

HDM/CD/M/489-07

Evidence-Based Selective Vector Control

Background

In 2004 and 2005, technical cooperation promoted by RAVREDA-AMI helped introduce a cooperation agenda in the Amazon aimed at improving the approach to malaria vector control in the Amazon subregion. In accordance with *Roll Back Malaria* guidelines, the Network is promoting a strategy to guide vector-control interventions and rational use of insecticides. It is based on systematically adopting a methodology of stratification, targeting interventions in critical areas, using available epidemiological information to select and evaluate interventions, and forming a network of localities for entomological studies where countries can systematically evaluate interventions using standardized entomological indicators.

During the last 3 years AMI project supported regional activities for development guidelines and standardized protocols for guiding the implementation of this approach into the malaria control programs (Atlanta, USA, August, 2004; Lima, Peru, February 2005; Panama City, Panama, August 2006). Now the AMI project is supporting local efforts for promoting the implementation:

The objective is get the institutionalization of a more efficient and rational approach for decision taken in vector control in malaria and make systematic and more conclusive the practice of entomology by the malaria control programs. RAVREDA-AMI activities during 2007–2008 consist of supporting pilot experiences implementing and validating the approach promoted and subsequently promoting the institutionalization of the approach.

The Strategy

The strategy looks for the promotion and validation of operational routines that allows the selection, implementation, and evaluation of vector control interventions, following principles of selective and integrated vector control and emphasis in primary interventions recommended by WHO. The strategy includes two components:

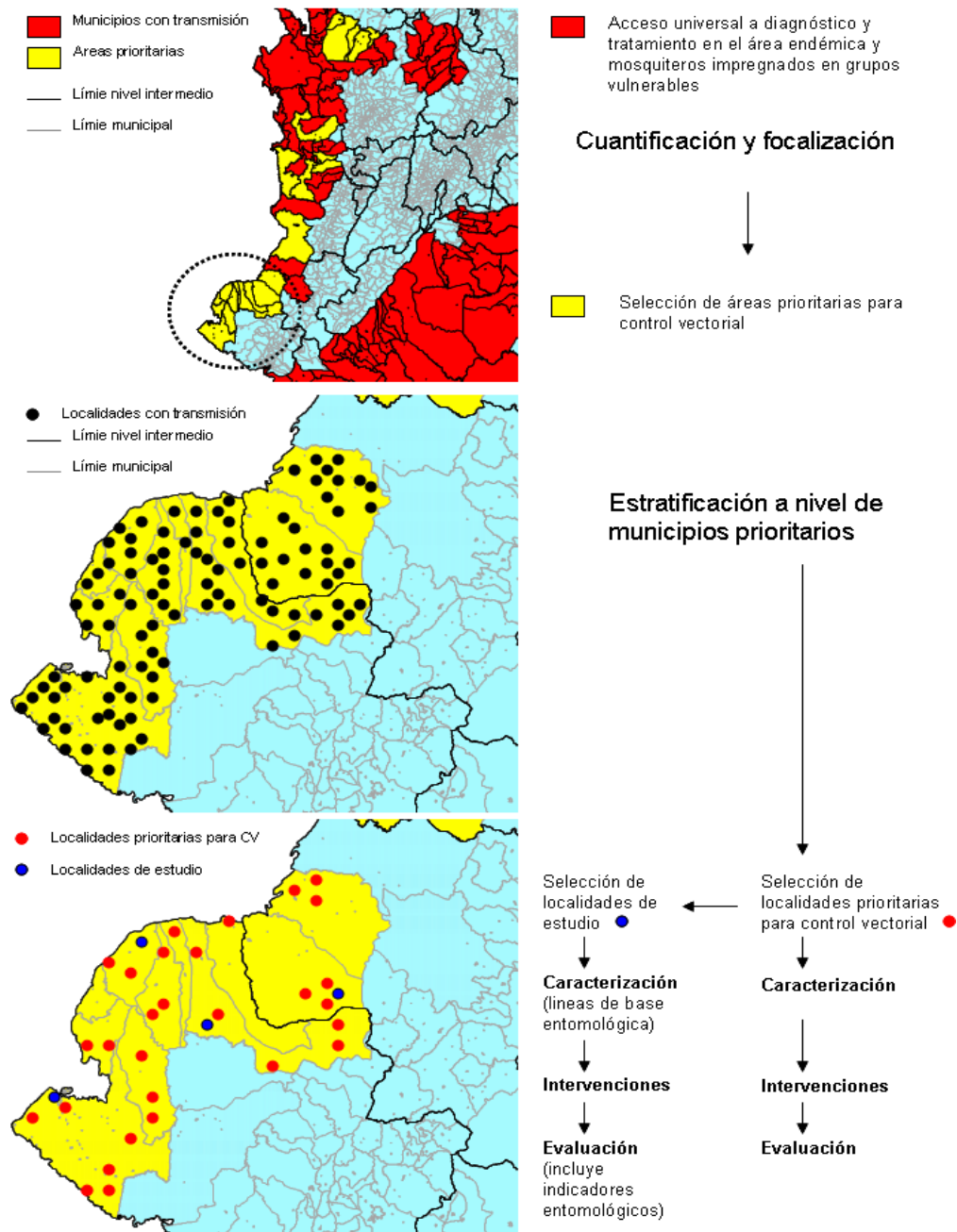
- i) an approach for stratification of malaria transmission areas and selection of localities and interventions essentially based in epidemiological data, and
- ii) a methodology to make systematic the practice of field entomology into the malaria control programs routine and generate standardized and conclusive entomological data for the different levels.

This strategy is a local-level (*state/municipio*) instrument for targeting and selecting malaria vector control measures and evaluating their effectiveness. It is a 'selective control' application that has yet to be implemented on a large-scale in the Region. In the framework of Integrated Vector Management (IVM), the goal is to create an assessment-intervention–assessment routine, based on epidemiological and entomological indicators, to better guide interventions. The strategy is based on use of the malaria data system to select

localities and interventions and also assess impact. Entomological activities, in turn, will be conducted in several selected localities, with standard methodology in all Amazon-region countries, providing information to guide local activities in those localities and others that share similar epidemiological and entomological conditions. Systematically collected data from several sites in a country or region will be valuable at the central level and generate relevant information.

The information thereby generated in routine services will make it possible to **guide interventions at the local level and, at the same time, create an information system on entomological and operational indicators that will help the different levels in their decision-making:**

In this context, the Strategy promotes concentrating the available resources on well-planned interventions in localities with the greatest burden of disease and carrying out evaluations to select interventions and assess their impact.



- [Strategy to Guide Decision-Making in Control of Malaria Vectors in the Countries of the Amazon Region](#) (*Estrategia para racionalizar la toma de decisiones en el control de vectores de malaria en los países de la Región amazónica*, draft, in Spanish)
- Annex 7: [Operational and Epidemiological Indicators for Evaluating Vector-Control Measures for Malaria](#) (*Anexo 7: Indicadores operacionales y epidemiológicos para la evaluación de las acciones de control vectorial en malaria*, draft, in Spanish)
- *Annex 11: Procedures and Indicators for Decision-Making in Malaria Vector Control in Selected Localities* (*Anexo 11: Procedimientos e indicadores entomológicos para toma de decisiones en control vectorial en malaria en localidades seleccionadas*; draft, in Spanish)
- [Meeting on the Proper Use of Entomology in Malaria Control Programs in the Americas](#) (Panama City, Panama, 1–4 August 2006) (*Reunión sobre el uso adecuado de la entomología en los programas de control de malaria de las Américas*) (in Spanish)

Procedures and Indicators for Decision-Making in Malaria Vector Control in Selected Localities

Based on the stratification of priority localities, several localities will be selected to be representative of the main strata in each region or group of *municipios*, and entomological observations will be conducted there. An initial entomological evaluation will help in selecting the most appropriate intervention. The intervention will be followed by monthly post-intervention assessments for six months. Systematic collection and analysis of entomological data during this period will generate elements to guide the local interventions. Repeating the process in several different localities in a state/department/country, standardizing procedures, and following up longitudinally for six months will make the data more robust, so that the information generated from various different localities can be centralized to help guide strategies and decisions on procurement of insecticides and needed supplies.

The methodology defines the entomological data that will be considered in selecting interventions and charting the indicators to be used in assessing the efficacy and effectiveness of each type of intervention. For each entomological procedure, methodological parameters on technique were established in field and laboratory and with measured quantities and duration. Standardizing procedures permits analysis of temporal and spatial variations and guarantees basic methodological rigor so that the data can be used at different levels and shared through the network with different countries.

Use of Data

The strategy also maps out procedures for collecting and processing data, the basic variables to be included and automatic updating of databases. Guidelines are also included on interpreting and analyzing the effectiveness, impact, and use of data to redirect interventions. Finally, parameters are established for disseminating and exchanging information, charting variables of interest for each level. The information to be shared between the local and national levels, between different regions in a country, and to be available centrally and at border areas with other countries will basically consist of records of species distribution, residuality (residual spraying, mosquito nets, and breeding sites), susceptibility to insecticides, and the impact of control measures (both epidemiological and entomological).

For 2008, information from the pilot experiences is being collected in [Epi Info](#) database and tests are being doing for data analysis and dissemination with [Tableau/Tableau Reader](#) software. This constitutes a preliminary effort in developing a model for entomological surveillance and entomological data management in malaria control programs.