Global Strategic Framework for Integrated Vector Management

World Health Organization

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Preface

Malaria and other vector-borne diseases are major contributors to the total global burden of disease and a significant impediment to socioeconomic development in resource-poor countries. Although vector control has a proven record of saving lives by preventing, reducing or eliminating transmission, its benefits are far from being fully realized.

The Global Strategic Framework for Integrated Vector Management (IVM) provides a basis for strengthening vector control in a manner that is compatible with national health systems. Through evidence-based decision-making, IVM rationalizes the use of human and financial resources and organizational structures for the control of vector-borne disease and emphasizes the engagement of communities to ensure sustainability. It encourages a multi-disease control approach, integration with other disease control measures and the considered and systematic application of a range of interventions, often in combination and synergistically.

A guiding principle is that effective control is not the sole preserve of the health sector but requires collaboration with various other sectors together with public and private agencies and institutions. Implementation of this strategy will require effective public health regulation and legislation, allied to a strong commitment and concerted action by the World Health Organization, working in coordination with the Food and Agriculture Organization of the United Nations, the United Nations Environment Programme, other United Nations agencies and donors, and Member States.

1. Purpose

The Global Strategic Framework on Integrated Vector Management (IVM) sets out new and broad principles and approaches to vector control that are applicable to all vector-borne diseases. Integrated vector management seeks to improve the efficacy, cost-effectiveness, ecological soundness and sustainability of disease vector control. This Framework is intended to provide orientation to policy-makers within WHO and Member States on the development and implementation of IVM, and to strengthen collaboration with donors and other United Nations agencies, notably the Food and Agriculture Organization of the United Nations (FAO) and the United Nations Environment Programme (UNEP).

2. Why a Global Strategic Framework?

In its 2001 report, the Commission on Macroeconomics and Health[1] documented the enormous benefits for health and socioeconomic development that flow from effective control of vector-borne diseases. It recognized that the fight against disease requires not only financial resources, appropriate technology and political commitment, but also a strategy, operational lines of responsibility and adaptive management systems, able to learn from and correct mistakes. IVM seeks to apply such principles to the control of vectors of disease.

Vector-borne diseases are responsible for a significant fraction of the global disease burden and have profound effects not only on health but also on the socioeconomic development of affected nations. Thus, an econometric model for malaria — which is responsible for more than 1 million deaths every year — suggests that countries with intensive malaria have income levels only 33% of those without malaria.

Vector control has a proven record in the prevention and control of vector-borne disease. The distribution and incidence of

[1] Commission on Macroeconomics and Health. *Macroeconomics and health: investing in health for economic development*. Geneva, World Health Organization, 2001.

vector-borne disease are strongly determined by the ecological conditions that favour different species of disease vector. Knowledge and understanding of these characteristics provide a unique opportunity to prevent and control such diseases, by reducing vector–human contact and vector population density and survival.

IVM is based on the premise that effective control is not the sole preserve of the health sector but requires the collaboration of various public and private agencies and community participation. The engagement of communities is a key factor in assuring sustainability. IVM entails the use of a range of interventions of proven efficacy, separately or in combination, in order to implement more cost-effective control and reduce reliance on any single intervention. This strategy also serves to extend the useful life of insecticides and drugs by reducing the selection pressure for resistance development.

IVM includes organization at the local level and the establishment of effective and broadly based local partnerships. At the other end of the scale, countries and donors should be encouraged to develop partnerships and operate within adaptive management systems. Major funding initiatives should include adequate provision for IVM to speed progress in the control of vector-borne disease.

The success of programmes such as the integrated control of malaria in the Zambian Copper Belt in the 1930s and 1940s, the current initiative against Chagas disease vectors in Latin America, and the West African Onchocerciasis Control Programme since the 1970s demonstrate that strategically sound, well-coordinated and sustained initiatives can bring enormous benefits in improved health and socioeconomic development. A key feature contributing to their success has been effective management based on the use of robust systems for monitoring, evaluation and reporting, and procedures for the rapid identification and correction of problems. The adoption of a strategy for IVM provides new opportunities for effective action against vector-borne disease, using the lessons learned from these and other successful initiatives.

For many vector-borne diseases there are no vaccines, and drug resistance — or the threat of resistance — is an increasing problem. In such circumstances vector control often plays a vital role. In some cases, and dengue is one example, effective vector control is the primary or even sole measure for preventing disease outbreaks.

Vector control programmes have relied heavily on the use of residual insecticides and the selective use of such compounds is likely to continue, as a part of IVM. For example, insecticide-treated nets are currently used in the control of malaria and other vector-borne diseases, with minimal impact on ecosystems and the environment. The Onchocerciasis Control Programme eliminated the disease from much of the programme area using various insecticides in rotation, and the Southern Cone Initiative for the control of Chagas disease in South America has relied primarily on spraying inside houses with residual insecticides to achieve its objectives of elimination. However, the environmental and health concerns over persistent organic pollutants identified in the Stockholm Convention, together with the increasing problem of insecticide resistance, emphasize the need for alternative strategies for sustainable vector control and management. Such considerations led to World Health Assembly resolution WHA 50.13, which called on Member States to support the development and adoption of viable alternative methods of controlling vector-borne diseases and thereby reduce reliance on insecticides. IVM provides a management framework within which such changes can be effected.