs were only available in the evening time at their clinics. In one health facility, we did not find a single defaulter for the TB treatment during the whole calendar year, an unexpected and startling finding despite incomplete addresses in the TB register. The TB medical officer explained that this was made possible only due to his personal efforts. He further claimed that being a local doctor he knew the whole catchments population of his health facility. He, however, clarified that patients who came from areas outside the catchment area of his health facility, were not labeled as defaulters if they were lost during the course of treatment. The other two health facilities also portrayed a similar picture with inadequate addresses, no follow-up mechanism, shortage of anti-TB drugs, and non-availability of properly trained personnel for TB management.

Conclusion and Recommendations

A flawed assumption of tracing TB treatment defaulters using the existing information system led to premature cessation of the study during the pilot phase. However, this pilot testing followed by a brief operations research has identified certain important operational problems that render the delivery of TB control program less effective. The most striking discovery was the lack of any meaningful management information system, which can facilitate any follow up of patients. Moreover, there was a serious lack of integration of the TB control Program with the rest of the available health care services, particularly with the field-based Lady Health Workers' National Health Program. These findings indicate that the public sector health care delivery system in Pakistan lacks even the most fundamental elements of an effective health care system.

A DOTS strategy is being implemented in Pakistan under the revised National Tuberculosis Control Program (NTP). DOTS expansion began in earnest after 2000 when the government rehabilitated provincial TB programs through World Bank's Social Action Program Project II.[11] This small-scale operations research was conducted just one year prior to the country-wide launching of DOTS program. The findings thus have several implications for an effective DOTS strategy in the country. The ambitious target of

*Under the National Program for Primary Health Care and Family Planning, local females are recruited to provide community-based health care. Each LHW covers 100-150 households and keeps a complete family profile in a register.

achieving 100% DOTS coverage by the year 2003 requires the Ministry of Health to revisit current DOTS strategy in order to assess the role of Lady Health Workers, the local communities and the General Practitioners in TB case finding, and the use of information system for monitoring the program activities. The existing Health Management Information System in the public sector has tremendous potential to deliver health services more effectively. Its proper utilization in decision-making can improve the quality of collected data. Just recording the complete address of the registered TB patient would greatly facilitate follow-up to ensure completion of the prescribed treatment regimen.

In conclusion, we take this unfinished study as an opportunity to highlight the basic requirements for rendering the TB control program more effective in Pakistan. A reliable health management information system and the functional integration of DOTS program are the important prerequisites to promote an effective decision-making and implementation process. A very good infrastructure is available in the public health system in Pakistan that requires some in-depth inquiry to identify under-lying factors and the means to further strengthen its functional structure.

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