

Framework for the design, improvement and documentation of surveillance systems

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Surveillance for animal diseases aims to protect animal and public health. Those tasked with surveillance decisions, however, have to navigate through the diversity of advice and published guidelines, often lacking tools to help them choose the best methods. The objective of this work was to develop a framework for surveillance design in order to increase the quality and cost-effectiveness of animal health surveillance activities, as well as increase transparency in underlying design decisions.

A surveillance design framework was developed under the RISKSUR project (<http://www.fp7-risksur.eu/>) with the aim of structuring the process of designing, documenting and re-designing animal health surveillance. Informed by extensive reviews of the literature, as well as a review of existing surveillance systems in Europe, the framework supports the design of surveillance at two levels, the *surveillance system* and its *surveillance components*.

When designing a surveillance component the user is guided through ten steps: target population, defining disease suspicion, surveillance enhancements, testing protocol, study design, sampling strategy, data generation (sample collection), data/sample transfer, data translation (sample analyses), epidemiological analyses, dissemination of results and surveillance review. Through each of these steps, the user is presented with the surveillance decisions he or she needs to make and document. The user is given advice and information gathered from the literature and expert opinion, as well as links to any relevant statistical and epidemiological tools. A WIKI website allows users to contribute and keeps advice dynamic and peer-reviewed.

The output of the process is a surveillance design informed by current epidemiological knowledge and tools as well as full documentation of the design and decisions made. Moreover, the framework is linked to the RISKSUR tool for evaluation of surveillance components (EVA tool).

Together, the two frameworks promote a structured and systematic approach for surveillance design and evaluation, promoting comparable, transparent and cost-effective surveillance.