

## Where do tuberculosis patients go for treatment before reporting to DOTS clinics in southern Nigeria?

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**Abstract:** Health-seeking patterns of persons with tuberculosis (TB) before reporting at the Directly Observed Treatment Short-course (DOTS) clinic for diagnosis and treatment were analysed. A total of 221 persons registered in the DOTS programme in 12 randomly selected rural and urban Local Government Areas in southern Nigeria were interviewed using a semi-structured questionnaire. Perceived causes of TB influenced first choice of treatment. Patients re-evaluated initial choices and shop for alternatives in persistent TB. Chemists were the first port of call for most patients. Those with unscientific causative theories of tuberculosis such as witchcraft engaged more in multiple health-seeking than those who indicated bacterial infection ( $P < 0.0001$ ). The respondents had a median diagnostic-delay of 90 days. Delay in commencement of DOTS treatment was attributable to ignorance among patients and poor attitude of health workers. In conclusion, delay exists between recognition of symptoms and initiation of treatment in DOTS clinics partly because of ignorance among patients. Health workers' attitude to patients reporting at health clinics also discouraged the use of DOTS facilities. Consequently, it is recommended to address such delay through social mobilization of communities and through engaging Chemists in TB service delivery in this area.

**Keywords:** tuberculosis, DOTS, health-seeking, Nigeria

### Introduction

Nigeria experienced upsurge of tuberculosis (TB) cases over the past decade. In 2003, there were 44,184 notifications across the country (WHO, 2005), as compared to an estimated 362,819 new cases. The World Health Organization in its 2007 report estimates TB prevalence in Nigeria to be 536 per 100,000 populations (WHO, 2007). The Nigeria National Programme has adopted the WHO recommended strategy as enshrined in the expanded Directly Observed Treatment Short-course (DOTS) strategy. However, a considerable proportion of the Nigerian population lives in areas still not covered by the DOTS services. In 2005 the DOTS coverage in Nigeria was estimated at 65% (WHO, 2007).

Many people with tuberculosis first adopt other approaches before consulting a healthcare facility (Pathania *et al.*, 1997). A process of multiple health-seeking that Auer *et al.* (2000) call 'shopping' for diagnosis and treatment therapy, often delays diagnosis and treatment. Delays and alternative treatment increase the likelihood of developing multi-drug resistant TB, and involves costs to the same patients who were initially deterred by fear of paying for prolonged treatment (Nair *et al.*, 1997).

Personal experiences, perceived aetiology of the disease, stigma, beliefs and attitudes associated with TB are important in health-seeking behaviour. Focus Group Discussions in Vietnam revealed 4 perceptions of TB, each contributing to diagnosis delays, to stigma and isolation of patients and their families (Long *et al.*, 1999). Choice of treatment could depend on the availability of money, and various health care providers (Segar, 1997). Decisions are often influenced by 'significant others' or lay referral groups. Problems arise when health workers and programme managers fail to consider social and behavioural factors in programme design (Okeibunor *et al.*, 1994/95).

Many studies have addressed the factors that affect health-seeking in different socio-cultural milieus. Poor perception of health problems, distance, cost of care and other reasons have been reported as reasons for delay in seeking care among tuberculosis patients in many parts of the world (Buu *et al.*, 2003; Godfrey-Faussett *et al.*, 2002; Baldwin *et al.*, 2004; Needham *et al.*, 1998). Closely related to this is the attitude of health care providers. Labelling patient behaviour as 'ignorant/vicious', 'recalcitrant' and 'non-compliant' hindered the process of negotiation and accommodation within the doctor/patient relationship (Lerner, 1997). Satisfaction with

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health services and social support led to better adherence (Barnhoon *et al.*, 1992). In other settings health workers' poor communication skills are known to lead to poor compliance of TB patients. For instance, health-seeking patterns among TB patients in Vietnam were attributable to the efficiency of health care providers (Lönnroth *et al.*, 1999). The authors blamed patient delay on the inability of health care providers to detect TB. In a recent study of Tainan City of Southern Taiwan, Chiang *et al.* (2005) noted that patient delay was shorter than health system delay. However, from a study of 298 patients in South Africa's rural Northern Province, Pronyk (2001) noted that total delay was shorter among those presenting to hospitals than those presenting to clinics.

While many factors may affect health-seeking, the realities of TB patients differ and this defines their practice. This study was carried out to assess and document the health-seeking patterns of persons with TB in southern Nigeria, using One-Sequential Decision and Action Model (OSDAM). The OSDAM sees the health-seeking in tuberculosis to be influenced not only by socialization and beliefs (e.g. perceived causes) about health problems as stated in the health belief model (HBM), but holds that the infected person is constantly evaluating his/her situation/ response and that further steps are based on this.

## Materials and Methods

### *Study setting and population*

The study focused on the DOTS programme in 14 States in southern Nigeria, assisted by the German Leprosy and TB Relief Association. The area has people with diverse cultural systems, beliefs and health-seeking practices. Each State is made up of local government areas (LGAs), which consist of communities with indigenous leadership. Each community is linked to a primary health care unit.

Akwa-Ibom, Enugu and Ogun States were randomly selected from the South-south, Southeast and Southwest geopolitical zones, respectively. After stratification into rural and urban, two LGAs with DOTS services were selected by balloting from each State stratum, giving 12 study LGAs. The 221 persons with tuberculosis, registered in the DOTS centres of these LGAs, within six months preceding the study were included in the study.

### *Data collection*

A semi-structured questionnaire, which sought information on health-seeking patterns, was employed. The questionnaire was designed to collect data on the sequence of decision made during health seeking for TB as well as the revision of health seeking pattern following the evaluation of the previous decision. This is in line with OSDAM. In OSDAM, the health seeker takes the first step at health seeking in line with the HBM. HBM holds that people respond to illness conditions and seek health in line belief and perception of the illness and effective response pattern derived from earlier socialization. They however, progress to OSDAM when they begin to evaluate initial choices and take decisions on new steps. In OSDAM, applied to TB, therefore, people decide on mode of response, one at a time and based on evaluation results take another action until they arrive at the effective result (Okeibunor & Onyeneho, 2005). The time it takes from recognition of symptoms and adoption of appropriate treatment is important to health programming because to the likely development of multiple drug resistance in the person. To shorten the time lag, one needs to understand the sequence of decision and evaluation of approaches in health seeking. This questionnaire was therefore designed to show the sequence.

### *Data analysis*

Descriptive statistics were employed in characterizing the respondents. The sequence of decision and action in health seeking were carefully analysed and presented in a flow chart. Correlation analysis illustrated the relationship between socio-demographic characteristics of the respondents and their health-seeking practices. Analysis of Variance (ANOVA) tested the mean difference in number of health-seeking attempts patients made before coming to the DOTS clinic.

## Results

A total of 221 patients were registered and interviewed. The mean age of the respondents was 35.4 years, with the majority within the age range of 25-39 years old. More than half (57.9%) of the respondents were married. Others were either single (35.7%), divorced/separated (1.8%) or widowed (4.5%). Christianity accounted for the most common religious affiliations. African traditional religion and free thinkers accounted for 1.4% and 0.5%, respectively.

**Table 1: Socio-demographic characteristics of the respondents**

Socio-demographic characteristics	Frequency	Percentages
<b>Educational level</b>		
Primary	66	29.9
Secondary	113	51.1
Post Secondary	17	7.7
No Formal Education	25	11.3
<b>Occupational Group</b>		
Farmer	16	7.2
Trader	66	29.9
Housewife/Unemployed/student	42	19.0
Professional	18	8.1
Artisan	79	35.8
<b>Income group (Weekly in US\$)</b>		
Nothing	43	19.5
< 10.00	44	19.9
1000.00 – 20.00	62	28.1
21.00 – 40.00	39	17.6
>40.00 +	33	14.9
<b>Income status since TB infection</b>		
Reduced	156	70.6
Increased	1	0.5
No change	64	29.0

Of the 221 respondents, four went straight to the DOTS clinic. The remaining 217 took between one and six other options before reporting at the DOTS clinic (Figure 1). Chemist was the first response for 48% of the respondents in both the rural and urban communities ( $\chi^2= 10.948$ ;  $P =$

The number of attempts patients made outside DOTS system before registering for treatment in the clinic differed significantly with symptoms (Table 2). Those who experienced cough of any type made more attempts outside the DOTS

**Table 2: Distribution of respondents by symptoms, type of treatment and number of attempts at health-seeking before DOTS**

No. attempts outside DOTS	Symptoms noticed			Total	P-value for ANOVA
	Mild cough	Fever and chest pain	Persistent cough		
None	1 (1.9)	0	3 (3.4)	4 (1.8)	F=2.401
One	14 (25.9)	31 (40.3)	24 (27.6)	71 (32.1)	P<0.03
Two	23 (42.6)	34 (44.2)	23 (26.4)	81 (36.7)	
Three	13 (24.1)	9 (11.7)	23 (26.4)	45 (20.8)	
Four	2 (3.7)	3 (3.9)	12 (13.8)	17 (7.7)	
Five	1 (1.9)	0	1 (1.1)	2 (0.9)	
Six	0	0	1 (1.1)	1 (0.5)	
Total	54 (100)	77 (100)	87 (100)	221 (100)	

0.90). As the illness persisted 33% of the infected persons went to DOTS clinics. Alternatively, herbalists, hospitals and prayer houses were consulted. Chemists lost their prominence with the persistence of symptoms.

system than those with pains either in the chest or body. The 221 respondents had a median delay of about 90 days before joining the DOTS programme.

**Table 3: Distribution of respondents by the process towards registration in DOTS**

Process	No. of respondents	Percentage
<i>Those involved in decision to do a medical check-up (N=221)</i>		
No one other than patient		
Spouse	22	10.0
Relatives	18	8.1
Friends	96	43.4
Teacher in school	37	16.7
Boss at work	1	0.5
Health personnel	2	0.9
	45	20.4
<i>First to suspect TB (N=221)</i>		
Patient her/himself	9	4.1
Spouse	4	1.8
Relatives	30	13.6
Friends	19	8.6
Work supervisor	2	0.9
Health personnel	157	71.0
<i>Reason for going for DOTS (multiple answers)</i>		
Symptom became worse	204	92.3
Symptom became embarrassing	102	46.2
Afraid of infecting family members	75	33.9
Spouse Insisted	23	10.4
Became aware of the real problem	82	37.1

The maximum expenditure on seeking care outside the DOTS system was US\$ 911, while

the median was US\$ 25. Most respondents spent around US\$ 12.

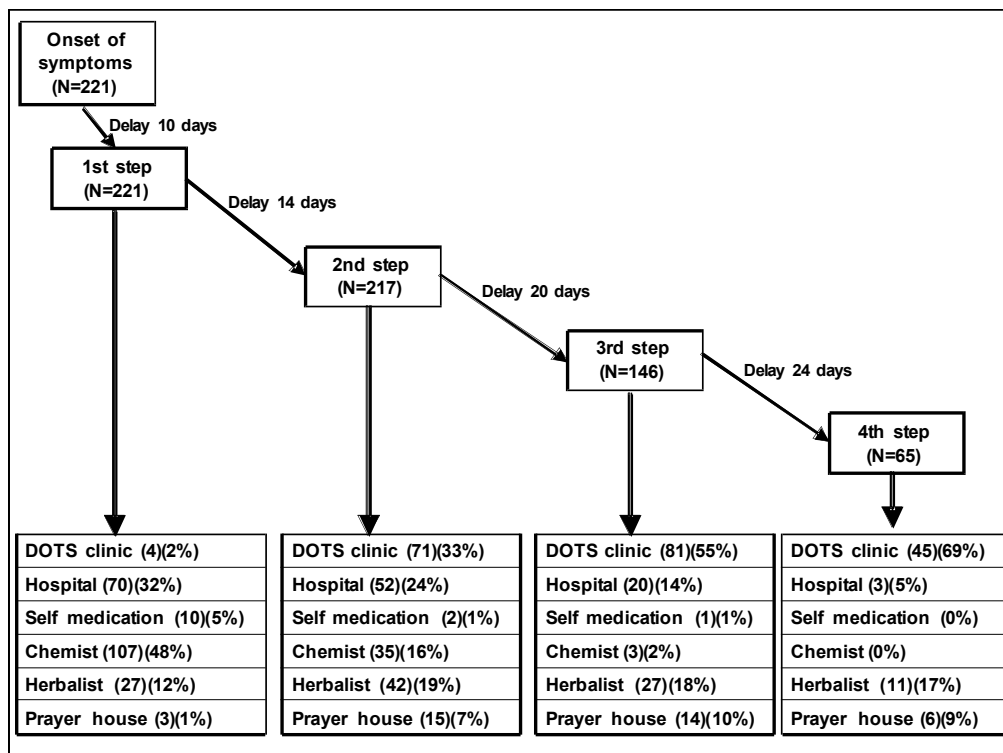


Figure 1: Flow chart on health-seeking steps among a majority of the TB patients with median delays

Advice to go for a medical check-up came mostly from relatives (43.4%). For 92% of the respondents, the worsening situation of the symptoms was one of the reasons to go for a check-up. In most cases (71%) a health practitioner was the first to actually suspect TB (Table 3).

#### *Delayed health-seeking in DOTS clinic*

Delayed in seeking healthcare from DOTS clinics was mainly because most respondents (43.4%) did not consider TB as a serious health problem. Other important reasons for delay included unwelcome attitudes of health workers and the

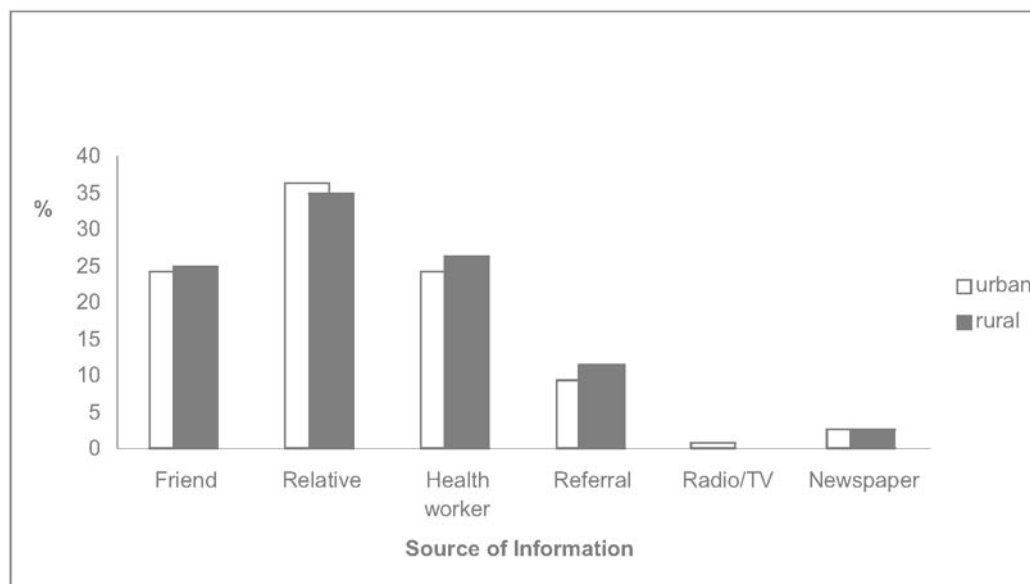


Figure 2: Distribution of respondents by source of information on TB clinic

The most popular source of information on the existence of tuberculosis clinics was the family (36%). Mass media such as radio, television and newspapers were least popular sources of information on tuberculosis DOTS clinics (Figure 2).

tendency of the respondents to prefer alternative medicine (Table 4). Others were to try other options (11%) or the fear for a "spiritual attack" (10%). For many, TB was "very serious" (86.9%) or "serious" (12.2%). A majority (57.0%) of the respondents thought that the infection could lead to death.

Table 4: Distribution of respondents by reason for delayed health-seeking in DOTS clinic

Reasons	Frequency	Percentage
Not considered serious	96	43.4
Had no money	13	5.9
Treatment point is far	10	4.5
To try other options	25	11.3
Want to conceal it	2	0.9
Feared spiritual attack	21	9.5
Thought TB is not curable	1	0.5
Attitude of health workers	52	23.5
No response	1	0.5
Total	221	100.0

According to respondents, infected persons in the communities who conceal their infection go to Chemist (36.0%), herbalist (36.0%) and prayer houses (20.0%). At least 11.3% of the respondents were aware of TB infected persons who were not in the DOTS programme in their communities. Reasons why people with TB fail to report to DOTS clinic include ignorance (64%), attitude of health workers (16.0%) and cost of treatment (16.0%). Respondents suggested awareness creation as the main strategy to attract people to the DOTS clinics.

## Discussion

More than two-thirds of the respondents sought health in at least two other places before going to a DOTS centre. The risk of inappropriate treatment of TB, as a result of multiple health-seeking, is multi-drug resistance, the extent of which has not yet been ascertained in Nigeria. A clear relationship was found between the perceived cause of TB and the tendency to engage in multiple health-seeking. Many people waited to ascertain the type of cough they had as well as the perceived cause of the cough (spiritual or rational). This caused a median treatment delay of about three months.

The issues that come into play during decision making for the first port of call include perceived cost of treatment, the attitude of the health workers, beliefs, locality and household resources rationing. In this study, a quarter of the respondents mentioned the poor attitude of health workers as a reason for delay, which confirms earlier findings (Uplekar *et al.*, 1998; Lerner, 1997). The people visit Chemists and prayer houses before going to DOTS clinic. Cost of treatment was also identified as a factor defining the use of the DOTS clinics in the study area. These agree with findings from other studies (Olumuyiwa *et al.*, 2004; Lwilla *et al.*, 2003; Enwuru *et al.*, 2002; Auer *et al.*, 2000; Wandwalo & Mørkve, 2000; Marinac *et al.*, 1998; Needham *et al.*, 1998).

This study revealed the importance of relatives in disseminating information on the DOTS clinics in the communities. Similarly, in a study in Tanzania it was observed that relatives play an important role as a reliable source of health information (Mboera *et al.*, 2007). If patients depend on information relatives give,

there would be need to health educate and sensitize the community on the activities of the DOTS clinics.

This study has admittedly some limitations. First, we were only able to interview TB patients who eventually sought help at the DOTS centres. It is possible that their views do not reflect those of their counterparts who did not come to the clinics. However, given the multiple help-seeking pattern prevalent in the area and the similar responses elicited from community members, we do not believe that the results would be significantly different had we interviewed TB patients at other sites of care. Second, twelve LGAs included in the survey and the number of persons interviewed were rather too small to allow much generalization of the findings. Third, related to the issue of small sample size is the fact that the area is populated by diverse ethno-cultural groups with varying levels of "social vulnerability", some of whose views might not have been adequately represented by the respondents. Lastly, recall bias is always a possibility in studies such as this, which rely heavily on patients' memory, especially with respect to accuracy of onset of symptoms, timing and sequence of consultation with the various providers.

Our findings suggest that delay in seeking help at DOTS clinics in southern Nigeria is attributable to ignorance and misconceptions on the part of patients and shortcomings of the health service/providers, especially poor attitude of health workers. Community health education and sensitization could be recommended to address misconceptions about TB and create demand for DOTS in the communities. Social mobilization should target community members with the role for case detection and prompt reporting of suspected cases in the clinic. There is also the need for the TB programme to explore ways of engaging the ubiquitous Chemists in order to improve access to quality TB care in the area. As the first port of call for many TB patients, they could reduce the patient delay by referring suspected cases to DOTS clinic for prompt diagnosis and treatment. The attitude of health workers is another area to focus on through enhanced supervision, better working conditions and/or organized community participation in monitoring the programme. We recommend

that more and larger studies exploring patient/ community perspectives be undertaken within the context of the NTP to improve acceptability and effectiveness of interventions.

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### References

- Auer, C., Sarol, J. Jr., Tanner, M. & Weiss, M. (2000) Health-seeking and perceived causes of tuberculosis among patients in Manila, Philippines. *Tropical Medicine & International Health* **5**, 648-655.
- Baldwin, M., Yori, P., Ford, C., Moore, D., Gilman, R., Vidal, C., Ticona E. & Evans, C. (2004) Tuberculosis and nutrition: disease perceptions and health-seeking behaviour of household contacts in the Peruvian Amazon. *International Journal of Tuberculosis & Lung Disease* **8**, 1484-1491.
- Buu, T., Lönnroth, K. & Quy, H. (2003) Initial defaulting in the National Tuberculosis Programme in Ho Chi Minh City, Vietnam: a survey of extent, reasons and alternative actions taken following default. *International Journal of Tuberculosis & Lung Disease* **7**, 735-741.
- Chang, C.T., Li, C.T., Chiang, C.Y., Huang, R.M.. & Chang, R.E (2005) Patient and health system delays in the diagnosis and treatment of tuberculosis in Southern Taiwan. *International Journal of Tuberculosis & Lung Disease* **9**, 1006-1012.
- Enwuru, C., Idigbe, E., Ezeobi, N. & Otegbeye, A. (2002) Care-seeking behavioural patterns, awareness and diagnostic processes in patients with smear- and culture-positive pulmonary tuberculosis in Lagos, Nigeria. *Transaction of Royal Society of Tropical Medicine & Hygiene* **96**, 614-616.
- Godfrey-Faussett, P., Kaunda, H., Kamanga, J., van Beers, S., van Cleef, M., Kumwenda-Phiri, R. & Tihon, V. (2002) Why do patients with cough delay seeking care at Lusaka urban health centers? a health systems research approach. *International Journal of Tuberculosis & Lung Disease* **6**, 796-805.
- Lerner, B.H. (1997) From careless consumptives to recalcitrant patients: The historical construction of non-compliance. *Social Science & Medicine* **45**, 1423-1431.
- Long, N., Johansson, E., Diwan, V.K. & Winkwist, A. (1999) Different tuberculosis in men and women: beliefs from focus groups in Vietnam. *Social Science & Medicine* **49**, 815-822.
- Lönnroth, K., Thuong, L., Linh, P. & Diwan, V. (1999) Delay and discontinuity-a survey of TB patients' search of a diagnosis in a diversified health care system. *International Journal of Tuberculosis & Lung Disease* **3**, 992-1000.
- Lwilla, F., Schellenberg, D., Masanja, H., Acosta, C., Galindo, C., Aponte, J., Egwaga, S., Njako, B., Ascaso, C., Tanner, M. & Alonso, P. (2003) Evaluation of efficacy of community-based vs. institutional-based direct observed short-course treatment for the control of tuberculosis in Kilombero district, Tanzania. *Tropical Medicine and International Health* **8**, 204-210.
- Marinac, J.S., Willsie, S.K., McBride, D. & Hamburger, S.C. (1998) Knowledge of tuberculosis in high-risk populations: survey of inner city minorities. *International Journal of Tuberculosis & Lung Disease* **2**, 804-810.
- Mboera, L.E.G., Rumisha, S.F., Senkoro, K.P., Mayala, B.K., Shayo, E.H. & Kisinza, W.N. (2007) Knowledge and health information communication in Tanzania. *East African Journal of Public Health* **4**, 33-39.
- Nair, D., George, A. & Chacko, K. (1997) Tuberculosis in Bombay: new insights from poor urban patients. *Health Policy and Planning* **12**, 77-85.
- Needham, D. M., Godfrey-Faussett, P. & Foster, S.D. (1998) Barriers to tuberculosis control in urban Zambia: the economic impact and burden on patients prior to diagnosis. *International Journal of Tuberculosis & Lung Disease* **2**, 811-817.
- Okeibunor, J. & Onyeneho, G. (2005) *Health-seeking Behaviour of Patients with Tuberculosis in Southern Nigeria*. A study report submitted to the German Leprosy and Tuberculosis Relief Association, Enugu, Nigeria.
- Okeibunor, J., Asobie, F. & Igboeli, C. (1994/95) Factors associated with the use of SSS among mothers in Nsukka Zone of Enugu State, Nigeria". *International Quarterly Community Health Education* **15**, 127-136.

- Olumuyiwa, O. & Babafemi, J. (2004) Patterns of delays amongst pulmonary tuberculosis patients in Lagos. *Biomedical Central Public Health*. **4**, <http://www.biomedcentral.com/1471-2458/4/18>.
- Pathania, V., Almeida, J. & Kochi, A. (1997) TB patients and private for profit health care providers in India *Global TB Programme of the World Health Organization*. WHO/TB/1997.223, WHO, Geneva.
- Pronyk, P., Makhubele, M., Hargreaves, J., Tollman, S. & Hausler, H. (2001) Assessing health-seeking behaviour among tuberculosis patients in rural South Africa". *International Journal of Tuberculosis & Lung Disease* **5**, 619-627.
- Segar, J. (1997) Hard lives and evil winds: Illness aetiology and the search for healing amongst Ciskeian villagers. *Social Science & Medicine* **44**, 1585-1600.
- Uplekar, M., Juvekar, S., Morankar, S., Rangan, S. & Nunn, P. (1998) Tuberculosis patients and practitioners in private clinics in India. *International Journal of Tuberculosis & Lung Disease* **2**, 324-329.
- Wandwalo, E.R. & Mørkve, O. (2000) Delay in tuberculosis case finding and treatment in Mwanza, Tanzania. *International Journal of Tuberculosis & Lung Disease*, **4**,133-138.
- WHO (2005)** *Global Tuberculosis Control, Surveillance, Planning, Financing*. Geneva, WHO/HTM/TB/2005.349.
- WHO (2007) *Global Tuberculosis Control. World Health Organization Report 2007*. <http://www.who.int/globalatlas/predefinedReport/TB/pdf>.