3. TUBERCULOSIS AND POVERTY

With the exception of a few isolated regions, tuberculosis has been an endemic global health threat since prehistoric times\(^{20}\). TB has always been and continues to be the exemplar of a social disease; that is, characterized by its close correlation to socio-economic conditions. The elements that characterized the urbanization of many societies during the Industrial Revolution led to an explosive growth in TB incidence. This correlation between TB and the living conditions of the working poor and the destitute continues today throughout the developing world. Air-borne mycobacteria spread easily in settings of over-crowding and where poor nutrition and other illnesses and diseases reduce the immune defenses, putting impoverished people at high risk of acquiring infection and developing active disease.

The global and national distribution of TB closely and inversely correlates with resource distribution:

\textit{Figure 4: TB and Poverty}

\begin{figure}
\centering
\includegraphics[width=\textwidth]{figure4.png}
\end{figure}

The resolution of severe poverty and inequality is clearly beyond the scope of any single disease control program. However, the voice and actions of the international health community must continue to make a significant contribution to the effort to redress inequalities by consistently keeping the correlation between poverty and disease on the global agenda and continuing to focus their efforts to reach the most underserved populations with information, prevention interventions, diagnosis, and treatment.

As a fundamental human right, health deserves investment for its own sake. TB patients and their families pay the cost of TB in suffering, pain and grief. TB also causes psychological and social costs. TB patients may be rejected by family and friends or lose their jobs. In some societies, TB patients are seen as damaged for life or unmarriageable. Such discrimination can result in anxiety, depression, and reduction in the quality of life.

In addition to alleviation of these human costs, alleviation of the global economic burden of TB also represents a justification for investment in TB control from the health economics perspective.\textsuperscript{21} The economic costs of TB fall into two categories: a) indirect costs to society, the community and the patient’s family through lost production; and b) direct costs to the health services and to the patient and the patient’s family. The largest indirect cost of TB for a patient is income lost by being too sick to work. Studies suggest that on average three to four months of work time are lost, resulting in average lost potential earnings of 20% to 30% of annual household income. For the families of those who die from the disease, there is the further loss of about 15 years of income because of the premature death of the TB sufferer. Regarding direct costs, the substantial non-treatment costs borne by TB patients and their families are often greater than the costs of treatment borne by the health sector.

Households have developed strategies for coping with the costs of illness and death that result in actual losses being less than the potential losses. However, some of these short-term strategies can have significant long-term costs. In particular, selling assets can reduce a household’s economic prospects. Reducing children’s food intake or removing them from school can seriously undermine their health, education, and future prospects.

The Stop TB Partnership adopted “Stop TB, Fight Poverty” as the 2002 World TB-Day theme. It commissioned reviews on the status of published and unpublished studies on the relationship between TB and poverty and strategies of response and partners have engaged in

workshops and symposium in 2002-2003 to discuss ongoing research, research priorities, strategic approaches to enhancing the focus on reaching the poor within DOTS expansion efforts, and reaching out to work with other public health practitioners, governments and institutions working on poverty reduction strategies.

The result of this work has led to increasing prominence of these concerns in the strategies under development to speed up TB control, as addressed below. Furthermore, recommendations have been offered on how to increase operational research, and monitoring and evaluation of the equity-enhancing impact and implications of TB control strategies and tools.

Most importantly, leaders in TB control and public health in some of the highest TB burden countries are committing to raise explicit attention to the needs of the poor in their operational strategies. Enhancing access to providers of effective TB care in the public sector, community and private sector and enabling full use of close-to-client services by the poor and most vulnerable is at the heart of these strategies. Making them part and parcel of more national and local disease control efforts is critical.

To expand TB case detection and cures, these themes merit more attention. During the TB Poverty Satellite symposium in Montreal, October 2002, several working groups were formed that discussed different issues of the relationship between TB and poverty. Working Group One of the symposium developed a series of focused recommendations to prioritize pro-poor approaches within the DOTS expansion agenda, including:

**Recommendations for Pro-Poor Approaches in TB Control**

1. Create and make easily accessible a database of poverty-related literature
2. Ensure that each Stop TB working group and other global entity has actively included poverty in its aims and methods as an integrated component throughout their work.

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22 Summary of discussion of Working Group One, TB Poverty Symposium. Montreal, 2002
3. Get TB onto agenda at all poverty-related discussions at all levels.
4. Encourage NTPs to address poverty in national guidelines and set agenda politically, but also to welcome partners, such as NGOs, that can assist in ensuring poverty addressed.
5. Advocate and facilitate national and sub-national mobilization to demand good care for poor & articulate needs. Broaden partnerships at all levels.
6. Extend range of DOTS strategy outcome indicators to include poverty & strengthening of primary health care.
7. Explore measures for accountability of governments and international community

4. INTERSECTIONS WITH POVERTY AND TUBERCULOSIS

From: A Systematic Analysis Of TB And Poverty

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)).

4.1 Access to Health Care

Without active case finding, NTPs rely upon other components of the primary health care system (public health clinics, hospitals, NGOs, private practitioners, community clinics etc.) to refer patients with symptoms of tuberculosis for standardized diagnosis and treatment of tuberculosis. Economic and logistical barriers to health services for impoverished people and isolated rural populations increase the risk that the symptoms of

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TB will not be diagnosed correctly or that there will be substantial delays in initiating treatment. Delays in treatment both increase the likelihood that death or permanent disability will result as well as increasing the risk of transmission of the disease to others.

From: *The International Conference on Primary Health Care, April, 2003*

Equity in health remains an important goal for health systems and the delivery of health services. *The world health report 2000* argued that the goals of health systems are not only the level of health of the population, and the level of responsiveness of the health system to people’s legitimate expectations, but also the equality of that responsiveness across the population and the fairness of financial contributions. These latter elements are reflected in WHO’s work to build up country capacity to strengthen the health component of poverty-reduction strategies and to frame and implement pro-poor health policies.

In Member States where the implementation of primary health care is incomplete or is not delivering expected results, shortcomings are attributed to lack of practical guidance on implementation; poor leadership and insufficient political commitment; inadequate resources, and unrealistic expectations placed on this model of care. Failure of primary health care to reach the target population, such as the poor and other disadvantaged groups, also stem from a number of other complex socioeconomic and political factors.

In developed and middle-income countries in which most populations have access to health services, primary health care focuses on delivering the right services at the right level. In low-income countries which still face significant challenges, primary health care is often used as an overall strategy both to increase services and improve access to them. A key characteristic of any effective local model of primary health care in the future will be adaptability to rapidly changing circumstances, responsiveness to locally defined needs, and sufficient and stable resources. Evidence to support the framing of primary health care policy at national and local levels will need to be built up through improved evaluation.

4.2 TB in Infants and Children

In many societies, women and children, without independent access to or control of resources and household decision-making, are particularly vulnerable to the consequences of poverty. Tuberculosis in infants and children under the age of 16 remains a surprisingly under-developed area of research and attention. Childhood tuberculosis has been described as, “a

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sentinel event in the community” as it is usually indicative of transmission from an (often undiagnosed or untreated) infectious adult.\(^{25}\)

The current annual estimate of pediatric deaths due to TB is 250,000\(^{26}\). In infants less than one year, tuberculosis often progresses very rapidly resulting in severe and disseminated disease. With the absence of accessible health care, the illness is frequently fatal before it can be definitively diagnosed. In areas where radiographic testing is not an option, diagnosis in young children is hampered by the lack of diagnostic options beyond sputum sampling (which most young children are unable to perform) or skin testing that is often not an accurate indicator of active infection in very young infants.

It has been estimated that as many as one third of the world’s population is infected with TB with an estimated 20–50% of children who live in households with active tuberculosis becoming secondarily infected. Children are particularly vulnerable to infection from household contacts as they are often held close and breathed on. Consider the risk for children in high-burden tuberculosis countries in the developing world where family size is large, living quarters are crowded and more than half the population are children.\(^{27}\)

There has been recent movement to advance towards better understanding and interventions in the frequency, reporting and treatment of the disease in infancy and childhood\(^{28}\). Under the auspices of the Global DOTS Expansion Working Group, several organizations and agencies have now formed a sub-group on childhood TB: the International Union Against Tuberculosis and Lung Disease; the United States Centers for Disease Control and Prevention; the International Peadiatric Association; the United States National Institutes of Health (NIAID, NICHD); and the World Health Organization.

**Recommendations For Expanded Infants and Children Services**

1. Expand work on diagnostic algorithms and the study of the epidemiology of childhood TB, especially in low-income settings where the burden is likely to be much higher.

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\(^{26}\) http://www.globalfundam.org/journalists/infosheets/tb.html

\(^{27}\) http://www.stopbt.org/tuberculosis/Children&TB.htm

2. Identify operational approaches to enabling health system workers to provide and maintain preventative treatment for children.
3. Continue to promote and make available BCG vaccine for newborns

4.3 Gender and TB

“The relative importance of tuberculosis is highlighted by the fact that, in the developing world, it kills more women than does all causes of maternal mortality combined”

Detailed analysis of both biophysical and social aspects of gender differentiation in TB is also an underdeveloped but growing focus of research and investigation. Ongoing investigation will be essential, for example, to better understand why notification rate ratios between men and women vary by geographic region. In some countries, (for example, Viet Nam) disease prevalence has been demonstrated to show an almost equal pattern of distribution between the sexes while in others (India) there is a marked discrepancy with much higher rates of smear-positive cases reported in men.

While there are conclusively demonstrated differences in immune-system responses that are attributable to sex, the specific factors to explain differences in the distribution of TB

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between men and women have not yet been clearly identified. It is generally accepted that the differences between female and male notification rate are believed to be a combination of both inherent biological differences and social factors. One pattern that has been observed is that the distribution of the disease is roughly equal throughout childhood and into early adolescence when the divergence between men and women becomes evident. One socio-cultural explanation suggested to explain the divergence is the differences in social mixing patterns in many societies (post-adolescent females are often more restricted in their range of social contact whereas men, with a wider range of employment and social activity may increase their risk of infection). Differences in access to health care between men and women may also be an important factor in differential case detection between men and women in some areas.

The following are excerpts from *Gender and Tuberculosis* from the Department of Gender and Women’s Health at WHO:

Some studies report that less women than men presented with a productive cough, or tested positive for tubercle bacilli on sputum microscopy. Lower rates of notification for women may also be a consequence of a smaller proportion of women than men with tuberculosis visiting a health facility and/or submitting sputum specimens for testing. This may be due to reasons such as difficulty in accessing health care, preference in consulting private practitioners such as traditional healers, lack of female health providers, embarrassment and/or fear of stigma. Information from Bangladesh indicates that women perceive the stigma of TB to be worse for them than for men and this therefore acts as a disincentive for women experiencing chest symptoms to report to a health provider. Similar findings have been reported in Thailand and Vietnam.

Gender differences in behaviour may also influence disease progression. For example, poor nutrition, smoking and alcohol abuse may result in decreased immunity. A 15-year study of 280,000 subjects in south India found that the risk of progression from infection to disease for pulmonary TB was 8.6% among men and 3.1% among women. In the study population, virtually all alcoholics and smokers were males. After excluding smokers and alcoholics, the MF ratio was reduced considerably from 2.7 to 1.2. It would be important to probe deeper into variations in health seeking behaviour and health provider response not only by

gender but also by age and social class to better understand groups that face the most barriers to accessing health care:

Figure 5. Gender and Tuberculosis

**Figure 5. Gender and Tuberculosis**

### Recommendations for Gender-Specific Considerations for Policies and for TB Control Programmes

1. Tuberculosis control programmes need to develop appropriate health education on tuberculosis symptoms, diagnosis and treatment for the general population as well as for health providers, in order to reduce diagnostic delays.

2. Gender considerations regarding health-seeking behavior, outcomes of a positive tuberculosis identification and so on must be integrated into these health education programmes.

3. Information campaigns need to make the availability and location of TB treatment facilities better known in the community to discourage care-seeking for TB from unqualified providers. Such campaigns should make a special effort at targeting women, young people and other vulnerable social groups.

4. Community-based and/or family supervision models of the DOTS strategy may be more successful in achieving treatment compliance and positive outcomes among women as well as men who may be unable to visit treatment centres on a daily basis.

5. Incorporation of gender issues in training curricula for service providers and TB programme managers.

### New Working Group within the Millennium Project

Beginning in November of 2003, as the result of funding from the Hewlett Foundation and the Packard, Ford, and MacArthur Foundations, support was provided to the Millennium Project to study and make recommendations on issues concerning Sexual and Reproductive Health. Organization of this new working group was begun with the participation of the Millennium Project cross-Task Force working group on Gender.

The working group will be developed in more depth in early 2004. This project provides the Global Partnership with an opportunity to advance a TB-specific proposal for investigation that relates to cross-cutting issues between the specific SRH perspective of the working group and related issues of TB and gender.

Suggested topics for consideration by the TB Working Group include:

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36 ibid.
5. MOVING FORWARD

The DOTS Expansion Working Group of the Stop TB Partnership created an ad hoc committee representing governments, TB control implementers, disease control experts and financing partners. The committee identified seven critical areas for focused action and these were endorsed by the full Working Group and by the Stop TB Partnership Coordinating Board. These topic headings (in some cases combined) will be the organizing features for the remaining discussion. Action on each of these themes was seen to be a contributor towards the Millennium Development Goals and to be taken forward in the context of overall national and global development and poverty reduction strategies.

8. Consolidate, sustain, and advance achievements

9. Enhance political commitment

10. Address the health workforce crisis

11. Strengthen health systems, primarily primary care delivery

12. Accelerate the response to TB/HIV emergency

13. Mobilize communities and the corporate structure

14. Invest in research to shape the future

6. CONSOLIDATE, SUSTAIN, AND ADVANCE ACHIEVEMENTs

Since the development of the strategy now known as DOTS treatment model two decades ago, HIV/AIDS and Multi-Drug Resistant TB (MDR-TB) have emerged throughout the world. The successful implementation of the 5-component DOTS strategy now also