

Research Priorities for Zoonoses and Marginalized Infections

Technical report of the TDR Disease Reference Group on Zoonoses
and Marginalized Infectious Diseases of Poverty



World Health
Organization

The World Health Organization was established in 1948 as a specialized agency of the United Nations serving as the directing and coordinating authority for international health matters and public health. One of WHO's constitutional functions is to provide objective and reliable information and advice in the field of human health, a responsibility that it fulfils in part through its extensive programme of publications. The Organization seeks through its publications to support national health strategies and address the most pressing public health concerns of populations around the world. To respond to the needs of Member States at all levels of development, WHO publishes practical manuals, handbooks and training material for specific categories of health workers; internationally applicable guidelines and standards; reviews and analyses of health policies, programmes and research; and state-of-the-art consensus reports that offer technical advice and recommendations for decision-makers. These books are closely tied to the Organization's priority activities, encompassing disease prevention and control, the development of equitable health systems based on primary health care, and health promotion for individuals and communities. Progress towards better health for all also demands the global dissemination and exchange of information that draws on the knowledge and experience of all WHO's Member countries and the collaboration of world leaders in public health and the biomedical sciences. To ensure the widest possible availability of authoritative information and guidance on health matters, WHO secures the broad international distribution of its publications and encourages their translation and adaptation. By helping to promote and protect health and prevent and control disease throughout the world, WHO's books contribute to achieving the Organization's principal objective – the attainment by all people of the highest possible level of health.

The WHO Technical Report Series makes available the findings of various international groups of experts that provide WHO with the latest scientific and technical advice on a broad range of medical and public health subjects. Members of such expert groups serve without remuneration in their personal capacities rather than as representatives of governments or other bodies; their views do not necessarily reflect the decisions or the stated policy of WHO. An annual subscription to this series, comprising about four to six such reports, costs CHF 150.00/US\$ 180.00 (CHF 105.00/US\$ 126.00 in developing countries). For further information, please contact: WHO Press, World Health Organization, 20 avenue Appia, 1211 Geneva 27, Switzerland (tel. +41 22 791 3264; fax: +41 22 791 4857; e-mail: bookorders@who.int; order on line: <http://www.who.int/bookorders>).

Research Priorities for Zoonoses and Marginalized Infections

Technical report of the TDR Disease Reference Group on Zoonoses
and Marginalized Infectious Diseases of Poverty

*This report contains the collective views of an international group of experts and
does not necessarily represent the decisions or the stated policy of the World Health Organization*



**World Health
Organization**

WHO Library Cataloguing-in-Publication Data

Research priorities for zoonoses and marginalized infections.

(Technical report series ; no. 971)

1. Zoonoses. 2. Research. 3. Neglected diseases. 4. Poverty. 5. Developing countries.

I. World Health Organization. II. TDR Disease Reference Group on Zoonoses and Marginalized Infectious Diseases of Poverty. III. Series.

ISBN 978 92 4 120971 7

(NLM classification: WC 950)

ISSN 0512-3054

© World Health Organization 2012

All rights reserved. Publications of the World Health Organization are available on the WHO web site (www.who.int) or can be purchased from WHO Press, World Health Organization, 20 Avenue Appia, 1211 Geneva 27, Switzerland (tel.: +41 22 791 3264; fax: +41 22 791 4857; e-mail: bookorders@who.int).

Requests for permission to reproduce or translate WHO publications – whether for sale or for noncommercial distribution – should be addressed to WHO Press through the WHO web site (http://www.who.int/about/licensing/copyright_form/en/index.html).

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.

The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by the World Health Organization in preference to others of a similar nature that are not mentioned. Errors and omissions excepted, the names of proprietary products are distinguished by initial capital letters.

All reasonable precautions have been taken by the World Health Organization to verify the information contained in this publication. However, the published material is being distributed without warranty of any kind, either expressed or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall the World Health Organization be liable for damages arising from its use.

This publication contains the collective views of an international group of experts and does not necessarily represent the decisions or the policies of the World Health Organization.

Printed in Italy

Contents

WHO/TDR Disease Reference Group on Zoonoses and Marginalized Infectious Diseases of Poverty (DRG 6) 2009–2010

v

Abbreviations

vii

Executive summary

ix

1. Introduction

1

- 1.1 Rationale and context 1
- 1.2 Zoonoses and the Millennium Development Goals 3
- 1.3 Challenges 4
- 1.4 Scope of the report 6
- 1.5 Group membership 7
- 1.6 Host country 7
- 1.7 Think tank members 7

2. Methodology and prioritization

9

- 2.1 Informal consultation 9
- 2.2 Selection of DRG members 9
- 2.3 First DRG meeting 10
- 2.4 Stakeholders' consultations 10
- 2.5 Second DRG meeting 11
- 2.6 Prioritization process 11
- 2.7 Transformation of DRG report to TRS 12

3. Burden of disease

13

- 3.1 Estimating the burden of parasitic zoonoses: approaches and challenges 13
 - 3.1.1 Measures of mortality, morbidity and health-associated life years 15
 - 3.1.2 Economic (monetary) burden of zoonotic disease 18
 - 3.1.3 Case-studies 19
- 3.2 Disease-specific issues and burden 22
 - 3.2.1 Helminths 22
 - 3.2.2 Protozoan infections 31
 - 3.2.3 Bacterial infections 34
 - 3.2.4 Viral infections 44

4. Intervention-oriented research issues

47

- 4.1 Community-led or community-directed interventions 47
 - 4.1.1 Community-led Total Sanitation 48
 - 4.1.2 CLTS and zoonotic diseases 49
- 4.2 The human/animal interface: "One Health" as a concept 53
- 4.3 Chemotherapy and immunization 58
 - 4.3.1 Mass chemotherapy (mass-targeted, humans-animals) 58
 - 4.3.2 Immunization against rabies 59
- 4.4 Vector and intermediate host control 60
- 4.5 Vaccination as a control option for zoonotic diseases 61
 - 4.5.1 Animal-targeted immunization 61
 - 4.5.2 *Echinococcus granulosus* 63

4.5.3	Vaccine against <i>Taenia solium</i>	64
4.5.4	Foodborne trematode vaccines	64
4.6	Human-targeted vaccines	64
4.6.1	Enteric infections	64
4.7	Animal reservoirs	66
4.8	Health education and health literacy	67
4.9	Development of human resources	71
4.10	Integrated approaches	71
4.11	New products and strategies	72
4.12	Health systems and interactions with other sectors: intersectoral dialogue	74
4.13	Cost–effectiveness analysis	74
5.	Disease-specific and intervention-specific priorities for research	77
5.1	Disease-specific research priorities	77
5.1.1	Cysticercosis and taeniasis	77
5.1.2	Echinococcosis	78
5.1.3	Asian schistosomiasis	78
5.1.4	Foodborne trematodiasis	79
5.1.5	Toxoplasmosis	80
5.1.6	Cryptosporidiosis	80
5.1.7	Rabies	81
5.1.8	Bacterial zoonoses	82
5.1.9	Enteric infections	84
5.2	Intervention-specific research priorities	85
5.2.1	Community-led Total Sanitation	85
5.2.2	Animal/human interface	86
5.2.3	Epidemiological studies	86
5.2.4	Health education and promotion	87
6.	Cross-group issues and priorities	89
6.1	Interactions with Disease and Thematic Reference Groups	89
6.2	Priorities for policy-makers	90
7.	Conclusions	91
	Acknowledgements	93
	References	95
	Appendices	109

WHO/TDR Disease Reference Group on Zoonoses and Marginalized Infectious Diseases of Poverty (DRG 6) 2009–2010

Reference Group Members

Dr H. Carabin, University of Oklahoma Health Sciences Centre, Oklahoma, OK, USA

Dr S. Cleaveland, Reader, Division of Ecology and Evolutionary Biology, University of Glasgow, Glasgow, Scotland

Dr A. Garba, Director, Réseau International Schistosomose, Environnement, Aménagement et Lutte (Riseal), Niamey, Niger

Dr E. Gotuzzo, Director, Instituto de Medicina Tropical "Alexander von Humboldt", Universidad Peruana Cayetano Heredia, Lima, Peru

Dr Z. Hallaj, Senior Consultant on communicable diseases, WHO/EMRO, Cairo, Egypt (*co-Chair*)

Dr K. Kar, Chairman, CLTS Foundation, Calcutta, India

Professor G.T. Keusch, Professor of International Health and of Medicine, Boston University, Boston, USA

Professor D.H. Molyneux, Senior Professorial Fellow, Liverpool School of Tropical Medicine, Liverpool, England (*Chair*)

Professor D.P. McManus, National Health and Medical Research Council of Australia Senior Principal Research Fellow, Head of Molecular Parasitology Laboratory, Queensland Institute of Medical Research, Brisbane, Australia

Dr H. Ngowi, Department of Veterinary Medicine and Public Health, Sokoine University of Agriculture, Morogoro, United Republic of Tanzania

Dr P. Ramos-Jimenez, Philippine NGO Council on Population Health and Welfare, Pasay City, Philippines

Dr A. Sanchez, Associate Professor, Department of Community Health Sciences, Brock University, St. Catharines, Ontario, Canada

Career Development Fellow

Dr H.M. Abushama, Assistant Professor in Immunogenetics, Department of Zoology, Faculty of Science, University of Khartoum, Khartoum, Sudan

Secretariat

Dr A. Bassili, TB Surveillance Officer and Focal Point, Tropical Disease Research, Communicable Disease Control, WHO Regional Office for the Eastern Mediterranean, Cairo, Egypt

Dr C.L. Chaignat, Medical Officer, Water, Sanitation and Hygiene, Protection of the Human Environment, WHO, Geneva, Switzerland

Dr D. Kioy, Scientist, Special Programme for Research and Training in Tropical Diseases, WHO, Geneva, Switzerland (*Manager*)

Dr F.X. Meslin, Coordinator, Neglected Zoonotic Diseases, Neglected Tropical Diseases, WHO/HQ, Geneva, Switzerland

Dr A.L. Willingham, Scientist, Special Programme for Research and Training in Tropical Diseases, WHO, Geneva, Switzerland

预览已结束，完整报告链接和

<https://www.yunbaogao.cn/report/index/report>