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WHO
MODEL
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Pharmaceuticals can constitute up to 40 per cent of the health care budget in a developing country, yet large proportions of the population often lack access to even the most essential medicines. Because of its considerable impact on the quality of care and the cost of treatment, the selection of essential medicines is one of the most cost-effective approaches to improving access to health care in both developed and developing countries.

To support countries in this selection process WHO regularly issues its Model List of Essential Drugs. This list contains some 300 medicines carefully chosen to contribute to more rational prescribing, lower costs, and improved medicines supply. It has proven a valued resource over many years, and has been widely adopted and adapted in over 150 countries. The WHO Model Formulary aims to build on this resource by presenting authoritative and comprehensive information on all medicines on the WHO Model List. Each section starts with a brief comparative overview of various therapeutic alternatives. For each medicine information on use, dosage, adverse effects, contraindications and warnings is supplied.

The WHO Model Formulary is an invaluable and unbiased resource for countries wishing to develop their own national formularies. It will also be useful to those developing hospital formularies, and to individual prescribers and students interested in medicines that are globally recognized as essential.

Electronic versions of the WHO Model Formulary, intended as a starting point for national or institutional formularies, are available on request from the World Health Organization, Department of Essential Drugs and Medicines Policy, 1211 Geneva.

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Selected WHO publications and documents of related interest

The use of essential drugs. Ninth report of the WHO Expert Committee (including the Revised Model List of Essential Drugs). Technical report series No.895.
2000 (61 pages)

**WHO model prescribing information:
drugs used in skin diseases**
1997 (126 pages)

**WHO model prescribing information:
drugs used in bacterial infections**
2001 (126 pages)

Guide to good prescribing. A practical manual
1995 (108 pages)
(A Teachers Guide is also available
direct from the WHO Department of
Essential Drugs and Medicines Policy)

**How to develop and implement a national
drug policy.** Second edition
2001 (83 pages)

Further information on these and other WHO publications and priced documents can be obtained from: Marketing and Dissemination, World Health Organization, 1211 Geneva 27, Switzerland. Tel: +41 22 791 24 76, fax: +41 22 791 48 57, e-mail for orders: bookorders@who.int

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Abbreviations

ACE	angiotensin-converting enzyme
ADR	adverse drug reaction
AIDS	acquired immunodeficiency syndrome
AV	atrioventricular
BP	British Pharmacopoeia
CNS	central nervous system
CSF	cerebrospinal fluid
DMARD	disease-modifying antirheumatic drug
ECG	electrocardiogram
EEG	electro-encephalogram
G6PD	glucose 6-phosphate dehydrogenase
GFR	glomerular filtration rate
HIV	human immunodeficiency virus
HRT	hormone replacement therapy
INR	international normalized ratio
MDI	metered dose inhaler
NSAID	nonsteroidal anti-inflammatory drug
spp.	species
SSRI	selective serotonin reuptake inhibitor
USP	United States Pharmacopoeia
WHO	World Health Organization

Introduction

In 1995 the WHO Expert Committee on the Use of Essential Drugs recommended development of a WHO Model Formulary which would complement the WHO Model List of Essential Drugs (the 'Model List') and that would be updated every two years. It was considered that such a Model Formulary would be a useful resource for countries wishing to develop their own national formulary.

After a first consultation in April 1996 work was started to draft sections of the text according to the therapeutic categories in the Model List. A second consultation was held in Helsinki in September 1997, at which several draft sections of the text were discussed. At a third consultation in October 1999 the full text was reviewed.

In November 1999 the Expert Committee on the Use of Essential Drugs reviewed progress in the project. It recommended that WHO accept an offer by the Royal Pharmaceutical Society of Great Britain (which, together with the British Medical Association, publishes the British National Formulary) to take responsibility for final data validation, editing and layout. Agreement to this effect was reached in early 2000.

During the validation process all statements in the draft text were compared with the original references and checked for consistency with other WHO documents and recommendations and reputable drug information sources. A full record of this validation and all ensuing technical and editorial changes to the draft text, with the underlying reasons and the relevant references, is available. As this was the first edition of a new reference text this work took almost two years and was completed by the end of 2001. During this process when necessary the text was updated to take into account new information that had become available since the time of writing. Monographs were included for the small number of essential drugs that had been added to the Model List in November 1999.

Although the initial plan was to maintain in the Model Formulary the section headings and numbering system of the Model List, this proved difficult in practice. The main reason was that the sections of the Model List are not always useful as therapeutic categories, and do not easily lend themselves to introductory evaluative statements. Small changes were therefore introduced. The Model Formulary has also been relatively generous in repeating the formulary text of essential drugs under other relevant therapeutic categories.

The lack of full concurrence with the numbering system of the Model List should not be a major problem for users. They will be able to access information readily either through the content list or through the main index which includes both drug names and disease terms. Dissemination of the Model List and the

Model Formulary will focus on electronic access through CD-ROMs and the WHO Medicines web site; the Model Formulary will be linked to the Model List.

The electronic version of the Model Formulary is also intended as a starting point for developing national or institutional formularies. Rather than having to start completely from the beginning, national or institutional formulary committees can adapt the text of the Model Formulary to their own needs by changing the text or aligning the formulary to their own list of essential drugs by adding or deleting entries.

Despite all efforts it is unavoidable that this first edition of the WHO Model Formulary may contain some omissions or errors. Every effort has been made to ensure that the information in the Model Formulary has international applicability, but inevitably there will be instances where the local management of conditions will be different to that advised here. All readers are encouraged to send their comments, corrections and suggestions to the Editor of the WHO Model Formulary, Department of Essential Drugs and Medicines Policy, World Health Organization, 1211 Geneva, Switzerland, fax 41-22-7914167.