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VBORNET NETWORK: A DATABASE AND MAPS OF ARTHROPOD VECTOR DISTRIBUTION AND SURVEILLANCE IN EUROPE

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To combat vectors and the public health hazards they represent, many European countries have established their own vector control programs. Such programs may benefit from a more standardized approach to enable to compare obtained results, share compatible data and tackle transboundary issues. The VBORNET network established by ECDC (Stockholm, Sweden) and coordinated by Avia-GIS (Zoersel, Belgium) offers a unique platform to discuss the standardization of vector surveillance protocols and control methods, as well as to raise public health awareness. The objective of VBORNET is to establish a European Network of entomological and public health specialists in order to assist ECDC and its member countries with implementing preparedness activities for vector borne diseases (VBD). An important activity of VBORNET is the establishment and maintenance of databases on vector distribution and surveillance in Europe. It is crucial that within the network, the entomological expertise is directly linked and applied to public health expertise and experience. Data (entomological and surveillance) gathered by the Network are used to create Pan-European vector distribution maps at three levels of administrative units: NUTS1 (country level), NUTS2 (regional level) and NUTS3 (province/district level) both for continental Europe as well as its overseas territories. Basically, using a downloadable interactive tool, experts can upload the current status of presence/absence of mosquito, tick and phlebotomine species at the different geographic levels. In addition, experts can also enter surveillance activity data for the selected species. Once uploaded, the data are transferred to a centralized data repository for further processing. This processing stage includes a validation stage by four focal experts for mosquito, ticks, sand flies and other vectors. After this validation phase, quarterly outputs are publically made available.In particular priority is given to the following diseases and their vectors::A] 1) Mosquito borne: chikungunya, dengue, West Nile, 2) Mosquitoes: invasive mosquitoes such as *Aedes albopictus, Ae. japonicus* and *Ae. aegypti.* B] 1)Tick borne: tick borne encephalitis, Congo-Crimean haemorrhagic fever, Lyme disease, tularaemia, rickettsiosis, 2) Ticks: *Hyalomma* spp. and *Ixodes ricinus*, for the latter particular attention is being given to species limits and shifts. C] 1) Phlebotomine borne: Leishmaniasis, sandfly fevers, 2] Sand flies: *Phlebotomus ariasi, Ph. perniciosus, Ph. perfiliewi, Ph. syriacus/ neglectus, Ph. tobbi, Ph. papatasi, Ph. sergenti,* and recently *Ph. alexandri* and *Ph. mascitti.* In this presentation we will highlight (1) management and organization of the VBORNET network, (2) current and future benefits of the network for European vector surveillance and control programs, and finally (3) current map outputs for invasive mosquitoes and sand fly species distribution in Europe.

Key Words Vector borne diseases, surveillance, mosquitoes