

EPIDEMIOSURVEILLANCE NETWORK EVALUATION

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Summary

In this study is presented the evaluation and the organization mode of an epidemiosurveillance network. The purpose was to obtain information which allows correct and concrete evaluation of sanitary situation in the area and in the farm. Below is presented the way of establishing the indicators for assessing the network activity and improvements of the work techniques.

The goal of the epidemiologic surveillance networks is to obtain information about animal diseases in order to direct the control or prevention programs. Thus, an efficient plan for controlling the animal diseases needs a functional epidemiologic surveillance network that provides good quality sanitary information. The evaluation of the epidemiologic surveillance networks is a key point for the assurance of their efficacy. It is indeed mandatory to have concrete elements to allow the identification of the weak points in the functioning of the network to propose the best adapted measurements in order to improve the quality of the epidemiologic information gathered throughout time.

There are two methods that are considered to be optimal in order to undergo this evaluation:

- An external method of evaluation, based on technical and economic audit of the network functioning. This allows the periodic obtaining of an expert's opinion, from outside the network, with regard to its functioning mode.
- An internal method of evaluation, based on the performance indicators used for the diagnosis establishment. This method, applied by the operator, allows a close collaboration with all the members of the network and undergoes a continuous surveillance of the network functioning. We will be discussing this method in this paper.

The definition proposed for the performance indicators of an epidemiologic surveillance network is: the variables in limited number, reunited in a board chart, that allow the continuous calculation of the level of accomplishment of the prior activities of an epidemiologic surveillance network, with the goal to improve its directing.

There are five fundamental notions that delimit well the objectives and the goal of elaborating the performance indicators and are associated to this definition.

Limited number of variables. The performance indexes must be few, global, and illustrate the network functioning mode, over all. This notion implies the obligatorily that the method of elaboration of the performance indicators to allow the obtaining of a limited number of indicators. Indeed, it is not realistic to monitor a

great number of indicators (even if for practical reasons, such as: the possibility to calculate them). A too long list might not be used in a useful time.

The method of elaboration for these must be based on choosing the most pertinent, the most global and most representative indicators for a good functioning of the network for epidemiologic surveillance.

Continuous monitoring. Performance indicators are calculated continuously. Thus, they offer a longitudinal view of the functioning mode of the epidemiologic surveillance networks. Their role is actually to detect the most precociously any mistake in the functioning of the network that might have consequences on the quality of the results. The performance indicators are, above all, dynamic variables (they significantly evaluate in time). These variables are associated to some rhythmical activities undergone during the surveillance and are determined for a better functioning of the network.

Through their continuous character, the performance indicators are complementary to the evaluation points that will appreciate a greater number of variables, among which are structural variables, varying less in time and are less adapted to a continuous monitoring.

Setting the board chart. The continuity notion needs the endowment with and instrument allowing the obtaining of a synthetic vision of the functioning mode of the epidemiologic surveillance network at one point. The board chart of the performance indicators offers an instant vision, easily to read and interpret, of the epidemiologic surveillance network situation and its activity. The board chart principle supports the idea of limited number of variables as being representative for the network.

Priority activities. For a limited number of variables to be representative, for the well functioning of the network, it is mandatory that they reflect the level of accomplishment of the activities directly associated to the quality of the network functioning. These are those activities that we can consider as priority ones and that must be evidenced in order to elaborate the indicators. Among these activities determined for the performances of the network it is also possible to have priorities to ameliorate the activity that will lead to privilege certain indicators to permit a progressive amelioration.

Measuring the performances cannot be done unless the obtained results are known into details, not only the global ones, even though those are necessary. As a consequence, the elaboration of the performance indicators cannot be done but based on the perfectly formulated objectives, protocols and specific surveillance.

Network coordination. This 5th notion of the performance indicator definition is also the most important. It illustrates the essential finality of the elaboration of the network indicators by its operators. Thus, the performance indicators are different than any notion of comparison of different networks, to place within the center of them an internal step applied by and for the networks operators.

Alike a qualitative step, the elaboration of the performance indicators is, before anything else, an internal step that necessitates a strategic decision. This task must be carried out by a qualified person and all the operators of the epidemiologic surveillance network must get involved.

The involvement of all the operators is indispensable to reach to an accuracy of the indicators, that actually constitutes the only evidence of their usefulness and correct use. The method of elaboration of the indicators must take into account the social dimension of the surveillance network organization, so that their application is not perceived as a constraint, but as it truly is, an instrument of improvement for the functioning of the network.

The coordination activity implies the possibility of identifying the motives of defective functioning of the network and permits their correction. This notion of *performance indicators* is associated to that of diagnosis indicators, which is defined as *a list of variables associated to an indicator of performance that allows the calculation of the level of accomplishment of the activities related to this performance indicator, to identify if necessary the causes of not accomplishing the expected values.*

These diagnosis indicators allow the establishment of the cause why there is a dysfunction of the surveillance network evidenced by a performance indicator. Diagnosis indicators are precise, more and attached to a performance indicator.

THE BASES OF ELABORATING THE PERFORMANCE INDICATORS

To analyze the performance of an organization it is essential to appreciate three principles:

- To take into account all the dimensions of the evaluated performances;
- To propose an analysis of the results of this evaluation;
- To examine (evaluate) the retroaction mechanisms on the objectives.

To take into account all the dimensions of the evaluated performances. An epidemiologic surveillance network can be considered as a system that elaborates a product, which is the epidemiologic information. Mant (2001) considers that to limit the evaluation of the performance of the product quality there must exist the certainty that a variation of the system quality will influence directly, visibly and quantifiably the product quality. Contrary, Mant, recommends the association to the performance indicators of the *products* of the indicators of performance of the system functioning mode.

Because the performance indicators have precociously alert role the system functioning mode, they must be able to evidence a functioning deficiency before it has an major impact on the system product quality.

Guillevic (1999) considers as well that the evaluation of the performances must not be limited to a sole production evaluation. The evaluation of the yield of a work system must be done on three essential elements: production, organization and the operator. This division of the activity of a system was considered optimal to be applied to the epidemiologic surveillance networks.

Production. The performance of the production depends on the quality of the detection devices, those of investigation and analysis of the disease cases. This device is shown in table 1.

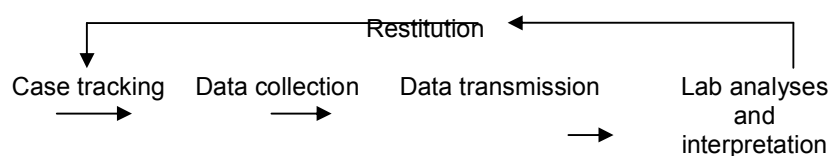


Figure 1. The activity sequences of a network

Organization. The performances of the organization depend on coordination (the surveillance objective and supervising the operators) and communication (Leplat 1999).

Man. Performance of an individual at his work place depends on the level of his solicitude (his group integration), commitment and possibility to compare and compete with others (Louche 2001).

To each of these domains and activities there are associated surveillance activities that are not shown in table 1 that we must find, generally, in all the operational epidemiologic surveillance networks.

Table 1

Organization of the board chart to present the performance indicators

	Sequences	Activities
Product	Case tracking down	Tracking down all the disease cases for the number of animals surveilled
	Data collection	Forms filling out Previsions accomplishment
	Data transmission	Forms sending
	Analysis and interpretation of data	Lab analysis of the samples Data interpretation
	Information communication	Return of the analysis results Summarizing data Informing on the taken measures
		Network coordination as a whole

Organizați on	Coordination	Conception of the network technical activities
		Supervising the network operators
	Communication	Interior dissemination of the network results
		Exterior dissemination of the network results
		Communication between the network members
Operators	Group	Communication with the breeders (farmers)
		Team forming
	Commitment	Communication between network members
		Data dissemination
	Comparison	Recycling, rescheduling
		Communication within and without the group

The existent activities in table 1 are considered priority ones. Thus, one or more indicators must be elaborated for each of these activities to be sure that all the determinant factors of the network performance were well taken into account. Finally, the absence of the indicators for one or more of the activities must be argued by the operators undergoing the evaluation process.

Proposition of processing the results of this evaluation. To be content only with the recording of the dysfunction of a network is not sufficient; solutions must be proposed to solve the identified problems. The indicator system is but a superficial system allowing the formation of a general idea about the network functioning mode. The causes determining the insufficiencies in order to consequently and durably improve the network.

This stage is important because the temptation to report these insufficiencies as *qualities* of the operators is great, even though their explanation is possible through the existence of the inherent factors of the network.

With regard to the epidemiologic surveillance, it is not sufficient to define the performance indicators, but also to elaborate the *diagnosis indicators* and the procedures to apply to solve the identified problems. It is important to put in practice a device to determine, validate and record the applied measures when a dysfunction of a performance indicator is evidenced. Defining the performance indicators is but a first step in a more complete strategy to permanently ameliorate the network.

Examining the retroaction mechanisms on the system's objectives

Elaboration or measuring of the performance indicators must allow the examination, reviewing and modification of the surveillance protocols. This

measure is salutary for the well functioning of the network, for there is no profit to maintain an illusion of an objective that is never, or rarely, achieved. Applying the performance indicators may in the first years of functioning, determine a regression of the activity that many times is significant. This idea confirms the structured value for the epidemic-surveillance of the process of monitoring and evaluating of the performance indicators.

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