Strengthening preparedness to arbovirus infections in Mediterranean and Black Sea Countries: the MediLabSecure effort towards the integrated surveillance in the context of One Health strategy

Maria Grazia DENTE[1], Flavia RICCARDO[1], Francesco BOLICI[2] , Silvia DECLICH[1] on behalf of the MeSa Working Group
1: Istituto Superiore di Sanità (ISS), Roma, Italy
2: University of Cassino, Italy

Background

MediLabSecure network, established in 2014 following the EpiSouth Projects, comprises 55 laboratories and 19 public health institutions in 19 non-EU countries in the Mediterranean and Black Sea regions (Albania, Algeria, Armenia, Bosnia and Herzegovina, Egypt, Georgia, Jordan, Kosovo, Lebanon, Libya, Moldova, Montenegro, Morocco, Palestine, Former Yugoslavic Republic of Macedonia, Serbia, Tunisia, Turkey, Ukraine). This One Health project develops through the transdisciplinary interaction of four sectors: human health, animal health, medical entomology and public health, to enhance preparedness and response to emerging arboviroses and to improve integration of surveillance.
To this aim, we implemented a new methodological approach towards a descriptive qualitative assessment of implemented One Health Surveillance integration.

Methods

We tested a conceptual framework that we had defined in prior studies to describe and assess surveillance integration and performed a MediLabSecure situational analysis (MeSA Study) on integrated surveillance (IS) of West Nile Virus (WNV) in Tunisia and Serbia and, of Crimean Congo Haemorrhagic Fever (CCHF) in Georgia, involving the human, animal and medical entomology sectors of vector borne disease surveillance.
The MeSa had the following objectives:
1. Describe how the collection, analysis and dissemination/exchange of information is organized within and between human, animal and entomological surveillance of arboviruses;
2. Identify formal procedures and informal practices for IS;
3. Discuss main challenges and success stories in establishing a functional inter-sectoral collaboration and integrating sectorial surveillances.

Results

The three surveillance systems (SS) show criteria for integration as per the proposed conceptual framework (Table 1).
The establishment of an interoperable data collection system, seems the first step to promote data sharing between sectors, but this remains a rare feature in many countries. Even when well established, like in Georgia, the use of these data for integrated early warning, analysis and inter-sectoral priority setting and multisector risk assessments is still pioneeristic.

Table 1. Level of integration for surveillance of arbovirus infections in Serbia, Tunisia and Georgia

Level of integration	Sublevels of integration	Criteria		
		Serbia-WNV	Tunisia-WNV	Georgia-CCHFV
Policy and institutional level	Policy level	Legislation issued (2014) by the Ministry of Health has created an intersectorial Committee in order to share information across sectors to recognize early circulation of WNV and make decisions (coordination/communication role of the PH sector) - National and district level projects supported financially by the Ministry of Agriculture and by the Ministry of Health have sustained intersectorial integration of entomological with veterinary and human surveillance of WNV. - Unique reporting system legislation for entomological and veterinary surveillance - Presence of a strategic plan developed after 2014 epidemic.	- Legislation issued by the Ministry of Health (2004) has created intersectorial committees at regional/local level in order to rapidly respond to WNV human cases - Human Health and Entomology both refer to the Ministry of Health and show coordination at central and subcentral levels. - Presence of a strategic plan for WNV control with protocols for all sectors (not backed by formal legislation)	-Legislation issued by the Government (2015) has created the One Health intersectorial committee at national level. -Human Health and Entomology refer both to the Ministry of Health. -Presence of a strategic plan developed after CCHF epidemic in 2014 which is presently being developed in a generic preparedness plan
	Institutional level	-Presence of formal institutional collaboration mechanisms within sectors (e.g. bilateral agreements in place for the entomological surveillance in Vojvodina province-northern Serbia) and of informal collaboration mechanisms (across sectors). -Existence of identified focal points for each of sector	-Presence of informal collaboration mechanisms (across sectors and within the human health sector) -Presence of formal institutional collaboration mechanisms with other sectors (e.g. role of regional councils) -Existence of identified focal points for each of sector	-Presence of informal collaboration mechanisms (across sectors and within the human health sector) -Presence of formal institutional collaboration mechanisms within other sectors (as during the 2014 outbreak). -Existence of identified focal points for each of sector
Data collection and analysis level	Interoperability mechanisms at data collection level	Data sharing is in place within sectors with distinct databases. Unique web-based database across all administrative level exists for veterinary surveillance since 2013	Data Base on animal data at Directorate General of Veterinary Health (Ministry of Agriculture)	EIDSS Electronic Integrated Disease Surveillance System across all sectors
	Interoperability mechanisms at data analysis level	Not available	Not available	Potential with the EIDSS, but presently used across human epi and virology
Dissemination level		Information and weekly reports are shared across sectors. Each institution might deliver information to the public autonomously.	Information and reports are shared across sectors during coordination meetings (e.g. periodic meetings of permanent committee for vector control). On the website of the MoH it is uploaded the annual report which includes also the annual report of Directorate General of Veterinary Health	Information and reports are shared across sectors during the One Health Meetings organized by NCDC every 3 months

Conclusions and Recommendations

Our findings suggest that the use of this methodology could allow standardized and comparable one health surveillance analyses. The three surveillance systems prove that integrated surveillance can be operationalised with a diverse spectrum of options. However, in all countries the integrated use of data for early warning and inter-sectoral priority setting is pioneeristic and early-warning before human case occurrence is not operationally prioritized. Supporting inter-sectoral data collection and analysis can be strategic for cross-sector early warning and risk assessments. These are essential for setting national common priorities.

MediLabSecure Project is supported by the European Commission(DEVCO:IFS/21010/23/194).
Contact: Maria Grazia Dente – Mariagrazia.dente@iss.it