Assessment of H5N1 HPAI risk and the importance of wild birds

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Management of H5N1 HPAI outbreak risk needs to be based on a balanced assessment of the different factors influencing introduction and maintenance of infection in geographically defined populations, including trade and migratory wild birds. A key part of such a risk assessment is the development of risk pathway diagrams, which are then used to develop a qualitative or quantitative risk assessment model. An example of a qualitative risk assessment is presented here based on the risk of H5N1 HPAI introduction to Europe focused on migratory birds which was conducted by the European Food Safety Authority.

Quantitative risk assessments can be represented as knowledge- or data-driven models. Amongst these are multi-criteria decision making type models, where published as well as expert knowledge about risk factors are used to define different risk situations for H5N1 HPAI which can be geographically specific. Such models can be developed relatively quickly as they do not rely on collection of new data, and their outputs can therefore inform the development of risk management strategies fairly quickly. Regression models can be used for the same purpose, but will require data collection and therefore take longer to develop. Simulation models are used to describe the dynamics of H5N1 HPAI transmission. They are particularly useful for evaluating the impact of risk management strategies, but usually take some time to develop. Example applications of the different approaches will be presented.

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