

Use of participatory approaches for the evaluation of animal health surveillance systems in northern countries

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Abstract

Accurate evaluations of surveillance systems are keys in the guidance for critical health decisions and policy issues. However, current guidelines and frameworks used for evaluation are often providing a list of attributes (indicators) with no or few details about the methods used to measure these attributes. By reviewing the advantages and limits of existing methods and tools we highlighted the needs for innovative tools to assess specific attributes or to address specific evaluation questions. Indeed socio-economic and cultural context of surveillance are hardly ever considered within the evaluation process. Therefore we have identified a list of attributes that could be assessed completely or partially with the use of participatory approaches in order to improve the completeness of surveillance systems' evaluation process. Moreover, these approaches should lead to improved recommendations and to a better acceptability by the stakeholders.

Introduction

In the last decade, investment and interest in disease surveillance systems have increased and a wide diversity of systems are currently in place, either in public health and animal health [1]. In order to improve the performances and efficiency of these systems, it is essential to have repeated and relevant evaluations. With this objective, several organizations have developed their own guidelines to conduct such evaluations.

In a previous study we performed a systematic review of these guidelines to identify and compare their advantages and limitations (publication ongoing). A total of 15 guides from animal health, public health and environmental health were identified and analyzed; and a list of the most common attributes used in the frame of animal health surveillance systems was inventoried. Results of this preliminary work emphasized several gaps in the methods and tools used for the assessment of some of these attributes. The assessment of several attributes reveals important perception factors and sociological aspects that are not easily captured by closed questions.

To overcome these limits, we proposed to use participatory approaches for the evaluation of animal health surveillance systems. Actually, participatory approaches refers to a range of methods and tools which enable stakeholders to play an active role in the definition and in the analysis of the problems they may encounter, and in their solution [2].

The use of these approaches in the field of evaluation of surveillance systems could bring an added value by allowing better understanding of the system and of stakeholders' expectations.

For the development of such participatory approaches, the existing methods and tools currently used for attributes assessment were reviewed, and their advantages and limitations were identified. Participatory methods and tools were then selected according to the needs identified.

Materials and methods

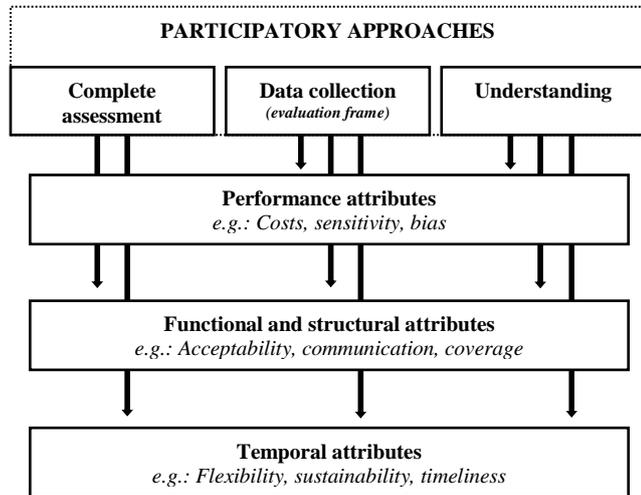
The most common attributes used in the evaluation guides targeting animal health surveillance systems were inventoried. Corresponding methods and tools used for their assessment were listed using references provided in the literature. These methods and tools were analyzed, looking at their field of application, the data required, the type of outputs provided, and details on their advantages and limitations according to the information available and opinions from experts in the field (e.g. practical application; costs).

Results from the analysis of classical methods and tools allowed us to identify the main gaps, and to assess the potential contribution of participatory approaches in addressing those gaps. We identified three circumstances where participatory methods and tools will be used: *(i)* to undertake the complete assessment of attributes for which there is no existing method (or tool), or when the method is not standardized enough (e.g. semi-structured interviews) or not completely addressing all aspects of the attribute.; *(ii)* to contribute to the collection of data used in classical methods and tools (e.g. scenario trees); *(iii)* and to better understand some of the outputs of the evaluation, leading to better recommendations for the improvement of the system and better communication on these recommendations.

Participatory approaches will thus target several attributes, which can be put together in different groups as described in figure 1. Performance attributes aimed at evaluating the value and the quality of the evidence provided by the system. These attributes are measurable but it is not possible to directly implement action at this level. Whereas functional and structural attributes can be adjusted according to the needs; they aim at evaluating the management and the technical processes, the system

operation and the quality of the data collected. Temporal attributes are dependent of the lapse of time considered in the evaluation, and may vary over time.

Figure 1: Application of participatory approaches according to the groups of attributes considered.



At the same time, a review of the participatory methods and tools was performed. Most relevant approaches were then associated to “classical” methods where we identified a need to facilitate data collection.

When the objective of using participatory approaches was to implement a complete assessment of the attribute, it was necessary to clearly understand the definition of each considered attribute. Indeed, various system components contribute to the assessment of the attribute. All these components have to be identified in order to correctly assess the whole attribute. Specific methods and tools were then associated to each of these identified elements.

Result

The review of the existing methods and tools used to assess attributes allowed us to determine the main gaps, and to identify the potential value added of participatory approaches accordingly (**Table 1**).

A total of 22 attributes were included in the analysis: 11 were related to the performance of the system, 8 were functional and structural attributes, and three were identified as temporal attributes. Forty methods and tools were associated to the assessment of these attributes (14 qualitative and 30 quantitative).

Specific participatory methods were associated to the type of data and to the stakeholders targeted in the case for which these approaches are used for facilitate the data collection.

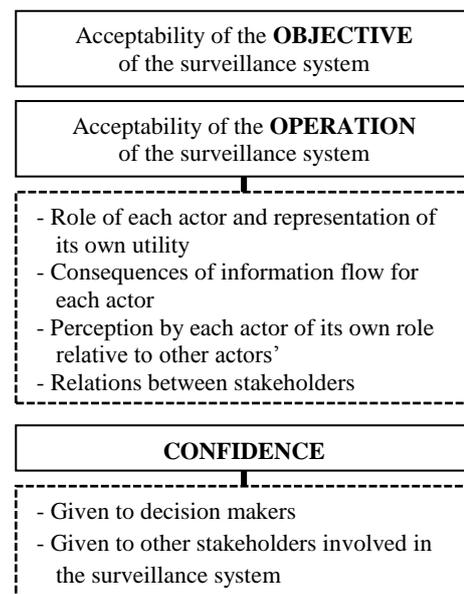
Table 1: Short list of attributes with examples of their associated classical methods, and application of participatory approaches.

Attribute	Existing method(s)	Participatory approach
Acceptability	Semi-structured interviews	Complete assessment
Communication	NA*	Complete assessment
Cost	Cost-estimation	Data collection
Flexibility	Semi-structured interviews	Complete assessment
Sensitivity	Capture-Recapture, Scenario trees	Data collection
Representativeness	Spatial estimation	Data collection
Timeliness	Statistical models	Data collection

* No specific methods or tools were found in the literature

When there were no existing methods, or when only structured interviews were found in the literature, we identified participatory methods and tools to implement a complete assessment of the attribute. Yet, closed questionnaires do not always capture all relevant information related to the sociological and perception factors. The use of participatory approaches leads to open discussion between stakeholders and encourage a wide participation thanks to the use of appropriate tools [3]. These approaches allow the collection of relevant information targeted, as well as information related to external factors of the system. Some of the participatory methods identified in the frame of the evaluation of surveillance systems are: problem trees and solution trees, Venn diagrams, role-playing, Companion Modeling (ComMod), and impact diagrams.

Figure 2: Sub-indicators constituting acceptability of the surveillance system.



As most of the attributes identified can be applied to different level of the surveillance system, it was necessary to decompose them. Here is an example of the results regarding the acceptability (**Figure 2**).

Discussion

Depending on epidemiological, sociological and economic factors, animal diseases surveillance systems can be complex, meaning that multiple attributes are required to assess their performance and many different types of methods and tools are needed to evaluate them.

An important part of the identified methods used for the assessment of these attributes are quantitative, such as scenario trees, capture-recapture and modeling. These quantitative methods require quality data, which can be sensitive or sometimes even impossible to collect, and are usually applied to a limited number of attributes (such as sensitivity for example). The implementation of participatory approaches could lead to an easier collection of the data required, and to a more complete and relevant dataset.

Direct consultation with stakeholders through semi-structured interviews is often applied as well in the common assessment methods. Participatory approaches could lead to a better understanding of the system by taking into consideration stakeholders' perception, needs and expectations regarding the system, using appropriate tools leading to open discussion between stakeholders. Moreover, as stakeholders will be directly engaged in the evaluation process through these methods, existing locking points in the communication or in the functioning of the system, could be more easily identified and solved by mutual consent.

Even if these approaches are not applied for all attributes in the same way, the use of participatory approaches in the evaluation of surveillance systems should improve the evaluation in a global way as well. Indeed, these methods are less expensive than classical methods and could present an interest in the cost-effectiveness of the evaluation. Indirect advantages could be the collection of information regarding the general context in which stakeholders evolved, and regarding the external factors of the system. All these indirect advantages would allow providing relevant and realistic recommendations for the improvement of the surveillance system.

More importantly, by directly involving stakeholders in the process and by taking into consideration their own point of view, participatory approaches should lead to a better acceptability of the evaluation and to an improved feeling of belonging and even ownership.

Conclusion

The presented method is a preliminary method, which should be refined in the field. Outputs from evaluation performed using classical methods and participatory approaches should be compared to conclude on the value added of the participatory methods and tools adapted to the

context of the evaluation of surveillance systems. The advantages and limitations of these methods should be clearly identified as well.

References

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