

REASSESSMENT OF THE SOCIO-ECONOMIC GLOBAL BURDEN OF RABIES: HUMAN AND ANIMAL COST OF GLOBAL RABIES

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Rabies remains a low priority for the global public health community, despite the feasibility of control and potential for elimination. A lack of accurate data on the burden of rabies contributes to this neglect. In an effort to redress this balance, we have launched a global survey amongst stakeholders in rabies control and prevention and are reviewing published literature with the aim of re-assessing the global burden of canine rabies. This research highlights knowledge gaps in key parameters (exposure incidence, probability of bite-victims receiving post-exposure prophylaxis, and prevalence of rabies in animal populations) and geographical regions (North and Central Africa, China, Central and South Asia) where data is sparse or cannot be reliably validated. Nonetheless, we identify significant correlations between key epidemiological parameters and socioeconomic attributes and use these to parameterize a probabilistic model to quantify the burden of rabies with country data or cluster averages. The model suggests that the death toll from rabies is greater than all other zoonoses and that the global burden of rabies in disability-adjusted life-years exceeds that of schistosomiasis, trypanosomiasis, onchocerciasis and dengue. The study generates a number of location-specific predictions that could be tested with active surveillance studies, and provides guidance for future research and prioritization of strengthening control efforts. Critically, the model draws attention to the relationship between investment in rabies control in the animal sector and concomitant reductions in human rabies and expenditure by the public health sector. Overall these findings demonstrate the magnitude of the burden of rabies and the substantial reductions in human suffering and economic savings possible through multisectoral and political commitment towards rabies control.

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