SECOND MEETING
OF THE
VECTOR CONTROL ADVISORY GROUP

GENEVA, SWITZERLAND
10–14 FEBRUARY 2014

World Health Organization

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INTRODUCTION

The second meeting of the World Health Organization (WHO) Vector Control Advisory Group (VCAG), an advisory group to WHO on new forms of vector control for malaria and other vector-borne diseases, was convened at WHO headquarters in Geneva, Switzerland on 10–14 February 2014. The objective of the meeting was to review the dossiers and target product profiles of nine potentially novel paradigms for public health vector control.

The meeting was opened by Dr Lorenzo Savioli, Director, Department of Control of Neglected Tropical Diseases (NTDs), who updated the group on the department's activities, notably its involvement in WHO World Health Day, which would highlight the importance of controlling transmission of vector-borne diseases to public health worldwide; staffing changes, including the appointment of Dr Dirk Engels as the new director of NTD upon Dr Savioli's retirement; capacity strengthening for Vector Ecology and Management (VEM) and the Global Malaria Programme (GMP) through new staff and consultancies; and recent funding to the VEM Dengue Programme from the Bill & Melinda Gates Foundation aimed at identifying the true global burden of dengue infection. Dr Savioli recalled the important work of WHOPES and the challenge of optimizing use of its structure for vector-borne disease control. He concluded by reminding the VCAG of the importance of confidentiality during proceedings and thanked the group for its work.

Dr Raman Velayudhan, Coordinator, NTD/VEM, outlined administrative arrangements for the meeting and expanded Dr Savioli's remarks about World Health Day. The event would highlight the public health impacts of insecticide resistance and environmental change and the need for capacity building for vector-borne disease management. Commemorations would include airport displays, global SMS messages about the impact of vector-borne diseases, website development and WHO region-specific focuses.

Dr Marc Coosemans called the meeting to order. He emphasized the importance of making clear statements about the epidemiological impact and public health value of the paradigm categories that VCAG would review, in order to mobilize countries in the context of an expanding global burden of vector-borne diseases, in particular dengue and other arboviruses. Increased attention must be paid to capacity-building and environmental change in vector-borne disease control. He reiterated the NTD Director's comments about the importance of confidentiality during the proceedings.

The meeting was attended by 12 of the 13 selected members of VCAG, partners from industry, observers and special invitees (Annex 1: List of participants). Dr Marc Coosemans was appointed Chair of the meeting; Dr Ashwani Kumar, Dr Anna Drexler and Dr Emmanuel Temu were appointed as Rapporteurs. The meeting was divided into open and closed sessions (Annex 2: Agenda). The closed session (10–11 February) allowed VCAG members and the secretariat to review the dossiers presented to the Group. This was followed by a closed question and answer session between VCAG and the paradigm developers (12 February). The open session (13 February) provided an opportunity for public presentations by the paradigm developers and discussion among developers, VCAG and other stakeholders. The meeting concluded with a

closed session for VCAG to finalize the paradigm and prototype assessments for each item in the VCAG pipeline.

DECLARATIONS OF INTEREST

In accordance with WHO's policy for the management of conflicts of interest for WHO experts, the following interests and related mitigation measures were disclosed.

All 13 VCAG members submitted declarations of conflict of interests, which were reviewed and assessed by the NTD Department; for certain declarations the Office of the WHO Legal Counsel was consulted.

Of the 12 VCAG members present, nine declared no conflict of interest and two declared potential conflicts of interest. For the purpose of this meeting, however, no conflicts of interest were declared that would prevent the experts from participating in the meeting. In the future, should repellents be discussed in the VCAG, Professor Coosemans will be excused from participating in formulating recommendations in relation to repellents, due to conflicts of interest.

The support provided by the Bill and Melinda Gates Foundation for the work of VCAG is gratefully acknowledged.

SPECIAL TOPICS

Role and jurisdiction of WHOPES and VCAG (Raman Velayudhan)

The WHO Pesticide Evaluation Scheme (WHOPES) and the Vector Control Advisory Group (VCAG) have separate but complementary roles in bringing vector control products to market. WHOPES is a large-scale programme that promotes and coordinates the testing and evaluation of pesticide products within established vector control paradigms (e.g. indoor residual spraying (IRS), long-lasting insecticidal nets (LLINs), mosquito larvicides and space-spraying products)[1], assesses their safety and efficacy and sets international quality standards (WHO specifications) for these tools. WHOPES can evaluate any new tool or innovative product that complies with established vector control categories (e.g. new active ingredients or formulations for use in LLINs, combination products for standard use in IRS, or larvicides with novel mechanisms of action). In contrast, VCAG serves as WHO's main mechanism for bringing innovation in paradigms to the vector control arena. Its recommendations on policy development are submitted to the GMP Malaria Policy Advisory Committee and/or the Strategic and Technical Advisory Group for NTDs.

The role of VCAG is primarily to assess and guide the development of new, innovative vector control paradigms. In this context, a new paradigm" is a category of intervention

[1] WHO Pesticide Evaluation Scheme (WHOPES) (http://www.who.int/whopes/en/; accessed October 2014).

or class of product whose public health or epidemiological impact is as yet unproven because (i) the paradigm targets vectors or transmission contexts where the usefulness of vector control is still uncertain (e.g. vector traps for disease management); (ii) the paradigm represents a new mechanism for controlling established vectors in defined transmission settings (e.g. transgenic or otherwise modified mosquitoes); (iii) the paradigm represents the gross modification of an existing intervention to the point where it forms a new product class and/or where a new epidemiological effect is expected (e.g. products for use in areas of substantive pyrethroid resistance)[2]. VCAG evaluates these novel paradigms by investigating "first in line" prototypes for each class of intervention submitted.

Central to VCAG's function is the mandate to evaluate the epidemiological impact – in addition to the entomological impact – of novel paradigms or prototypes presented to the Group. Evaluation generates the evidence or proof of principle for the new paradigm and is a key difference in the objectives of WHOPES and VCAG. Whereas WHOPES evaluates products within established categories for which sufficient evidence exists to support public health claims and thus its recommendations on efficacy require entomological data alone, VCAG requires both entomological and epidemiological data in order to issue a recommendation.

The programmes also differ in the type of product evaluated, the kind of data required, mechanisms of data generation and the end use of the WHOPES and VCAG evaluations (*Table 1*). A WHOPES evaluation targets mature products produced on a commercial scale, requiring the submission of information such as manufacturers' internal quality assurance and control schemes, product labels, material safety data sheets, manufacturing process and batch information, and draft risk assessments and specifications. WHOPES facilitates the independent and scientifically rigorous testing of submitted products according to WHO peer-reviewed published guidelines and generates data for use in product registration. A VCAG assessment, on the other hand, targets an earlier stage of product development, taking into account a wide range of published and unpublished data to formulate recommendations, rather than adherence to and performance in a series of defined tests.

By communicating with innovators during the development of innovative tools within new paradigms, VCAG aims to shorten the timeframe between submission to the Group and a policy recommendation. Should VCAG decide that a particular paradigm has potential for vector control and issues a recommendation, this product may be deemed usable for operational vector control but may need to be evaluated by WHOPES for