

## Quantification of the Transmission Characteristics of Avian Influenza (H5N1 and H7N7) in Ducks

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The natural reservoir of influenza A viruses is considered to be in wild aquatic birds. Interspecies transmission events from the natural reservoir to other species are believed to be the source that spark outbreaks in poultry. Motivated by these observations we study the transmission characteristics of highly pathogenic H5N1 (A/2004/Indonesia) and H7N7 (A/2003/Netherlands) in ducks. To this end we resort to so-called "transmission experiments". In a transmission experiment, a number of artificially inoculated animals are placed in one cage with a number of contact animals, and the infection chain is monitored by taking blood samples, and samples from the trachea and cloaca. The data are analysed by final size methods and a generalized linear model based on a stochastic SEIR model. Based on the stochastic SEIR model, a systematic comparison will be made of the transmission characteristics (period of latency, infectious period, transmissibility, mortality) of H5N1 and H7N7 in vaccinated and unvaccinated ducks. We will discuss the implications of our results for the risk of interspecies transmission from ducks to poultry.