

Drivers and Determinants of the Tuberculosis Epidemic: the dTB project

Terms of Reference for a 12-month, cross-departmental study, led by HTM/STB

Background and rationale

There is a general awareness in the TB research and control community that "risk factors" other than HIV – such as diabetes, tobacco smoking, indoor air pollution, vitamin deficiencies, malnutrition, crowding, and silicosis – are drivers and determinants of TB distribution around the world. However, their importance as factors that could obstruct or reinforce TB control has rarely been discussed explicitly. Preliminary observations, made by the Stop TB Department during 2006, suggest that the Stop TB Strategy is not having the anticipated impact on TB transmission and incidence, notably in Asia, even at apparently high rates of case detection and cure.

The failure to reduce TB burden as expected is likely to be explained by a combination of risk factors, including those above, as well as a broad array of socioeconomic and demographic factors that determine the risk of exposure to these factors, such as income, education, gender, age and ethnicity. Further "upstream" in the causal chain, both the first-level risk factors and their second-level socioeconomic determinants are linked to public health policy, environmental policy, health systems policy and socioeconomic policy as well as to various societal phenomena such as demographic transition, urbanisation and globalization.

Identifying the multiple levels of casual factors opens up for a range of potential areas of interventions, including:

- assistance to strengthen specific public health programmes that target the risk factors directly (such as special programmes on HIV, smoking, malnutrition, indoor pollution, etc)
- contribution to health systems strengthening in order to improve implementation of public health programmes as well as to improve clinical care and health education for people with conditions that may increase risk of TB (HIV, diabetes, nutritional deficiencies, etc)
- advocacy for improving public health policy and legislation, environmental policy and socioeconomic policy

If the Stop TB Strategy, implemented via The Global Plan to Stop TB (2006-15), is unlikely to reach the Millennium Development Goals, then the strategy would need to be revised, and well in advance of the 2015.

Purpose

The purpose of this 12-month project is to:

- quantify more precisely the epidemiological patterns associated with the apparent failure to reduce transmission and incidence;

- quantify the population level impact on the TB epidemic of various risk factors
- identify the dominant reasons why transmission and incidence are not falling as anticipated, especially in Asia.
- explore the possible areas of interventions to reduce the negative impact of the risk factors, including addressing their upstream determinants

Methods

The work will be carried out through:

- a detailed analysis of routine TB surveillance data (case notifications, treatment outcomes) from selected countries, down to district level, to determine precise trends in transmission and incidence;
- a quantitative review of risk factors for TB infection and progression to active disease, with calculations of population attributable fractions;
- development of an analytical framework for the identification of possible interventions which are not yet part of the Stop TB Strategy
- mathematical modelling to evaluate present and future risks to TB control programmes, coupled with an assessment of the potential impact of (a) the current Stop TB Strategy in the face of newly-identified risks, and (b) interventions that address new risk factors specifically, going beyond the current strategy.

The study will be led by the Stop TB Department, and carried out with other departments in WHO and outside, including the Tobacco Free Initiative, Public Health and Environment, Chronic Diseases and Health Promotion, and CDC Atlanta. Others will be brought into the project as necessary.

The STB team will include C. Dye (TME), E. Jaramillo (THD), K. Lönnroth (TBS) and B.G. Williams (TME).

Budget

The approximate budget for the project will be \$150,000 (travel, APWs for commissioned research, publications).

Output

A series of technical reports, scientific publications and policy papers, including:

- February: commissioned book chapter, including a review of risk factors for TB infection and disease.
- April: original and review papers presented at a symposium on risk factors for TB, to be held at the annual TB Surveillance and Research Unit (TSRU) meeting, KNCV, The Hague.
- July: draft paper on the social determinants of TB, as a contribution to the work of WHO's Commission on the Social Determinants of Health, to be finalized by end 2007.
- December: draft report on drivers and determinants of the TB epidemic, setting out the implications for the Stop TB Strategy, the Global Plan to Stop TB, and the Millennium Development Goals.

