Strengthening preparedness to arbovirus infections in Mediterranean and Back Sea Countries: towards common criteria to assess and report on One Health strategy

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Background

Identification of common criteria to consistently describe integration of arbovirus surveillance is needed to allow comparable assessments and document the impact of the One Health strategy. With this aim, we conducted a scoping review focusing on mosquito-borne arboviruses representing risks for health in the Mediterranean and Black Sea Region in the framework of MediLabSecure Project.

Methods

We included articles from 2000-2015 in English focusing on surveillance of West Nile Virus(WNV), Chikungunya(CHK), Dengue(DNG), Rift Valley Fever(RVF) and on integration between sectors (human, animal, entomological and environmental). We retrieved articles through PubMED and qualitatively analyzed them considering sectors and levels of integration as per the analytical framework (table1) we previously proposed for a survey on integrated surveillance with MediLabSecure Partners (M.G. Dente et al., Italian Journal of Tropical Medicine and Global Health 1, 2016).
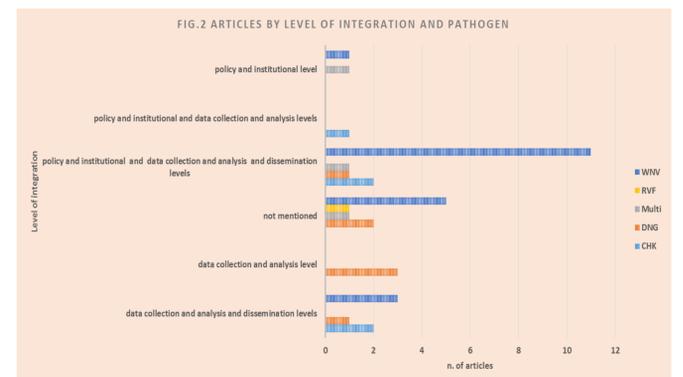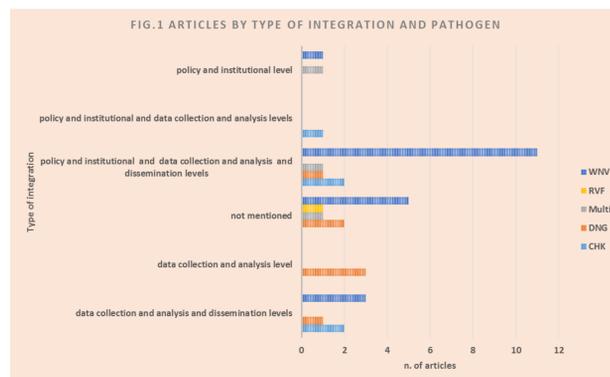
Results

We identified 343 articles of which 36(10%) met the inclusion criteria: 23(64%) referred to WNV, 7(19%) to DNG, 5(14%) to CHK and 1(3%) to RVF. United States(10), Italy(5) and France/Réunion Island(4) were the most represented countries.

12(33%) articles reported integration between the human and entomological sectors, 6(18%) between human and animal and 12 between human, animal and entomological sectors (Fig1 for further details).

Of the 27(75%) articles specifying the integration level, 15(56%) reported integration at 3 levels: policy/institutional, data collection/analysis and dissemination and 6 (22%) reported integration at two levels: data collection/analysis and dissemination (Fig2 for further details).

Limits

Limits: only one electronic database was utilized and only one reviewer performed the screening and the analysis of the articles.

Conclusions and Recommendations

Recurrent criteria based on sectors and levels are used in studies to describe integrated/One Health surveillance on arboviral diseases and this reinforce the possibility to analyze these systems on the basis of common analytical frameworks such as the one we proposed.

There is the need to estimate One Health benefits in a systematic way to assess if this approach can really lead to faster disease detection, more efficient disease control and tangible financial savings when formally compared against separated surveillance streams.