Executive summary

This document presents an estimation of the global burden of disease from exposure to second-hand smoke (SHS). The evidence on exposure-risk relationships is mainly drawn from recent reviews and meta-analyses. Exposure is estimated from major surveys and other published reports on both children and adults. Missing exposure information has been modelled on the basis of active smoking prevalence. Estimates of the burden of disease are calculated by age group, gender and country population, and results are also presented for 14 regions, children and adults, and by gender. Uncertainties are discussed and a sensitivity analysis has been performed.

Second-hand smoke is estimated to have caused about 603,000 premature deaths in 2004. These include 166,000 deaths from lower respiratory infections and 1100 from asthma in children, and 35,800 deaths from asthma, 21,000 deaths from lung cancer and 379,000 deaths from ischaemic heart disease (IHD) in adults. This disease burden amounts in total to about 10.9 million disability-adjusted life years (DALYs). Of all deaths attributable to SHS, 28% occur in children, and 47% in women.

The main sources of uncertainty include the estimation of exposure in the presence of incomplete data, the global use of a common indicator for received dose, the exposure-risk relationship – in particular its application to different parts of the world with different smoking, behavioural and housing patterns, and the burden of disease in non-smokers. Additional information that has been considered in this study includes biomarker studies, daily number of cigarettes smoked per smoker in each region, number of persons smoking per household, and the findings of epidemiological studies performed in developing countries. We have examined the possible impacts of variations in the critical parameters in the global burden of disease (GBD) analysis, and conclude that the presented estimate is reasonably robust.