

Cambridge University Press

978-1-107-00251-7 - Principles of Medicine in Africa, Fourth Edition

Edited by David Mabey, Geoffrey Gill, Sir Eldryd Parry, Martin W. Weber and Christopher J. M. Whitty

Frontmatter

[More information](#)

---

# Principles of Medicine in Africa, Fourth Edition

---

Cambridge University Press

978-1-107-00251-7 - Principles of Medicine in Africa, Fourth Edition

Edited by David Mabey, Geoffrey Gill, Sir Eldryd Parry, Martin W. Weber and Christopher J. M. Whitty

Frontmatter

[More information](#)

---

Cambridge University Press

978-1-107-00251-7 - Principles of Medicine in Africa, Fourth Edition

Edited by David Mabey, Geoffrey Gill, Sir Eldryd Parry, Martin W. Weber and Christopher J. M. Whitty

Frontmatter

[More information](#)

# Principles of Medicine in Africa, Fourth Edition

---

Edited by

**David Mabey**

Professor of Communicable Diseases, London School of Hygiene and Tropical Medicine, London, UK

**Geoffrey Gill**

Professor of International Medicine, Liverpool School of Tropical Medicine, Liverpool, UK

**Sir Eldryd Parry**

Honorary Professor, London School of Hygiene and Tropical Medicine, London, UK

**Martin W. Weber**

Team Leader, Maternal and Child Health, World Health Organization, Jakarta, Indonesia

**Christopher J.M. Whitty**

Professor of International Health, London School of Hygiene and Tropical Medicine, London, UK



**CAMBRIDGE**  
UNIVERSITY PRESS

Cambridge University Press

978-1-107-00251-7 - Principles of Medicine in Africa, Fourth Edition

Edited by David Mabey, Geoffrey Gill, Sir Eldryd Parry, Martin W. Weber and Christopher J. M. Whitty

Frontmatter

[More information](#)

CAMBRIDGE UNIVERSITY PRESS  
Cambridge, New York, Melbourne, Madrid, Cape Town,  
Singapore, São Paulo, Delhi, Mexico City

Cambridge University Press  
The Edinburgh Building, Cambridge CB2 8RU, UK

Published in the United States of America by  
Cambridge University Press, New York

[www.cambridge.org](http://www.cambridge.org)

Information on this title: [www.cambridge.org/9781107002517](http://www.cambridge.org/9781107002517)

© Cambridge University Press 2013

This publication is in copyright. Subject to statutory exception and to the provisions of relevant collective licensing agreements, no reproduction of any part may take place without the written permission of Cambridge University Press.

First edition first published 1976

Second edition first published 1991

Third edition first published 2004

Fourth edition first published 2013

Printed and bound in the United Kingdom by the MPG Books Group

*A catalogue record for this publication is available from the British Library*

*Library of Congress Cataloging-in-Publication Data*

Principles of medicine in Africa / edited by David Mabey . . . [et al]. – 4th ed.

p. ; cm.

Includes bibliographical references and index.

ISBN 978-1-107-00251-7 (Hardback)

I. Mabey, David.

[DNLM: 1. Tropical Medicine–methods–Africa. 2. Public Health Practice–Africa. WC 680]

616.0096–dc23

2011046380

ISBN 978-1-107-00251-7 Hardback

Cambridge University Press has no responsibility for the persistence or accuracy of URLs for external or third-party internet websites referred to in this publication, and does not guarantee that any content on such websites is, or will remain, accurate or appropriate.

Every effort has been made in preparing this book to provide accurate and up-to-date information which is in accord with accepted standards and practice at the time of publication. Although case histories are drawn from actual cases, every effort has been made to disguise the identities of the individuals involved. Nevertheless, the authors, editors and publishers can make no warranties that the information contained herein is totally free from error, not least because clinical standards are constantly changing through research and regulation. The authors, editors and publishers therefore disclaim all liability for direct or consequential damages resulting from the use of material contained in this book. Readers are strongly advised to pay careful attention to information provided by the manufacturer of any drugs or equipment that they plan to use.

# Contents

*List of contributors* viii

*Foreword by Dr Tedros Adhanom Ghebreyesus* xiv

## Section 1 – Health and disease

1. **People and the environment** 1  
Gail Davey and Eldryd Parry
2. **Food and nutrition** 24  
Andrew Prentice and Chidi Nweneka
3. **Refugees and disasters** 46  
Michael D. E. Pelly and Timothy D. Healing
4. **Managing a health service with management and financing of drug supply** 53  
Heiner Grosskurth, Ruari Brugha, Benson Droti and Susan Foster

## Section 2 – Mother and child health

5. **The pregnant patient** 70  
Camilla Buchanan, Peter Olute Okoth and Amha Achamyelew Yigzaw
6. **Neonatal care** 80  
Giorgio Tamburlini and Fabio Uxa
7. **The integrated management of childhood illness (IMCI)** 88  
Martin W. Weber, Ayo Palmer and E. Kim Mulholland
8. **Severe acute malnutrition in childhood** 103  
Sam Akech, Steve Collins and James A. Berkley
9. **Diarrhoea** 113  
Martin W. Weber and Melita Gordon
10. **Pneumonia and other acute lower respiratory tract infections in children** 123  
Martin W. Weber and E. Kim Mulholland
11. **Measles** 135  
Hilton C. Whittle and Assan Jaye
12. **Pertussis** 145  
E. Kim Mulholland

## Section 3 – Infection: general principles

13. **The immune response to infection** 149  
Stephen Cose, Pontiano Kaleebu, Alison M. Elliott and Hilton C. Whittle
14. **Approach to the febrile patient** 169  
David Mabey and Christopher J. M. Whitty
15. **The control and prevention of infection** 176  
Andrew J. Hall

## Section 4 – Major common infections

16. **Malaria** 182  
Christopher J. M. Whitty and Evelyn K. Ansah
17. **HIV/AIDS** 195  
Alison D. Grant, Gisela Schneider, Gareth Tudor-Williams and Andrew Kambugu
18. **Tuberculosis** 232  
Anthony D. Harries, Rony Zachariah, Rhehab Chimzizi, Felix M. Salaniponi and Stephen D. Lawn
19. **Pneumonia in adults** 254  
J. Anthony G. Scott, Richard Adegbola and Stephen B. Gordon
20. **Meningitis** 266  
Brian M. Greenwood
21. **Sexually transmitted infections** 276  
Philippe Mayaud, Francis J. Ndowa, John Richens and David Mabey

## Section 5 – Bacterial infections

22. **Typhoid, paratyphoid and non-typhoid Salmonella infections** 308  
Nicholas Feasey and Melita Gordon
23. ***Streptococcus pyogenes* and *Staphylococcus aureus*** 316  
Stephen B. Gordon

## Contents

24. **Rickettsial infections** 322  
Oleg Mediannikov, Philippe Parola and Didier Raoult
25. **Brucellosis** 329  
Robin Bailey
26. **Leptospirosis** 332  
Robin Bailey
27. **Relapsing fever** 334  
Daniel Fekade and Eldryd Parry
28. **Plague** 338  
Christopher J. M. Whitty
29. **Anthrax** 341  
Gisela Schneider
30. **Tetanus** 345  
Charles R. Newton
31. **Diphtheria** 351  
Christopher J. M. Whitty
32. **Leprosy** 352  
Diana N. J. Lockwood, Saba M. Lambert and Stephen L. Walker
33. **Cholera** 363  
Melita Gordon and Nicholas Feasey

## Section 6 – Viral infections

34. **Viral haemorrhagic fevers: yellow fever, Lassa fever, Rift Valley fever, Ebola/Marburg fever and Crimean-Congo fever** 368  
Jan ter Meulen and Benjamin Jeffs
35. **Dengue** 376  
Jeremy Farrar and Amadou Alpha Sall
36. **Rabies** 380  
Mary J. Warrell and David A. Warrell
37. **Influenza** 388  
Christopher J. M. Whitty
38. **Poliomyelitis** 389  
R. Bruce Aylward, Sam Okiror and Deo Nshimirimana
39. **Varicella (chickenpox), herpes zoster and monkeypox** 394  
Andrew J. Hall
40. **Rubella** 396  
Philip Gothard
41. **Mumps** 398  
Philip Gothard

## Section 7 – Protozoal infections

42. **Leishmaniasis** 400  
Ed E. Zijlstra and Ahmed M. Musa
43. **Human African trypanosomiasis** 415  
August Stich
44. **Amoebiasis** 423  
Ed E. Zijlstra
45. **Intestinal protozoa** 429  
Paul Kelly and Isaac Zulu

## Section 8 – Helminth infections

46. **Intestinal helminths** 434  
Michael Brown, Donald A. P. Bundy and Simon Brooker
47. **Schistosomiasis** 441  
Anthony E. Butterworth, John H. Ouma, Birgitte J. Vennervald and David W. Dunne
48. **Lymphatic filariasis and loa loa** 453  
Camilla Rothe and Christopher J. M. Whitty
49. **Onchocerciasis** 456  
Michele E. Murdoch and Ian E. Murdoch
50. **Cysticercosis** 466  
Tom Doherty and Maria Vang Johansen
51. **Hydatid disease** 468  
Helen Ayles and Anna Checkley
52. **Paragonimiasis** 473  
Camilla Rothe
53. **Trichinellosis** 475  
Anna Checkley
54. **Guinea worm** 476  
Sandy Cairncross

## Section 9 – Fungal infections

55. **Fungal infections** 479  
Roderick J. Hay

## Section 10 – Non-communicable diseases 488

56. **Chronic and non-communicable disease in Africa**  
Eldryd Parry and Patrick T. Lee
57. **Chronic non-communicable disease in health care** 493  
Patrick T. Lee and Eldryd Parry

58. **Diabetes mellitus** 498  
Geoffrey Gill and Jean-Claude Mbanya
59. **Hypertension** 510  
Richard W. Walker and Richard Edwards
60. **Stroke** 524  
Myles Connor and Alan Bryer
61. **Epilepsy** 531  
Martin C. Prevett and Charles R. Newton
62. **Mental health** 543  
Oye Gureje and Bibilola Oladeji
63. **Asthma, chronic obstructive pulmonary disease (COPD) and exposure to indoor air pollution** 566  
Duncan G. Fullerton, Kevin Mortimer and Stephen B. Gordon
64. **The disabled patient** 578  
Chris Lavy
- Section 11 – Diseases of body systems**
65. **The heart** 584  
Janet Ajuluchukwu, Felix I. Anjorin, Juergen Freers and Eldryd Parry
66. **The lung** 617  
Martin J. Boeree
67. **Blood disorders** 640  
Imelda Bates and Edeghonghon Olayemi
68. **The gut** 656  
Paul Kelly and Edford Sinkala
69. **The liver** 671  
Nimzing Ladep and Edemariam Tsega
70. **The kidney and body fluids** 692  
Jacob Plange-Rhule, Gavin Dreyer and John Eastwood
71. **Bones and joints** 720  
Mohammed Tikly, Ade Adebajo and Paul E. McGill
72. **Endocrinology** 733  
Charles H. Todd, Kenneth Huddle and Geoffrey Gill
73. **The nervous system** 746  
Peter Newman, Peter Cleland and Richard W. Walker
74. **The skin** 779  
Bernard Naafs, John Masenga and Tjip S. van der Werf
75. **The eye** 811  
Allen Foster and Richard J. C. Bowman
- Section 12 – Cancer and palliative care**
76. **Cancers and lymphomas** 827  
Sam M. Mbulaiteye, John L. Ziegler and Edward Katongole-Mbidde
77. **Palliative care** 841  
Karen L. Frame and Anne Merriman
- Section 13 – Venoms and poisons**
78. **Venomous and other dangerous animals** 849  
David A. Warrell
79. **Poisoning** 867  
Sari Soghoian
- 
- Index* 875

## Contributors

### Ade Adebajo

Consultant Rheumatologist,  
Associate Director of Teaching, and Honorary Professor,  
Academic Rheumatology Group, University of Sheffield  
Medical School, Sheffield, UK

### Richard Adegbola

Senior Program Officer of Pneumonia Clinical Studies,  
The Bill and Melinda Gates Foundation

### Janet Ajuluchukwu

Consultant Cardiologist and Associate Professor of Medicine,  
College of Medicine, University of Lagos, Lagos, Nigeria

### Sam Akech,

Paediatrician, KEMRI-Wellcome Trust Research Programme,  
Kilifi, Kenya; Nuffield Department of Clinical Medicine,  
University of Oxford, Oxford, UK

### Felix I. Anjorin

Consultant Physician and Cardiologist,  
and Vice-Chancellor, Bingham University, New Karu,  
Nassawara State, Nigeria

### Evelyn K. Ansah

Clinical Research Department, London School of Hygiene  
and Tropical Medicine, London, UK and Deputy Director,  
Research and Development Division, Ghana Health Service,  
Accra, Ghana

### Helen Ayles

Senior Lecturer, Clinical Research Department,  
London School of Hygiene and Tropical Medicine;  
Director of Research, Zambart Project, Lusaka, Zambia

### R. Bruce Aylward

Director, Global Polio Eradication Initiative,  
The World Health Organization, Geneva, Switzerland

### Robin Bailey

Professor of Tropical Medicine, London School of Hygiene  
and Tropical Medicine and Consultant in Infectious and  
Tropical Diseases, Hospital for Tropical Diseases,  
London, UK

### Imelda Bates

Professor of Clinical Tropical Haematology,  
Liverpool School of Tropical Medicine, Liverpool, UK

### James A. Berkley

Consultant in Paediatric Immunology and Infectious Diseases,  
KEMRI-Wellcome Trust Research Programme, Kilifi,  
Kenya, and Nuffield Department of Clinical Medicine,  
University of Oxford, UK

### Martin J. Boeree

Associate Professor and Consultant Respiratory Physician,  
Department of Respiratory Diseases, Radboud University  
Nijmegen Medical Centre, Nijmegen, The Netherlands

### Richard J. C. Bowman

Consultant Ophthalmologist, Great Ormond Street Hospital,  
and Honorary Senior Lecturer, London School of Hygiene and  
Tropical Medicine, London, UK

### Simon Brooker

Professor of Epidemiology and Disease Control,  
London School of Hygiene and Tropical Medicine,  
London, UK

### Michael Brown

Senior Lecturer and Consultant Physician,  
Clinical Research Department, London School of Hygiene  
and Tropical Medicine, and Hospital for Tropical Diseases,  
London, UK

### Ruari Brugha

Department of Epidemiology and Public Health Medicine,  
Population Health Sciences, Royal College of Surgeons in  
Ireland, Dublin, Ireland

### Alan Bryer

Division of Neurology, Department of Medicine, Groote  
Schoor Hospital and University of Cape Town, South Africa

### Camilla Buchanan

Staff Obstetrician-gynecologist, Riverside Medical Group;  
Adjunct Faculty, College of William and Mary,  
Williamsburg, VA, USA



## List of contributors

**Donald A. P. Bundy**

Lead Specialist, Health, Nutrition and Population in the African Region, The World Bank

**Anthony E. Butterworth**

Honorary Professor, College of Medicine, University of Malawi, Malawi and London School of Hygiene and Tropical Medicine, London, UK

**Sandy Cairncross**

Professor of Environmental Health, London School of Hygiene and Tropical Medicine, London, UK

**Anna Checkley**

Clinical Lecturer, Clinical Research Department, London School of Hygiene and Tropical Medicine, London, UK

**Rhehab Chimzizi**

Management Sciences for Health, Accra, Ghana

**Peter Cleland**

Consultant Neurologist, Sunderland Royal Hospital and Newcastle General Hospital, Newcastle, UK

**Steve Collins**

Director, Valid International

**Myles Connor**

Consultant Neurologist, NHS Fife, UK; Senior Researcher, University of Witwatersrand, South Africa

**Stephen Cose**

Lecturer in Immunology, London School of Hygiene and Tropical Medicine, London, UK and MRC/UVRI Uganda Research Unit on AIDS, Entebbe, Uganda

**Gail Davey**

Reader in Global Health, Brighton and Sussex Medical School, Brighton, UK

**Tom Doherty**

Consultant Physician, Hospital for Tropical Diseases, London, UK

**Gavin Dreyer**

Lecturer in Medicine, College of Medicine, Blantyre, Malawi

**Benson Droti**

Medical Research Council Programme on AIDS, Uganda Virus Research Institute, Entebbe, Uganda

**David W. Dunne**

Professor of Parasitology, Department of Pathology, University of Cambridge, Cambridge, UK

**John Eastwood**

Emeritus Professor, Department of Renal Medicine and Transplantation, St. George's Hospital, London, UK

**Richard Edwards**

Professor, Department of Public Health, University of Otago, Wellington, New Zealand

**Alison M. Elliott**

Professor of Tropical Medicine, London School of Hygiene and Tropical Medicine, London, UK and Uganda Virus Research Institute, Uganda

**Jeremy Farrar**

Professor of Tropical Medicine, Hospital for Tropical Diseases, Oxford University Clinical Research Unit, Ho Chi Minh City, Vietnam

**Nicholas Feasey**

Research Training Fellow, Malawi–Liverpool–Wellcome Trust Clinical Research Programme and Department of Gastroenterology University of Liverpool, Liverpool, UK

**Daniel Fekade**

Associate Professor of Medicine, Department of Internal Medicine, Faculty of Medicine, Addis Ababa University, Addis Ababa, Ethiopia

**Allen Foster**

Professor of International Eye Health, London School of Hygiene and Tropical Medicine, London, UK

**Susan Foster**

Director of Public Policy and Education, Alliance for the Prudent use of Antibiotics, Tufts University, Boston, MA, USA

**Karen L. Frame**

Consultant in Palliative Medicine and Honorary Senior Clinical Lecturer, St. Mary's Hospital, Imperial College Healthcare NHS Trust, London, UK

**Juergen Freers**

Honorary Professor, Department of Medicine, Makerere University, Kampala, Uganda

**Duncan G. Fullerton**

Clinical Lecturer in Respiratory Medicine, Liverpool School of Tropical Medicine and Aintree University Hospital, Liverpool, UK

**Geoffrey Gill**

Professor of International Medicine, Liverpool School of Tropical Medicine, Liverpool, UK

## List of contributors

**Melita Gordon**

Senior Clinical Lecturer in Gastroenterology,  
University of Liverpool; Honorary Consultant  
Gastroenterologist, Royal Liverpool University Hospital,  
Liverpool, UK

**Stephen B. Gordon**

Professor of Respiratory Medicine, Liverpool School of  
Tropical Medicine, Liverpool, UK

**Philip Gothard**

Consultant Physician, Hospital for Tropical Diseases,  
London, UK

**Alison D. Grant**

Professor of International Health, Clinical Research  
Department, London School of Hygiene and Tropical  
Medicine, London, UK

**Sir Brian M. Greenwood**

Manson Professor of Clinical Tropical Medicine,  
Faculty of Infectious and Tropical Diseases, London School of  
Hygiene and Tropical Medicine, London, UK

**Heiner Grosskurth**

Professor of Epidemiology and International Health, London  
School of Hygiene and Tropical Medicine, London, UK

**Oye Gureje**

Professor, Department of Psychiatry, University College  
Hospital, University of Ibadan, Ibadan, Nigeria

**Andrew J. Hall**

Professor of Epidemiology, London School of Hygiene and  
Tropical Medicine, London, UK

**Anthony D. Harries**

International Union Against Tuberculosis and Lung Disease,  
Paris, France; Department of Infectious and Tropical Diseases,  
London School of Hygiene and Tropical Medicine,  
London, UK

**Roderick J. Hay**

Professor of Cutaneous Infection, King's College, London, UK

**Timothy D. Healing**

Course Director, Course in Conflict & Catastrophe Medicine,  
Worshipful Society of Apothecaries of London, UK

**Kenneth Huddle**

Professor of Medicine, University of Witwatersrand,  
Chris Hani Baragwanath Academic Hospital, Soweto,  
South Africa

**Assan Jaye**

Immunologist and Head of Viral Diseases Programme,  
Medical Research Council Laboratories (MRC),  
Fajara, Banjul, The Gambia

**Benjamin Jeffs**

Médecins sans Frontières, Spain

**Maria Vang Johansen**

Professor, Department of Disease Biology, Faculty of Life  
Sciences, University of Copenhagen, Denmark

**Pontiano Kaleebu**

Director, MRC/UVRI Uganda Research Unit on AIDS,  
Entebbe, Uganda

**Andrew Kambugu**

Head of Department, Prevention, Care and Treatment  
Programme, Infectious Diseases Institute, Makerere  
University College of Health Sciences, Makerere, Uganda

**Edward Katongole-Mbidde**

Director, Uganda Virus Research Institute, Entebbe,  
Uganda

**Paul Kelly**

Reader in Tropical Gastroenterology, Centre for Digestive  
Diseases, Barts and the London School of Medicine and  
Dentistry, London, UK; Honorary Lecturer,  
University of Zambia, Zambia

**Nimzing Ladep**

Clinical Research Fellow, Imperial College London,  
London, UK

**Saba M. Lambert**

Clinical Research Department, London School of Hygiene and  
Tropical Medicine, London, UK

**Chris Lavy**

Visiting Professor and Honorary Consultant, Nuffield  
Department of Orthopaedics, Rheumatology and  
Musculoskeletal Sciences, University of Oxford,  
Oxford, UK

**Stephen D. Lawn**

Reader in Infectious Diseases, Department of Infectious and  
Tropical Diseases, London School of Hygiene and Tropical  
Medicine, London UK; Desmond Tutu HIV Centre, Institute  
for Infectious Disease and Molecular Medicine, Faculty of  
Health Sciences, University of Cape Town, Cape Town, South  
Africa

**Patrick T. Lee**

Director and co-founder, Global Primary Care Program,  
Massachusetts General Hospital and Clinical Instructor  
in Medicine, Harvard Medical School, Boston,  
MA, USA

**Diana N. J. Lockwood**

Professor of Tropical Medicine, Clinical Research Department  
London School of Hygiene and Tropical Medicine, London,  
UK

## List of contributors

**Paul E. McGill**

Consultant Rheumatologist, Stobhill Hospital,  
Glasgow, Scotland

**David Mabey**

Professor of Communicable Disease, Clinical Research  
Department London School of Hygiene and Tropical  
Medicine, London, UK

**John Masenga**

Professor, Tumaini University, and Principal, Regional  
Dermatology Training Centre, Moshi, Tanzania

**Philippe Mayaud**

Professor of Infectious Diseases and Reproductive Health,  
Clinical Research Department London School of Hygiene  
and Tropical Medicine, London, UK

**Jean-Claude Mbanya**

Professor of Medicine and Endocrinology, Faculty of Medicine  
and Biomedical Sciences, University of Yaounde I, Yaounde,  
Cameroon

**Sam M. Mbulaiteye**

Principal Investigator, National Cancer Institute,  
National Institutes of Health, Department of Health and  
Human Services, Rockville, MD, USA

**Oleg Mediannikov**

Unité de Recherche en Maladies Infectieuses et Tropicales  
Emergentes (URMITE), WHO coll. Centre for Rickettsioses  
and other Arthropod-borne bacterial diseases, Université de la  
Méditerranée, Faculté de Médecine, Marseille, France

**Anne Merriman**

Director of Policy and International Programmes, Hospice  
Africa Uganda, Kampala, Uganda

**Jan ter Meulen**

Scientific Researcher, Howard Hughes Medical Institute,  
Chevy Chase, MD, USA

**Kevin Mortimer**

Senior Lecturer and Honorary Consultant in Respiratory  
Medicine, Liverpool School of Tropical Medicine and Aintree  
University Hospital, Liverpool, UK

**E. Kim Mulholland**

Professor of Child Health and Vaccinology, London School of  
Hygiene and Tropical Medicine, London, UK;  
Professor, Menzies School of Health Research,  
Darwin, Australia; Professor, Murdoch Children's Research  
Institute, Melbourne, Australia

**Ian E. Murdoch**

Senior Lecturer and Consultant Ophthalmologist,  
University College London and Moorfields Eye Hospital,  
London, UK

**Michele E. Murdoch**

Consultant Dermatologist, West Herts. Hospitals NHS Trust,  
Watford, Herts., UK

**Ahmed M. Musa**

Institute of Endemic Diseases, University of Khartoum, Sudan

**Bernard Naafs**

Consultant Dermatovenereologist, Regional Dermatology  
Training Centre, Moshi, Tanzania; and Stichting Tropen-  
dermatologie, Munnekeburen, The Netherlands

**Francis J. Ndowa**

Co-ordinator, Medical Officer, Department of Reproductive  
Health and Research, World Health Organization, Geneva,  
Switzerland

**Peter Newman**

Consultant Neurologist, The James Cook University Teaching  
Hospital, Middlesbrough, UK

**Charles R. Newton**

Professor of Tropical Neurosciences and Paediatrics,  
Kenya Medical Research Programme,  
Kilifi, Kenya; Muhumbili-Wellcome Programme,  
Dar es Salaam, Tanzania; and Department of Psychiatry,  
University of Oxford, Oxford, UK

**Deo Nshimirimana**

Programme Manager, Immunization and Vaccine  
Development, World Health Organization Regional  
Office for Africa

**Chidi Nweneka**

MRC Keneba, The Gambia

**Sam Okiror**

Medical Officer/Polio, WHO/AFRO

**Peter Olute Okoth**

Disease Prevention and Control Officer, Ministry of Public  
Health and Sanitation, Nyanza Province, Kenya

**Bibilola Oladeji**

Lecturer, Department of Psychiatry, University College  
Hospital, University of Ibadan, Ibadan, Nigeria

**Edeghonghon Olayemi**

Consultant Haematologist and Senior Lecturer, Department of  
Haematology, University of Ghana Medical School, Ghana

**John H. Ouma**

Part-time Professor, Jomo-Kenyatta Institute of Agriculture  
and Technology, Nairobi, Kenya

**Ayo Palmer**

Director, Centre for Innovation Against Malaria,  
The Gambia

## List of contributors

**Philippe Parola**

Unité de Recherche en Maladies Infectieuses et Tropicales Emergentes (URMITE), WHO coll. Centre for Rickettsioses and other Arthropod-borne bacterial diseases, Université de la Méditerranée, Faculté de Médecine, Marseille, France

**Sir Eldryd Parry**

Founder, Tropical Health Education Trust (THET), London, UK and Honorary Professor, Department of Clinical Research, London School of Hygiene and Tropical Medicine, London, UK

**Michael D. E. Pelly**

Acute Medicine Consultant, Chelsea and Westminster Hospital, London; Senior Lecturer, Imperial College London, London, UK

**Jacob Plange-Rhule**

Consultant Physician, Department of Medicine, Komfo Anokye Teaching Hospital, Kumasi, Ghana

**Andrew Prentice**

Professor of International Nutrition, MRC International Nutrition Group, London School of Hygiene and Tropical Medicine, London, UK

**Martin C. Preveit**

Consultant Neurologist, Southampton University Hospitals NHS Trust, Southampton, UK

**Didier Raoult**

Unité de Recherche en Maladies Infectieuses et Tropicales Emergentes (URMITE), WHO coll. Centre for Rickettsioses and other Arthropod-borne bacterial diseases, Université de la Méditerranée, Faculté de Médecine, Marseille, France

**John Richens**

Clinical Lecturer, Centre for Sexual Health and HIV Research, University College London, UK

**Camilla Rothe**

Clinical Lecturer, College of Medicine, Blantyre, Malawi

**Felix M. Salaniponi**

KNCV Kenya Office, Nairobi, Kenya

**Amadou Alpha Sall**

Director, WHO Collaborating Centre for Arboviruses and Viral Haemorrhagic Fevers, Institut Pasteur de Dakar, Senegal

**Gisela Schneider**

Director, German Institute for Medical Mission, Tübingen, Germany

**J. Anthony G. Scott**

KEMRI Wellcome Trust Programme, Centre for Geographic Medicine Research-Coast, Kilifi, Kenya and Nuffield Department of Clinical Medicine, University of Oxford, John Radcliffe Hospital, Oxford, UK

**Edford Sinkala**

Tropical Gastroenterology and Nutrition Group, University of Zambia School of Medicine, Lusaka, Zambia

**Sari Soghoian**

Clinical Assistant Professor of Emergency Medicine, New York University and Bellevue Hospital Center, New York, NY, USA

**August Stich**

Professor of Tropical Medicine, The Medical Mission Institute, Würzburg, Germany

**Giorgio Tamburlini**

Director, European School for Maternal Newborn and Child Health; Senior Research Consultant, Institute for Maternal and Child Health Burlo Garofolo, Trieste, Italy

**Mohammed Tikly**

Professor of Rheumatology, University of the Witwatersrand, Johannesburg, South Africa

**Charles H. Todd**

General Practitioner, Westongrove Partnership, Aylesbury, Buckinghamshire, UK

**Edemariam Tsega**

Emeritus Professor of Internal Medicine, Department of Medicine, McMaster University School of Medicine, Hamilton, ON, Canada

**Gareth Tudor-Williams**

Reader in Paediatric Infectious Diseases, Imperial College, London, UK

**Fabio Uxa**

Consultant in Neonatology, Institute for Maternal and Child Health Burlo Garofolo, Trieste, Italy

**Tjip S. van der Werf**

Professor of Medicine, Infectious Diseases and Tuberculosis Service, Groningen University Medical Centre, Groningen, The Netherlands

**Birgitte J. Vennervald**

Senior Scientist, DBL-Centre for Health Research and Development, Section for Parasitology, Health and Development, Department of Veterinary Disease Biology, Faculty of Life Sciences, University of Copenhagen, Denmark

## List of contributors

**Richard W. Walker**

Consultant Physician and Honorary Professor of Ageing and International Health, Northumbria Healthcare NHS Foundation Trust and Institute of Health and Society, Newcastle University, UK

**Stephen L. Walker**

Clinical Research Fellow, Department of Infections and Tropical Disease, London School of Hygiene and Tropical Medicine, London, UK

**David A. Warrell**

Emeritus Professor of Tropical Medicine, Nuffield Department of Clinical Medicine, University of Oxford, John Radcliffe Hospital, Oxford, UK

**Mary J. Warrell**

Oxford Vaccine Group, Centre for Clinical Vaccinology and Tropical Medicine, Churchill Hospital, University of Oxford, Oxford, UK

**Martin W. Weber**

Team Leader, Maternal and Child Health, World Health Organization, Jakarta, Indonesia

**Hilton C. Whittle**

Visiting Professor, London School of Hygiene and Tropical Medicine, London, UK

**Christopher J. M. Whitty**

Professor of International Health, Clinical Research Department, London School of Hygiene and Tropical Medicine, London, UK

**Amha Achamyew Yigzaw**

Head, Department of Obstetrics and Gynaecology, Sodo General Hospital, Wolaita Sodo, Ethiopia

**Rony Zachariah**

Médecins sans Frontières, Medical Department, Operational Research Unit, Brussels Operational Center, Luxembourg

**John L. Ziegler**

Director, Global Health Sciences Graduate Program, University of California San Francisco, CA, USA

**Ed E. Zijlstra**

Institute of Endemic Diseases, University of Khartoum, Sudan, and Rotterdam Centre for Tropical Diseases

**Isaac Zulu**

Faculty Member in Epidemiology, Department of Medicine, University Teaching Hospital, Lusaka, Zambia

Cambridge University Press

978-1-107-00251-7 - Principles of Medicine in Africa, Fourth Edition

Edited by David Mabey, Geoffrey Gill, Sir Eldryd Parry, Martin W. Weber and Christopher J. M. Whitty

Frontmatter

[More information](#)

## Foreword

*Principles of Medicine in Africa* is the only medical textbook designed specifically for doctors and medical students working in sub-Saharan Africa. It is written by authors with many years' experience of clinical work in a variety of African countries, and provides a wealth of up-to-date information on the epidemiology, pathogenesis, clinical features, management and prevention of all the important diseases found on the continent. Unlike most medical textbooks, it puts disease and its prevention in the context of society and culture, and is not afraid to address the effects of poverty and inequality on health, as well as the practical issues of how to provide excellent clinical care where resources are limited.

Each disease-specific chapter starts by setting the disease in the context of what is known in Africa, contains highlighted key practice

points, and ends with a discussion of unresolved questions needing further research. In addition to covering the classical tropical infectious diseases, the fourth edition contains a comprehensive and up-to-date chapter on HIV/AIDS, major sections on childhood illnesses and non-communicable diseases, and a new and comprehensive chapter on mental health. In Ethiopia, the Task Force for Medical Education has recommended that this new fourth edition should be made available in all medical schools; I believe every medical student and doctor in Africa should have access to it.

*Dr. Tedros Adhanom Ghebreyesus,  
Minister of Health,  
Federal Democratic Republic of Ethiopia*