



Preparedness and Response to Emerging Veterinary Disease Outbreaks

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Economic aspects of vaccination – Analysis from the situation in The Netherlands

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Background : This presentation addresses the economic aspects of vaccination (*versus* no vaccination) in case of an outbreak of an Emerging Infectious Disease (EID). This will be illustrated by FMD as an example.

Vaccination can be an effective tool in the prevention, control and eradication of an emerging infectious disease and contribute to limiting the effects of an outbreak. Besides epidemiological, animal welfare and social aspects, policy makers have to take into account economic aspects into consideration when they are faced with the choice on whether to vaccinate or not to vaccinate.

In case of an outbreak of an EID losses occur at farm, sector (joint livestock farmers) and national economy levels. When evaluating the losses or costs of an epidemic different components can be distinguished:

- Direct costs related to the control of the epidemic
These include the costs for the infrastructure for the control of the epidemic, the cost associated with culling and destroying of infected and contact animals, the costs associated with destruction of feed and milk on detected farms, and the compensation and vaccination costs.
- Cost related to trade restrictions
An epidemic of FMD will result in trade restrictions that are related to the epidemic per se and do not depend on the specific characteristics of the control strategy chosen. However the duration of these restrictions can be affected by the strategy chosen.
- Ripple effects
The effects from outbreaks of FMD that are felt upstream and downstream along the livestock value chain-breeding, feed production, input supply, slaughter, processing, final sale and consumption.
- Spill-over effects
The effects from outbreaks of FMD on tourism and other services. Since other than typical agricultural production is becoming more important for the rural economy these spill-over effect are likely to become a large part of the total epidemic costs.

Differences in these costs that occur when applying control strategies with and without vaccination will be discussed. Typical costs related to vaccination are highlighted.

Generalizing the findings of the results presented in this presentation to other countries should be done with great care although the presented approach can be used by other countries to get insight into the ranking of optional control strategies.

Conclusions

- An economic analysis should be part of the policy assessment when vaccination is considered in the control of an EID.

Literature:

- Bergevoet, R. H. M., & van Asseldonk, M. A. P. M. (2014). Economics of eradicating Foot-and-Mouth disease epidemics with alternative control strategies. *Archivos de Medicina Veterinaria*, 46(3), 381-388. <https://doi.org/10.4067/S0301-732X2014000300006>