Economic evaluation of surveillance programmes

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Project funded by the Federal Veterinary Office, Bern, Switzerland

Introduction and aim

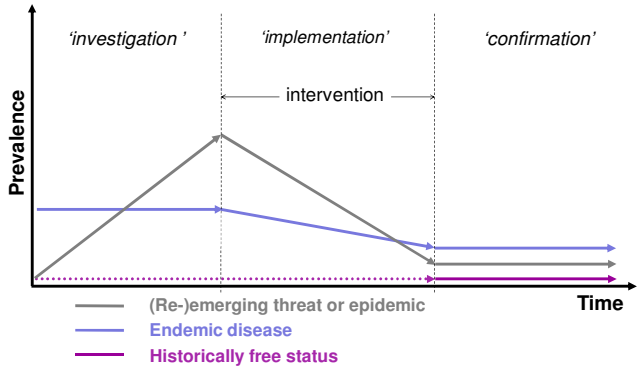
The project **aims** to develop a user-friendly algorithm to **support decision-making** and so facilitate the more **efficient allocation of scarce resources** for disease surveillance.

Sound economic evidence is needed to justify disease surveillance and control programmes because **resources are scarce** and governments must work within **limited budgets**.

The algorithm will allow the **comprehensive definition, documentation, and calculation** of all sources of **costs and benefits** for three classes of surveillance programme from which measures of **economic efficiency** are derived.

Surveillance

CLASSIFICATION



TYPE I – INVESTIGATION
Surveillance to detect re-emerging threats and to evaluate critical epidemiological indicators, such as the prevalence and incidence of disease. Examples: early warning systems, baseline surveys.

TYPE II – IMPLEMENTATION
Surveillance to inform control programmes with regard to the choice, timing and scale of interventions. Aims to categorise animals or farms eligible for control, to evaluate the progress and to document the success of an intervention.

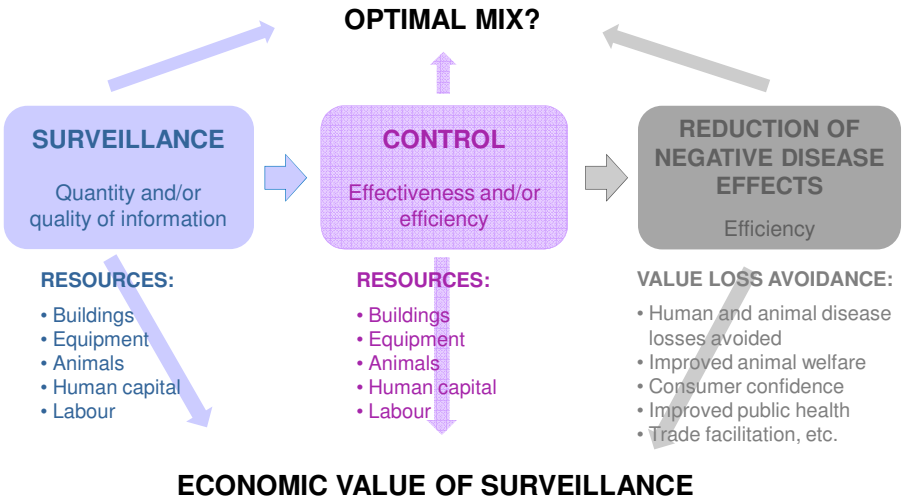
TYPE III – CONFIRMATION
Surveillance to confirm a final status after successful intervention, in case of historical freedom from disease or to ensure compliance with food safety legislation.

CONCEPTUAL FRAMEWORK

Surveillance and control contribute in tandem to **reduce negative disease impacts** and associated **value losses**.

Surveillance and control can be:

- **Substitutes:**
  Economic evaluation must identify the **economic optimum mix of surveillance and control activities** to achieve desired outcomes.
- **Complements:**
  Their effects cannot be separated and surveillance and control must be assessed in conjunction.



APPROACHES

TYPE I SURVEILLANCE

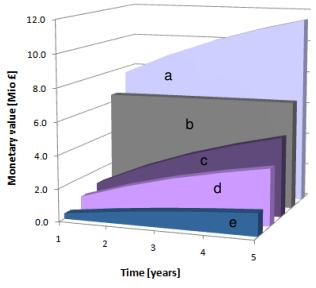
Epidemic disease: Estimation of the **aggregate economic loss at population level with and without surveillance** in place.

Endemic disease: Includes Type II considerations if the information collected is used to plan and implement control strategies.

TYPE II SURVEILLANCE

Total benefit (a) from surveillance and control- **costs of intervention (b)** = **upper limit of surveillance costs (c).**

Comparison with effective **surveillance costs (d)** provides an estimate of the **net benefit (e)** of surveillance and control.



TYPE III SURVEILLANCE

Imposed by national and international legislation which lays down technical specifications.

Given these constraints, economic evaluation reduces to **identifying the least cost strategy** for meeting them.

Outlook

Data will be collected to evaluate six Swiss surveillance programmes:

- ***Type I:*** **Avian Influenza**
- ***Type II:*** **Blue Tongue, Bovine Virus Diarrhoea, *Salmonella***
- ***Type III:*** **Import controls, surveillance of milk and milk products**

Finally, the algorithm will be available for use by decision-makers to help improve the economic efficiency of surveillance systems and decide priorities for fund allocation.