

Exercise 4

A Public-Health Investigation of Poultry on a Farm

Objectives:

- Assess clinical symptoms among poultry for index of suspicion of AI infection
- Prioritize response actions with partner agencies
- Evaluate biosecurity measures during an outbreak

Instructions:

For this exercise, you will work with your group to complete a case study investigation. Each segment of case study information will be followed by a series of questions. Your facilitator or one person in your group should read the information aloud to group members. Then, work as a group to generate one answer for each question asked.

Time allotted: 30 minutes

The Situation

You are a public-health officer in a rural part of the country. This is an area where there are many moderate and large poultry operations. You get a courtesy call from the local office of the State Agriculture Department saying that a particular layer operation of 30,000 chickens has recently experienced a large number of die-offs. Over a six day period of time, over 20% of the poultry have been found dead. This farm has an excellent record for vaccinating its flock for the recommended diseases. The office is concerned that this illness could be something unusual and potentially hazardous not only to other poultry farms, but to poultry workers and possibly the public as well.

Question 1 – What types of diseases, for which poultry are not typically vaccinated, cause large die-offs in a short period of time?

Additional Background

The symptoms include a large decline in egg production, swollen wattles and combs, and strange hemorrhages under the skin. The farmer also reports that some poultry were found dead with no apparent symptoms. The farmer has said that this illness has seemed to come on very swiftly with no previous illness in the flock within the last month. The symptoms were first reported by the farmer to his veterinarian; the veterinarian contacted the State Agriculture Department. The State Agriculture Department, in turn, contacted the Area Veterinarian in Charge (AVIC) and that office's Foreign Animal Disease Diagnostician (FADD).

Question 2 – Would you be worried about HPAI at this point?

Current Conditions

Of the animals at this particular operation, approximately 95% of the visibly ill layers have died. The farmer is worried about continued die-offs and asks for help trying to figure out what to do. He is worried about the rest of his flock, as well as the potential income loss from any type of outbreak situation.

Question 3 – How would you begin your public health investigation, and how would your investigation overlap with that done by State Agriculture and the AVIC/FADD?

Question 4 – If you were to visit the farm to participate in the investigation, what biosecurity measures should you take to ensure that the virus is not spread off the farm (by you)?

Discussion Question – In your jurisdiction, is there a protocol or understanding in place between the Departments of Public Health and Agriculture as well as federal veterinarians for investigations concerning avian influenza on a poultry farm?

Additional information

You, a representative from the Department of Agriculture, and the Foreign Animal Disease Diagnostician talk to the farmer. He tells you that he recently (in the last 2 weeks) obtained some new stock from a company that he has been using for over 10 years. His operation is not all-in all-out. The building where the poultry live is well constructed with no access possible to the outside environment. The flock is fed and watered with no possible contamination from wild birds outside the premises. No one in his family or crew appears to be ill at this time. You also inquire into the human, poultry, and wild bird HPAI surveillance and there has been no reported activity in your immediate area. There have, however, been reports of a confirmed case of HPAI H5N1 in a duck in another nearby part of the country.

Question 5 – What does this information tell you?

Question 6 – At this point, would you involve other national organizations in your investigation?

Testing

The State Department of Agriculture is assisted by the USDA to institute quarantine and movement control procedures on the farm in question. They immediately begin testing of the flock for foreign animal diseases of concern.

Question 7 – You are to be involved in carrying out testing and quarantine, if necessary. What are your suggestions to the farmer and his family as to their risk of infection? What other individuals should you be concerned about testing and/or counseling?

Question 8 – As a public health responder, what other activities should you undertake immediately, before conclusive test results come back from the laboratory?

Conclusion

The next day, the results come back. The illness in question is determined to be Exotic Newcastle Disease. Several other farms in the area have become infected also at this point. The affected flocks are being depopulated. The USDA determines that the index case occurred in an animal shipped to the farmer from his supply company. Since this disease is not a threat to humans, you are relieved for the farmer and his family (and, if necessary, recommend discontinuation of oseltamivir). However, you wonder about the one positive case of H5N1 HPAI that had been found in another part of the country.

Question 9 – If the disease in question had turned out to be HPAI, how do you think that the investigation would have continued?