

APHAEA: Towards a harmonized wildlife health and population monitoring in Europe

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Purpose: Europe is increasingly concerned about infections of humans or domestic livestock that are shared with wildlife. Recent examples include the emergence of African Swine Fever in Poland and the Baltic countries in relation with wild boar; the re-emergence of tuberculosis in many countries in relation with different wildlife hosts including ungulates and badgers; and the lagomorph-related increase of leishmaniosis in human in Spain. However, Europe's characteristic diversity makes it difficult to monitor both the disease agents and their wildlife host populations in a harmonized and coordinated way.

Methods: The EU consortium APHAEA (EMIDA ERA-NET) has set up tools that aim to overcome these limitations. First, "Disease Cards" including recommended sampling and diagnostic protocols are now available for the most relevant diseases shared between wildlife and livestock or humans. Second, host "Species Cards" include reviews on abundance estimation methods and recommendations of the most suitable methods at different spatial scales. Additionally, APHAEA also aims at strengthening a European Wildlife Health Network that will continue beyond the end of the project and contribute to sustained and improved wildlife health surveillance in Europe. A specific website (www.APHAEA.eu) and annual meetings as well as consultation workshops with external partners and stakeholders facilitate participation and information exchange.

Results: In collaboration with an extended network of collaborating partners, APHAEA performed a questionnaire and trans-national surveys using standardized methods on selected pathogen and host binomial including Aujeszky's disease virus in wild boar, *Francisella tularensis* in rodents and *Echinococcus multilocularis* in foxes. This exercise revealed the strengths and weaknesses of this incipient European monitoring scheme.

Conclusions and relevance: One goal of this wildlife health surveillance network is to complement longer established international health surveillance programs for domestic animals and people, and in this way to contribute to early warning of emergence and re-emergence of wildlife-related diseases.