

## Chapter 26

### **An epidemiological and economic analysis of control strategies for HPAI outbreaks in the Netherlands**

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#### **Abstract**

In this chapter, combined epidemiological and economic modelling is used to compare control strategies for outbreaks of HPAI in densely and sparsely populated poultry areas in the Netherlands. Control strategies range from a basic EU minimum strategy to strategies containing additional measures including pre-emptive culling and/or ring vaccination or preventive vaccination of an area at risk. Strategies are compared according to the 5<sup>th</sup>, 50<sup>th</sup> and 95<sup>th</sup> percentiles of 500 simulated outbreaks for different epidemiological and economic indicators. The results suggest that ring vaccination in combination with pre-emptive culling is an attractive strategy from both an epidemiological and economic perspective. The performance of a particular strategy is dependent on the farm density in the area of virus introduction. Comparing different assumptions regarding vaccine capacity and effectiveness, it appears that improving capacity provides the most gain in controlling an epidemic. However, even with improved vaccination capacity, large outbreaks can still be expected in densely populated poultry areas.

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