Review of Vaccine and Vaccination Component in Global Avian Influenza Control Strategies

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Background

- The poultry production structure throughout the world varies with individual countries and has a profound impact on AI control strategies.

- First report H5N1 HPAI was mild disease in geese in Guangdong China (1996).

- H5N1 HPAI spread to cause infections and high death rates in poultry and wild birds in 62 countries throughout Asia, Africa, the Middle East, and Europe.

- This H5N1 HPAI outbreak has become the largest outbreak of HPAI in past 50 years.

- Some countries prevented introduction of the virus into poultry from wild birds by implementing specific biosecurity measures and/or targeted vaccination.
Background

• Some affected countries were successful at eliminating H5N1 HPAI through a traditional, stamping-out program in poultry operations/premises
• Some affected countries have entrenched or endemic H5N1 HPAI infections in poultry
  – Control programs focusing on lessening the economic burden and improving food security principally through national poultry vaccination campaigns and restructuring production systems
• Vaccination programs have been used against H5N1 HPAI in commercial poultry, village poultry and zoological birds
• No single strategy for AI prevention, control and eradication

Objective

Conduct an evaluation of the avian influenza vaccine and vaccination component used in global avian influenza control strategies
• Examine the role vaccination has played in both control and perpetuation of HPAI
• Determine how vaccination can be more effectively used in the future within HPAI control strategies.
• Use the data to develop strategies that can be used in the future against other HPAI viruses, and H5 and H7 LPNAI viruses
• One year secondment by David E. Swayne, U.S. Department of Agriculture, to OFFLU.
Materials and Methods

Three data sets will be collected and evaluated for the study:

– Conduct a review and evaluation of existing data on HPAI control strategies; emphasizing vaccines and vaccination
  • Peer literature
  • OIE databases
  • FAO reports

– Conduct a written survey of HPAI and LPNAI outbreak countries for information on how such outbreaks have been controlled or eradicated and the specific conditions for usage of vaccine and surveillance in the control strategy

– Conduct missions to selected countries and territories in Asia, Africa, Europe and North America with varying experiences in control of HPAI and LPNAI outbreaks, to collect additional data not contained in the existing databases or obtained via the written surveys

– Coordinate with the FAO on data collection, data analysis and report writing

– Communicate with FAO and WHO concerning the project on an ongoing basis
I. Collect and Review of Available Data

- Completed first review of HPAI outbreak data in WAHID and Handistats OIE databases and established access to historical information and archives at OIE
- Received several written reports from FAO country offices and consultants for inclusion in the evaluation
- Granted access to FAO EMPRES-I database

II. Country Surveys

- Two questionnaires were developed: short-survey (20 questions) and long-survey (short-survey plus additional 17 questions)
- Provided in English and/or French
- 79 countries were sent the surveys: short = 45, long = 34
- 56 (71%) surveys returned: short = 32 (71%), long = 24 (71%)
- Dr. Gounalan Pavade has joined the project to do Axxess database development, and input and analysis of the questionnaire data
Results

III. Country Interviews

- 16 countries have been selected for in country interviews for more detailed information and an additional 4 for conference call interviews
- 3 country interviews have been completed (Germany, Hong Kong and Indonesia) with some additional written information in the process
- Additional 3 have been scheduled (Spain, Portugal and Egypt) and 3 more countries (Thailand, USA and Vietnam) have requests waiting for CVO confirmation

Outcomes

- A final detailed written report of an assessment of vaccines and vaccination component in HPAI control strategies to be provided to OIE and FAO, including identifying weaknesses and strengths, and parameters of their use
- Two scientific manuscripts submitted to peer-reviewed journals for the wider scientific community’s and government’s use
- Recommendations for future research work to contribute to developing more effective control strategies and to be included in an OFFLU Animal Influenza Research Agenda