

ESTIMATING THE GLOBAL BURDEN OF *TAENIA SOLIUM* CYSTICERCOSIS/TAENIOSIS

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Cysticercosis/Taeniosis is emerging as a serious public health and agricultural problem in many developing areas of the world. Caused by a pork tapeworm, *Taenia solium*, this zoonotic disease forms cysts in humans and pigs that can lead to epilepsy and death in humans, makes pork unsafe to eat and reduces the value of pigs. It occurs where sanitation is poor, meat inspection is inadequate and pigs range freely, and so is strongly associated with poverty. Although theoretically easy to control and declared eradicable cysticercosis remains neglected primarily due to lack of information and awareness about the burden of the disease leading to a perception that it is of little importance in endemic areas. This false perception of little or no burden coupled with the fact that the disease is zoonotic leading to confusion as to which sector should be responsible for addressing the problem (i.e. health or agriculture) has resulted in cysticercosis remaining one of the most neglected of the neglected tropical diseases. In 2002 WHO commissioned an initial review of the global burden of *T. solium* cysticercosis to increase awareness of the issue and a to serve as a basis and justification for action to combat the disease.

The global burden assessment of cysticercosis was led by Professor Hélène Carabin of the University of Oklahoma. Decision Tree Analysis was chosen as the most appropriate assessment tool for determining the full burden of cysticercosis in order to comprehensively estimate the societal costs of the disease, capturing the impacts on both health and agriculture as well as productivity in general while also describing the international variability in the monetary burden. The burden assessment utilised literature review and submission of data from local collaborators to provide the epidemiological, agricultural and economical information needed to organise country-specific decision “trees”. The methodology for conducting the assessment has been published internationally. Unfortunately there were only a few countries including India, Honduras, USA and South Africa (Eastern Cape Province) where adequate, quality epidemiological and cost data were provided that enabled us to conduct the burden assessment. Results of the decision tree analysis of the burden of cysticercosis in Eastern Cape Province (ECP) of South Africa has now been published indicating that the annual cost of the disease in that poor province may range between US \$18-34 million. Epilepsy was found to have the largest overall impact on the burden in that province such that the prevalence of epilepsy, proportion of patients with epilepsy seeking care and the proportion of work time lost all had substantial influence on the costs. The agricultural costs of cysticercosis in ECP were relatively low however most people in the region reported raising pigs for their own consumption (as opposed to selling them) and although 76% of people reported seeing cysts in the pork more than 80% of them did not know what the cysts were.

A second phase of the global burden assessment of cysticercosis is now underway whereby more active data collection will be undertaken in a select group of endemic countries which are considered to have quality epidemiological and cost data available. The first of these will be Mexico where a new project will utilise both Decision Tree Analysis and DALYs to assess the burden of cysticercosis in that country which will enable a comparison of the two assessment methods.