# Neurology in Africa

### CLINICAL SKILLS

**AND** 

Neurological Disorders

# WILLIAM HOWLETT

FRCPI, PhD, Neurologist

2012





#### **ACKNOWLEDGEMENTS**

This book would not have been possible without the help and support of many persons. I am grateful to the many colleagues and friends who have read individual chapters or contributed in any way. These include the following: Mohamed Alwani, John Bartlett, Mike van Beer, Atta Bhatti, Jim Bower, Sam Chong, Glen Crawford, Katia Cikurel, John Crump, Mervyn Dean, Shane Delamont, Tom Doherty, Cathy Ellis, John Eyers, Lars Fadness, Andrew Graham, Henning Grossman, Anthony Hall, Emma Hall, Ben Hamel, Sven Hinderaker, Patrick Howlett, Richard Hughes, Ewan Hunter, Joe Jarvis, Peter Kennedy, Gunnar Kvale, Gabriel Lende, Sean McDermott, Bridget MacDonald, Segni Mekonnen, Odd Morkve, Michael Murati, Ben Naafs, Lina Nashef, Peter Newman, Nikil Rajani, Leone Ridsdale, Tord Ro, Faheem Sheriff, Eli Silber, Ove Stoknes, Jim Todd, Susan Tyzack, Sarah Urasa, Sandeep Velichetii, Richard Walker, Felicity Werrett and Andrea Winkler. I am particularly indebted to the many medical students who have made helpful suggestions. While it is not possible to thank everyone individually I am very appreciative of their contributions.

The photographs used to illustrate the book are from patients attending Kilimanjaro Christian Medical Centre (KCMC) with selected epilepsy images from patients in Hai district. Permission to use photographs for teaching was explicit: where this has not been given, or uncertain, the individual's eyes have been "blanked out". I wish to thank all of them most sincerely. The radiology images are provided by Prof Helmut Diefenthal, Radiology Dept., KCMC. These were carefully collected by him over many years and generously donated for use in the book and I would like to thank him especially. Selected CT & MRI images were kindly provided by the Aga Khan Hospital, Dar es Salaam. The excellent pathological illustrations are provided by Prof Sebastian Lucas, St Thomas Hospital, London and I am particularly indebted to him. My special thanks go to colleagues and staff at KCMC for their continuing support and encouragement. In particular I would like to thank Prof Moshi Ntabaye, Executive Director, Prof Raimos Olomi, Director of Hospital Services, Dr Venance Maro, Head of Internal Medicine, Prof John Shao and Dr Mark Swai.

The writing and publication of this book has been achieved through a long lasting collaboration with the Centre for International Health (CIH) at the University of Bergen (UiB), Norway. I would especially like to thank Prof Rune Nilsen, director of CIH, Prof Gunnar Kvale and friends there for their support. The excellent drawings are by Ellinor Moldeklev Hoff, Department of Photos and Drawings, UiB. I remain especially indebted to her and would like to thank her particularly for this very important contribution. The layout, editing and publishing is by Christian Bakke, Division of Communication at UiB. I am very grateful for his patience, tolerance and professional guidance. The cover design and layout is by Tor Vegard Tobiassen. The scientific editor is Daniel Gibbs, Department of Neurology, Oregon Health and Science University, Portland, Oregon, who works and teaches at KCMC during annual visits there. I am very grateful to him for providing the necessary experience and knowledge to enable me to complete the book.

This book would not have been possible without the practical and financial support of many people for my work in Africa. I am particularly indebted to Dermot Desmond and to the following; The Department of Foreign Affairs, Dublin; Kevin & Bridget O'Doherty; Rory O'Hanlon; David & Stella Gorrod and Stephen Howlett. Finally I would like to thank my family and friends for their loyal support over the years.

WILLIAM HOWLETT Neurology in Africa III

Kilimanjaro Christian Medical Centre, Moshi, Kilimanjaro, Tanzania



University of Bergen PO Box 7800 NO-5020 Bergen Norway

#### NEUROLOGY IN AFRICA

William Howlett

Illustrations: Ellinor Moldeklev Hoff, Department of Photos and Drawings, UiB

Cover: Tor Vegard Tobiassen

Layout: Christian Bakke, Division of Communication, University of Bergen

Printed by Bodoni, Bergen, Norway

Copyright © 2012 William Howlett

NEUROLOGY IN AFRICA is freely available to download at www.uib.no/cih/en/resources/neurology-in-africa

ISBN 978-82-7453-085-0

#### Notice/Disclaimer

This publication is intended to give accurate information with regard to the subject matter covered. However medical knowledge is constantly changing and information may alter. It is the responsibility of the practitioner to determine the best treatment for the patient and readers are therefore obliged to check and verify information contained within the book. This recommendation is most important with regard to drugs used, their dose, route and duration of administration, indications and contraindications and side effects. The author and the publisher waive any and all liability for damages, injury or death to persons or property incurred, directly or indirectly by this publication.

#### **PREFACE**

The main reason for writing this book is that I have spent many rewarding years working as a physician and neurologist in Africa and would like to pass on some of that experience and knowledge to students there. Neurological disorders are common in Africa and the burden there has increased significantly because of the HIV epidemic and the emerging epidemic of non-communicable diseases. Students often find neurology a difficult subject to approach and there is a need for an easily accessible guide to neurology teaching and education in Africa.

The aim of this book is for students to gain an understanding of neurology, learn the necessary clinical skills and obtain sufficient knowledge to care for patients presenting with neurological disorders. Diagnosis in neurology is based on accurate history and physical examination and this book emphasizes these principles. It is written mostly from the perspective of a general physician practising neurology rather than that of a neurologist.

The book has two sections, the first on clinical skills, with medical students in wards and clinics as its main target group and the second on neurological disorders in adults with students and doctors as its main target group. The order of chapters is based on their importance in Africa, with the most common disorders there; epilepsy, stroke, infections, coma, paraplegia and neuropathies covered in the earlier chapters. The book includes chapters on head and spinal injury and care in neurology, because of their increasing significance within Africa. The choice of content included in each chapter is guided by the experience of the author. It is therefore subjective, selective and restricted by the size of the book. I have earnestly tried to avoid repetition; however in the attempt to make each chapter self-contained some repetition was unavoidable. I have included key points summarizing each section, which I hope will assist students with review. There is also a summary list of useful medical and neurological websites at the end of the book.

The term Africa is used throughout as a handy designation to mean sub-Saharan Africa. The lists of references at the end of each chapter are intended as a general guide to reading about neurology in Africa. For further information I refer the reader to a major neurology textbook.

In writing Neurology in Africa I have borrowed ideas and concepts from a wide range of excellent textbooks of neurology and tropical medicine and I am deeply indebted to their authors. I apologize in advance for any weaknesses and omissions and welcome comments and criticisms. I am reminded daily by students that the Internet is the new medium for education. With that in mind the book is available free online at <a href="https://www.uib.no/cih/en/resources/neurology-in-africa">www.uib.no/cih/en/resources/neurology-in-africa</a>.

The gap between need and resources is well documented in Africa and it is my experience that neurology is no different. It is my sincere hope that students and doctors in Africa will find this book a useful step towards filling that gap in neurology.

WILLIAM HOWLETT NEUROLOGY IN AFRICA V

## **CONTENTS**

ACKNOWLEDGMENTS		III
PREFACE		V
1	HISTORY AND EXAMINATION	9
2	LOCALIZATION	43
3	PUBLIC HEALTH	63
4	EPILEPSY	75
5	STROKE	97
6	NEUROLOGICAL INFECTIONS	119
7	PROTOZOAL ANDHELMINTHIC INFECTIONS	157
8	NEUROLOGICAL ILLNESS IN HIV DISEASE	187
9	COMA AND TRANSIENT LOSS OF CONSCIOUSNESS	209
10	PARAPLEGIA NON TRAUMATIC	227
11	DISORDERS OF PERIPHERAL NERVES	255
12	CRANIAL NERVE DISORDERS	283
13	MYOPATHIES AND MYASTHENIA GRAVIS	307
14	MOVEMENT DISORDERS AND MOTOR NEURONE DISEASE	325
15	HEADACHE AND FACIAL PAIN	347
16	INTRACRANIAL TUMOURS	363
17	DEMENTIA	381
18	INHERITED NEUROLOGICAL DISORDERS	395
19	HEAD AND SPINAL INJURY	409
20	CARE IN NEUROLOGY	427
INDEX		443
ABBREVIATIONS		455
USEFUL WEBSITES		459

WILLIAM HOWLETT NEUROLOGY IN AFRICA VII