



INDOOR RESIDUAL SPRAYING

AN OPERATIONAL MANUAL
FOR INDOOR RESIDUAL SPRAYING
(IRS) FOR MALARIA TRANSMISSION
CONTROL AND ELIMINATION

SECOND EDITION



**World Health
Organization**

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Contents

Acknowledgements	iv
Abbreviations	v
Chapter 1 Indoor residual spraying (IRS) policy and strategy	1
1.1 Introduction	3
1.2 Defining IRS	4
1.3 Objectives and outcomes of IRS	7
1.4 Selection of areas for IRS	8
1.5 When to use IRS	12
1.6 References and web links	13
Chapter 2 Management of an IRS programme	15
2.1 Introduction	17
2.2 Gathering baseline information	17
2.3 Selection of insecticides	23
2.4 IRS application equipment: hand-operated compression air sprayers	38
2.5 Organization and delivery of IRS campaigns	41
2.6 Information, education and communication; and community mobilization	56
2.7 Reporting on progress and performance	58
2.8 Review of annual operations	64
2.9 References and web links	65
Chapter 3 Conducting a house spray	67
3.1 Conducting a house spray	69
3.2 Spray equipment inventory and maintenance	79
3.3 Human safety and environmental protection	82
3.4 Spray application supervision	85
3.5 Important health and environmental safeguards necessary for IRS operations	86
3.6 References and web links	86
Useful resources and web links	87
Annex 1 IRS checklists and forms	93
A1.1 Example of sprayable surface record form for baseline estimation of insecticide quantification needs	95
A1.2 Example of house spray card	96
A1.3 Example of annual reporting on insecticides used for vector control	97
A1.4 Timeline for implementation of IRS	98
A1.5 Example of capital and operational budgets for an IRS campaign	100
A1.6 Code of conduct	101
A1.7 Examples of IRS operations organizational charts	103
A1.8 Example of daily reporting form for spray operators	105
A1.9 Example of daily/weekly reporting form for spray team leaders	106
A1.10 Example of monthly reporting form for district IRS coordinators	107
A1.11 Example of checklist for cleaning the sprayer in the field	108
A1.12 Example of checklist for maintenance of sprayers	109
A1.13 Example of spray team leader and IRS supervisor's checklist	110
A1.14 Example of IRS supervision inspection checklist	111

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The manual aims to fill the gap that currently exists in the availability of technical and practical information related to the current scaling up of IRS for malaria control and elimination. It brings together the knowledge of a number of senior contributors with decades of fieldwork behind them, and supplements this with peer reviews from an extensive list of distinguished contributors and collaborators. Though comprehensive, this manual is not intended to replace field expertise in IRS. It has been created to enhance existing knowledge and skills, and to assist malaria programme managers, entomologists, and vector-control and public health officers to design, implement and sustain high-quality IRS programmes.

This second edition incorporates an IRS supervision inspection checklist for environmental and human toxicology compliance, an updated list of WHO recommended products for IRS and the requirements for control flow valve (CFV) equipment. The manual emphasizes the importance of using equipment which complies with WHO specifications, in particular the use of the correct nozzle and CFV on compression sprayers, and provides guidance on specific spraying challenges, such as how to spray houses that do not have an internal ceiling, but a high roof. The manual has been updated to ensure that all technical content is aligned with current WHO technical recommendation, also information on specification for soak pits and evaporation tanks, in addition, important health and environmental safeguards have been included. The document was finalized with support from the WHO Collaborating Centre for the Testing of Insecticide Application Equipment, International Pesticide Application Research Centre (IPARC), Imperial College, UK.

Abbreviations

a.i.	Active ingredient
ACT	Artemisinin-based combination therapy
API	Annual parasite incidence
CDC	Centers for Disease Control and Prevention
CFV	Control flow valve
CS	Capsulated suspension
EC	Emulsifiable concentrate
EIR	Entomological inoculation rate
DDT	Dichlorodiphenyltrichloroethane
DHS	Demographic health survey
FAO	Food and Agriculture Organization of the United Nations
GIS	Geographic information system
GMAP	Global Malaria Action Plan
GMP	Global Malaria Programme
GPIRM	Global Plan for Insecticide Resistance Management in malaria vectors
GPS	Global positioning system
GR	Geographical reconnaissance
IEC	Information, education and communication
IRS	Indoor residual spraying
ITN	Insecticide-treated mosquito net
IVM	Integrated vector management
LLIN	Long-lasting insecticidal net
LSM	Larval source management
m ²	Square metre of surface
MDG	Millennium Development Goal
MSDS	Material Safety Data Sheets
NGO	Nongovernmental organization
PC	Personal computer
PDA	Personal digital assistant
POA	Plan of action
PP	Parasite prevalence
PPE	Personal protective equipment
RBM	Roll Back Malaria Partnership
SC	Suspension concentrates
SC-PE	Polymer-enhanced suspension concentrate
UNEP	United Nations Environment Programme
US	United States
WG	Water-dispersible granules
WHO	World Health Organization
WHOPES	WHO Pesticide Evaluation Scheme
WP	Wettable powder

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