

Advice 10-2016 of the Scientific Committee of the FASFC on the feasibility and effectiveness of the monitoring of risk indicators for animal disease emergence

The objective of this opinion is to investigate the feasibility and effectiveness of the monitoring of risk indicators for animal disease emergence in a Belgian context in order to identify situations of increased risk of animal disease introduction or spread (emergence), ideally before the actual emergence of a disease (forecasting) or in the early phase of emergence (early warning).

Candidate risk indicators were selected by experts from a list which was made up in a previous advice (SciCom [Advice 06-2013](#)). It was investigated if a qualitative and quantitative analysis of the data related to these risk indicators could be done in order to study their evolution over time (trend observation and trend analysis). It is hypothesized that a change in status of one (or more) indicator(s) or the crossing of a threshold value may result in a (generic) pre-alert signal, meaning an increased risk of emergence (higher threat) of animal diseases. If, following a risk assessment by experts it is concluded that there is a real risk of emergence, a (more specific) alert can be issued to allow the risk manager to react.

To check the feasibility of the monitoring of risk indicators, four indicators were chosen (case studies): (1) increase of trade/import of live animals towards Belgium, (2) increase of mortality rate of animals in Belgium, (3) increase of disease incidence in (an)other country(ies) and (4) geographical expansion of diseases in Europe and worldwide. The data sources related to these indicators were identified and were tested for easiness of data extraction, use and interpretation. It was concluded that these data are easy to extract, to use and to interpret, except for mortality data which are currently only on a quarterly basis available and which are sometimes of insufficient quality. The Scientific Committee recommends a transfer of mortality data of higher quality from the rendering company to the FASFC on a monthly basis. In the perspective of monitoring, a monthly analysis of the indicators is recommended.

The evaluation of the effectiveness of the monitoring of risk indicators has a high degree of uncertainty because the direct relationship with future events is difficult to determine in the frame of an opinion of the Scientific Committee. It is therefore recommended to develop a prospective effectiveness evaluation to assess whether status changes of indicators can help to predict an emergence of animal disease.

The Scientific Committee noted that many databases are available at the FASFC. They are interconnected, extended and highly structured. The Scientific Committee recommends to continue efforts to intensify the electronic interconnection between all the databases.

External data sources are also available online. These data sources are consulted by the FASFC in the context of health vigilance. The Scientific Committee recommends that these data are better exploited for trend watching in the context of forecasting and early warning.

This opinion should be considered as an initiative to propose a methodology to the risk managers for (generic) pre-alert signal detection in regard to the risk of emergence of animal diseases. The Scientific Committee recommends that this methodology be further developed by a dedicated team of experts in animal health risk assessment and crisis prevention. The Scientific Committee recommends to create a "threat analysis team" which periodically (e.g., monthly) (1) analyses the risk indicators based on automatically available data, (2) assesses the observed trends, (3) filters out some pre-alert signals, (4) issues the necessary pre-alert signals, (5) in case of pre-alert, assesses the risks in collaboration with external experts and (6) transfers confirmed alert signals to the risk managers.

The full text is available on this website in dutch and in french.