

# RABIES AND ENVENOMINGS

## A NEGLECTED PUBLIC HEALTH ISSUE

**Report of a Consultative Meeting**

World Health Organization, Geneva

10 January 2007



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## WHO Library Cataloguing-in-Publication Data

Rabies and envenomings : a neglected public health issue : report of a Consultative Meeting, WHO, Geneva, 10 January 2007.

1.Rabies – drug therapy. 2.Rabies – epidemiology. 3. Bites and stings – drug therapy 4.Bites and stings – epidemiology. 5.Immunization, Passive – utilization. 6.Antivenins – economics 7.Drug industry – economics. I.World Health Organization.

ISBN 978 92 4 156348 2

(NLM classification: WD 400)

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### ACKNOWLEDGEMENTS

This Report was developed by compiling the information provided at the WHO Consultative Meeting on RABIES AND ENVENOMINGS: A NEGLECTED PUBLIC HEALTH ISSUE that took place at WHO, Geneva on 10 January 2007. It was prepared by Professor D. Warrell, University of Oxford, Oxford, United Kingdom and Dr J-M Gutierrez, Universidad de Costa Rica, San José, Costa Rica that served as Rapporteurs and Dr A. Padilla, Project Leader, WHO.

Acknowledgements are due to all the participants for the information and comments provided during the Consultative Meeting. Special thanks are due to the speakers for their excellent presentations and written comments in support of the preparation of the Report.

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# SUMMARY

The people most affected by rabid dog bites, snake bites and scorpion stings usually live in poor rural communities where medical resources are often sparse. Because they lack a strong political voice, their problems tend to be overlooked by politicians and health authorities who are based in capital cities and are poorly informed about major public health issues affecting rural areas. Consequently, the impact of these health issues, although dramatic and economically significant, does not appear as a priority in the design of national public health programmes. These are therefore the most neglected among today's neglected global health problems.

The gravity of this situation should be discussed explicitly in national, regional and global health fora, in order to give these neglected diseases and their abandoned victims the attention they deserve. The situation is particularly poignant because, in contrast to some other diseases, a highly effective treatment already exists: the timely administration of specific antiserum. Rabies, for instance, is entirely preventable even after severe exposure, provided post-exposure prophylaxis, completed with rabies immunoglobulin, can be given. Similarly, the mortality and morbidity of snake bites and scorpion stings can be reduced to very low levels by timely administration of appropriate antivenoms.

The state of antisera production worldwide varies greatly. Public access to production technology following GMP standards, together with a concerted exchange process through workshops, direct technical assistance and innovation in specific aspects of manufacture and training, should allow the less developed manufacturing laboratories to strengthen their technical and production capacities. The possibility of partnerships should be promoted, including, in the case of antivenoms, the creation of groups developing the skills needed for the preparation of high quality venom pools and the subsequent preparation of antivenoms.

In summary, the current situation of the management of potentially rabid mammal bites and envenomings by snake bites or scorpion stings worldwide is a global public health emergency. There is a lack of awareness of the magnitude of the problem by health authorities and politicians alike, due to both the scarcity of adequate statistics on the real impact of these diseases, and the lack of advocacy by and on behalf of the affected groups, mostly children and rural agricultural workers. Worldwide production of these antisera has declined, due to economic constraints that have forced the withdrawal of some private producers, and to the weakening of public-sector manufacturers in the public sector in many countries. Moreover, the poor quality of some antisera and the resulting deficiency in their efficacy and safety, together with deficient distribution policies and inadequate training of medical and nursing staff requires an urgent international action. The gravity of this problem, and the complexity of its causes, demands from the public health community, and especially from the WHO and humanitarian international agencies, a concerted, rapid and effective global response to reduce the burden of human suffering incurred by rabies, and snake and scorpion envenomings.



# INTRODUCTION

A meeting of stakeholders to discuss measures to ensure sustainable production of effective and safe therapeutic antisera<sup>1</sup> for treatment of rabid dog bites and envenomings due to snake bites or scorpion stings was convened by the Department of Medicines Policy and Standards, Health Technology and Pharmaceuticals Cluster, on 10 January 2007 at the World Health Organization (WHO) Headquarters, Geneva. This was the first meeting held by the WHO to address the need for strengthening the production systems of these biological preparations at a global level. Animal-derived antisera are the only effective treatments of envenoming, and are essential, in combination with vaccination and wound maintenance, for post-exposure rabies prophylaxis.

More than 40 participants from countries representing all WHO Regions were welcomed to the Consultative Meeting by Dr. Howard Zucker, Assistant Director General of the WHO Health Technology and Pharmaceuticals Cluster, and Dr. Hans Hogerzeil, Director, Medicines Policy and Standards Department. It was noted that there is a growing crisis in the production, accessibility and use of therapeutic antisera in regions where snake bites, scorpion stings and exposure to rabies have their greatest public health impact. These neglected public health conditions affect more than 14 million people annually, especially in the developing world; yet, effective treatment, critically dependent on therapeutic antisera (e.g. rabies immunoglobulin and antivenoms), is often unavailable or unaffordable, in particular in Africa and Asia. This results in high mortality and morbidity with grave socioeconomic consequences. Children and young agricultural workers are the worst affected by these conditions. Therapeutic antisera are included in the WHO Essential Medicines List (1).

The shortage of therapeutic antisera has become a critical global health issue. Many manufacturers in the developed world have abandoned production of antisera because of market limitations in countries with developed economies. In developing countries, the remaining producers of antisera are vulnerable to fluctuations and uncertainties in market demand, to private takeover of former national companies, and to the lack of financial investment to upgrade the facilities to comply with good manufacturing practices (GMP). As a result, the world is at risk of losing a critical mass of skill, experience and production capacity that is vital to the maintenance of an adequate supply of antisera of assured quality.

The crisis in the availability of rabies immunoglobulin and antivenoms calls for an international effort to ensure expertise in developing countries and, when needed, facilitate the transfer of technology. There is also a need to address major logistic problems in distribution

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