

Symposium: New perspectives and approaches to surveillance and control of Phlebotomine sand flies

Title: Integrated surveillance of leishmaniasis vectors in the Americas

Keywords: new perspectives; surveillance; control; Phlebotomine; leishmaniasis vectors; Americas.

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We developed integrated vector surveillance (IVS) proposals, both for cutaneous leishmaniasis (CL) and visceral leishmaniasis (VL) in the Americas, based on eco-epidemiological studies conducted by researchers of the Leishmaniasis Research Network of Argentina-REDILA. For CL, the transmission was explained in the framework of the edge effect, the increase of vectors and risk of exposure at ecotones and environmental interfaces, and typified as ephemeral, transient, or permanent edges. This approach supports a cost-effective IVS strategy for early warning of CL outbreaks, through an environmental modification alert network, which includes multiple sources of information and actors. In relation to VL, the earliest colonization sites and spatial distribution were explained by modeling and forecasting the most likely hotspots, persistent in time and space, and modulated by environmental variables. Therefore, for VL, a scalar strategy of critical site selection is proposed from a “city” scale based on secondary sources such as remote sensing for the definition of possible areas to monitor and intervene; a scale of restriction from possible areas to most likely areas through local knowledge; and a “focal site” scale of trap placement through field observation; in this way, IVS activities are carried out at a few sites of the urban landscape and allow a sustainable program. The VL surveillance strategy is being evaluated and validated in the field.