

## A SYSTEMATIC ANALYSIS OF TB AND POVERTY

### EXECUTIVE SUMMARY

The burden of tuberculosis disproportionately affects the poor. Globally the highest burden of TB is found in poor countries. Seventeen of the twenty-two countries that account for 80 percent of the world's TB burden are classified as low income (GNP per capita of less than US\$760, World Bank 2000). *Within* countries the prevalence of TB is higher among the poor, and other vulnerable groups such as the homeless. Studies in both high income and low-income countries (USA, United Kingdom, Germany, Norway, Vietnam, Mexico and Philippines) reveal significantly higher rates of TB in poor populations (Davies et al. 1999; Grange 1999; Barnes 1998; Tupasi et al. 2000).

Women constitute 70 percent of the world's poor. Globally there are 1.7 times as many male pulmonary TB cases reported annually as female cases (World Health Organisation 2001). Some evidence suggests that this may be due to inequities in access to care (Hudelson 1996) or may reflect underlying epidemiological differences in TB between men and women (Borgdorff et al. 2000). There is evidence that the HIV epidemic, which disproportionately affects women, will increase the proportion of female TB cases in the worst HIV/AIDS affected areas (UNAIDS 2001).

While TB is not exclusively a disease of the poor, deprivation associated with poverty increases the risks of infection and development of disease. There are clear associations between risk of TB and malnutrition and overcrowding (Rieder 1999).

Recognition of the importance of poverty is increasingly reflected in international policy on health and development through, for example, the Report of the Commission for Macroeconomics and Health, the Poverty Reduction Strategy Papers, the Millennium Development Goals, and the Global Fund to fight AIDS, Tuberculosis and Malaria. In 2002, the Stop-TB Partnership adopted "Stop TB, Fight Poverty" as its' World TB-Day theme. Under this theme, the ways in which poverty and TB are associated, and the mechanisms through which poverty increases the risk of infection and disease were summarised in a review of the literature by Hanson (2002 (unpublished)). This current paper extends and complements Hanson's review by further examining the evidence that (i) tuberculosis causes or worsens poverty, and (ii) that DOTS or elements of TB control benefit the poor. This analysis draws upon the Cochrane methodological approach of a systematic review of both published and grey literature (Clarke and Oxman 2000). This included developing a pre-defined search strategy and quality criteria for inclusion and independent assessment of abstracts and articles by two analysts. The discussion of gaps in knowledge, and proposals for a pro-poor approach for DOTS draw from both reviews (Hanson 2002 (unpublished) and Nhlema *et al.* 2003 (unpublished)).

Poverty is multidimensional. Initially poverty was conceptualised in terms of deprivation of income or basic needs. Today the many social and material aspects of poverty are well recognised, and the definition of poverty has expanded to encompass notions of material well-being, an absence of infrastructure, a lack of power and voice, and an unravelling of social structures (Narayan 2000). This review adopted an inclusive approach to the definition of poverty, and assessed how it has been used in the TB literature. It was found that measures of poverty ranged from individual indicators to determine individual or household poverty status (based on income or assets), to aggregate indices assessing geographical areas' poverty status, to the identification, in different settings of groups of people who are *socially* vulnerable (for example the homeless, or migrant populations).

Tuberculosis has a severe impact on the impoverishment of patients and their households. The major factors which lead to impoverishment are: the inability to work due to illness and the direct and indirect costs of accessing diagnosis and treatment. The pathway to TB care is characterised by many, and repeated visits to different care

providers, which are associated with both provider and patient delays (Lienhardt et al.2001; Long et al.1999; Sherman et al.1999; Asch et al.1998; Wandwalo and Morkve 2000). Poor and vulnerable people have longer pathways to care than other social groups. The direct and indirect costs of accessing care are generally higher before diagnosis than after diagnosis (Kamolratanakul et al.1999; Rajeswari et al.1999). Although the aggregate real costs are higher for non-poor patients, the *relative* costs for the poor are much higher. This is because they have little disposable income due to the nature of their livelihood activities, such as daily wage labour and petty trading (Nair et al.1997; Rajeswari et al.1999; Nhlema et al. 2002 (unpublished)). These costs add to the economic burden of households and lead to wider impacts such as children replacing the activities of their ill parents, and an inability to support school fees (Rajeswari et al.1999; Mann et al.2002 (unpublished)). TB also has an impoverishing social impact. Fear and stigma are associated with TB in several settings, particularly for women (Nair et al.1997; Luhanga et al.2001 (unpublished)).

DOTS has the potential to reduce the economic and social burden of TB for patients and their households, however few studies have explicitly examined this question. In two studies in Uganda and Indonesia, it was found that under DOTS, patient costs were reduced and they were able to start working again quickly (Saunderson 1995 and Danusantoso et al.2002 (unpublished)). Studies from a number of developing-countries reveal that the poor have much less access to TB or DOTS programmes than the non-poor, or can be excluded from TB care (Beyers et al.1994; Singh et al.2002; Balasubramanian et al. 2000; Kemp et al. 2001 (unpublished)).

Access to TB services for poor people can be improved by making DOTS pro-poor in each context. Unfortunately most studies that have improved DOTS programmes through specific interventions do not present an analysis of how different population groups (may) have been reached. From a limited number of studies it can be seen that *targeting* TB services to the poor can produce significant benefits. Targeting might include targeting services geographically to poor areas such as slums or to specific population groups such as the homeless or migrants (Kemp et al. 2001 (unpublished); Souza et al. 2000; Dick et al. 1996); targeting the service providers used by the poor, such as private practitioners and NGOS (Murthy et al. 2001); or targeting the service to make it more acceptable and accessible to the poor, such as offering of different "DOT" options, or incentives and enablers (Dick et al. 1996).

From these two reviews it can be seen that there is an immediate need to make DOTS pro-poor. This would be achieved through:

- *Mainstreaming a pro-poor approach in TB control, particularly DOTS expansion:* by reducing barriers to access, increasing case detection and facilitating treatment completion for the poorest through targeted interventions.
- *Addressing knowledge gaps on poverty and tuberculosis:* such as population-based prevalence of TB amongst different groups; the impact of different health financing mechanisms and the long term impact of DOTS on poverty of patients.
- *Disseminating new knowledge of successful pro-poor approaches in different settings*

The global TB control targets are to successfully treat 85 percent of detected smear positive cases and to detect 70 percent of all such cases. Currently it is estimated that less than half of all TB cases worldwide are diagnosed, and approximately 60 percent of the diagnosed cases are cured (WHO 2001). Making DOTS pro-poor is justified on epidemiological, economic and equity grounds (Hanson 2002 (unpublished)) and will significantly contribute to the achievement of the global targets. Furthermore it will place TB control on the global agenda for poverty alleviation, and allow national TB control programmes to engage meaningfully in their Poverty Reduction Strategy Process.

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