Risk assessment for the incursion of H5N8 Highly Pathogenic Avian Influenza into poultry premises during the spring to summer season

Qualitative Risk Assessment

Update: June 2017
Background

This is an update to the previous risk assessment published on 11 May 2017. Updates are made in blue.

The avian influenza prevention zone (AIPZ) in place in England required heightened biosecurity measures to be put in place across all poultry and captive bird holdings, regardless of commercial activity. Alongside the AIPZ requirement, the general licence for holding gatherings where galliforme or anseriforme poultry are present has also been taken out of general use. This was based on the knowledge that outbreaks or cases of highly pathogenic avian influenza had been reported in the UK. By the middle of April, all control zones have been lifted, there had been no further findings in wild birds since March, the migration of wild waterfowl into the UK had stopped and the situation in Europe had improved in the last month. However, that situation changed in May 2017 and 2 new cases in non-commercial poultry were reported in Lancashire, close together and in a Higher Risk Area. It is likely that direct or indirect contact with infected wild birds was the source of infection for the new cases. As a result, an AIPZ was kept in place in the region around the Lancashire cases, but it was extended beyond the HRAs to account for the presence of resident wild waterfowl. A further case in a smallholding in South Norfolk was reported in June, but the likely date of incursion was early May and again the source was considered to be wild birds. This case has no bearing on the decision around the AIPZ still in place.

Therefore we should review the risk assessment and specifically whether it is appropriate to maintain the AIPZ across the limited area in Lancashire, Cumbria and Merseyside. The risk questions and risk pathways essentially stay the same, but the evidence base has changed in the time since the cases in Lancashire were detected.

Terminology related to the assessed level of risk

For the purpose of the risk assessment, the following EFSA terminology will apply

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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<tbody>
<tr>
<td>Negligible</td>
<td>So rare that it does not merit to be considered</td>
</tr>
<tr>
<td>Very Low</td>
<td>Unlikely to occur</td>
</tr>
<tr>
<td>Low</td>
<td>Rare, but may occur occasionally</td>
</tr>
<tr>
<td>Medium</td>
<td>Occurs regularly</td>
</tr>
<tr>
<td>High</td>
<td>Occurs very regularly</td>
</tr>
<tr>
<td>Very High</td>
<td>Is almost certain to occur</td>
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</table>
Risk question

What is the risk of incursions into poultry farms of Highly Pathogenic Avian Influenza (HPAI) H5N8 from contact with resident wild waterfowl.

This can be expressed as two separate questions around the entry of H5N8 HPAI into resident wild waterfowl and the exposure of poultry to infected resident wild waterfowl.

The risk level associated with the contact with resident wild waterfowl is used to inform the need for further control zones or prevention zones in areas at particularly high risk.

Hazard identification

Avian Influenza viruses may have a variable clinical outcome in many different species of wild birds, including dabbling ducks, diving ducks, swans, geese, game birds, raptors and gulls. The recent epizootic of H5N8 HPAI has caused many wild bird die-offs in regions in Europe. The detections of this virus in GB in wild birds as well as poultry farms are strongly suggestive that the virus was present in wild birds in GB. The recent outbreaks in smallholdings, which occurred since the housing order was lifted and after the majority of wintering migratory wild birds had left the country, suggest virus is circulating in resident non-migratory wild waterfowl. The risk to such water birds from environmental contamination may have decreased across the country more generally due to increasing ambient temperatures and increasing hours of sunlight in addition to fewer migrant birds coming in from H5N8 endemic areas in northern Eurasia. The variety of wild bird species and poultry breeds affected in the current epizootic is greater than for previous outbreaks of highly pathogenic avian influenza viruses and although infection in some wild bird species has caused clinical signs and mortality, it is not known how many or which species are acting as reservoir species.

The three new cases in smallholdings with, for at least two, known contact with resident wild mallards lend credence to the theory that disease is present in wild waterfowl. However, it is also known that the avian influenza viruses can persist for several weeks even at relatively high temperatures, in certain media like pond water, silt and even brackish water.

The level of reporting of both poultry cases and wild bird findings has significantly dropped in the past month across Europe. Sporadic cases are still reported, which is to be expected, but in the last two weeks a handful of outbreaks have been reported in the EU (Italy in fattening turkeys, Belgium and Luxembourg [four outbreaks linked through a market]), excluding the new case in the UK and wild birds in Germany and Italy.
**Entry assessment**

The entry assessment considers the likelihood of the hazard being present in the wild birds, either migratory or resident birds.

As with our previous risk assessment, we still consider the risk to be medium with low uncertainty. This risk level is unlikely to decrease much more over the coming weeks, as the migration season will start again in a few weeks (August is usually the earliest date for arrival of winter migrants from Eurasia).

For more in-depth information, see previous iterations of this assessment.

**Presence of infection in wild resident waterfowl**

The threshold for reporting wild birds found dead for testing was reduced so that singleton birds may be reported and tested. However the reports of dead wild birds have not increased and this is now considered a very low sensitivity surveillance system at this time of year.

Therefore, we consider that the risk of resident wild waterfowl being infected with H5N8 is **Medium with low uncertainty**. For migratory wild waterfowl the risk is **Low with low uncertainty** because the majority of these birds have now left the country while the new spring migration season involves birds which are unlikely to act as reservoir species.

**Exposure assessment**

As with our previous risk assessment, we still consider the risk to be medium to low depending on the level of biosecurity on farm. The time which has elapsed since the incursions and improving weather suggests the risk for this AIPZ is no longer higher than the surrounding area. For more in-depth information, see previous iterations of this assessment.

An AIPZ, as shown in the map, was kept in place around the Lancashire cases which covered districts in Merseyside, Lancashire and Cumbria, and enhanced biosecurity was required in this area, but not housing. The latest case (IP13), reported in June in South Norfolk has no bearing on this AIPZ and agreement was reached that a new one would not be put in place around IP13 because of the time of year and the length of time elapsed since disease incursion.
The housing requirement for poultry and captive birds was lifted in mid-April, and the three smallholdings (Lancashire and Norfolk) were infected not long after this date. Most importantly, no further disease spread was identified in the control zones around IP11 and IP12 and these zones were lifted on the 7th May at 00:01.
Overall exposure risk

The overall risk is determined by the likelihood that infection remains in the resident wild waterfowl, the virus persistence in the environment and the exposure to poultry. We have no way of knowing when infection is no longer present in wild birds, while the perceived increased risk around the two cases in Lancashire was addressed with an extended AIPZ. However, given the time period which has elapsed since the outbreaks were confirmed, the level of surveillance in the control zones and the improving temperature, the risk is now considered to have decreased, to a level present across other parts of GB, given that there are resident wild waterfowl found ubiquitously.

Given the medium risk of resident wild waterfowl being infected with H5N8 HPAI, we consider that the overall risk of exposure to poultry is **Low to Medium but this will depend on the biosecurity measures on a farm.**

Consequence assessment

Please see previous iterations of this assessment for a more in-depth analysis.

It is important to note that every outbreak confirmed, whether in commercial or non-commercial poultry, are treated the same with respect to the trade impacts and loss of disease free status.

Overall assessment

<table>
<thead>
<tr>
<th>Risk Assessment Stage</th>
<th>Qualitative Score</th>
<th>Quality of evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entry Assessment (1) – incursion from a <em>migratory</em> wild bird</td>
<td>Low</td>
<td>Very good</td>
</tr>
<tr>
<td>Entry Assessment (2) – incursion from a <em>resident</em> wild bird</td>
<td>Medium</td>
<td>Expert evidence and limited surveillance.</td>
</tr>
<tr>
<td>Exposure Assessment</td>
<td>Low (but dependent on biosecurity and preventing access to wild birds)</td>
<td>Expert evidence for effective biosecurity measures; latest cases happened over a month ago from wild bird contact</td>
</tr>
<tr>
<td>Consequence Assessment</td>
<td>Medium</td>
<td>Good</td>
</tr>
<tr>
<td>Overall Assessment</td>
<td>Low</td>
<td><strong>Overall good evidence but medium uncertainty</strong></td>
</tr>
</tbody>
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Data gaps

There were a number of data gaps in this risk assessment, the most important being:

- Prevalence of H5N8 among wild birds in the Prevention Zone and outside of it.
- Persistence of H5N8 in the environment – heterogeneous risk level depending on the environmental conditions and level of resident wild bird infection and opportunity for interaction.

Conclusion

This assessment looks at the risk of further poultry or captive bird outbreaks of H5N8 HPAI, given the reduction in cases in Europe and the lifting of disease control zones in GB. There is a lack of data, but given that there is a medium risk of wild bird infection still being present in some areas of GB and the potential for occasional outbreaks to continue to occur, it was determined that the overall risk should be assessed as low, which is defined as “outbreaks are rare but can occur occasionally” (although the time period for this is not defined, we would suggest this is over the spring / summer until the next migration season). We consider this overall risk level has not changed, but there is expected to be some geographical variation in this risk level across GB, depending on the proximity to wild waterfowl, the relative density of smallholder production, the level of biosecurity on the holding and a recent history of disease incidents in the area.

The AIPZ in Lancashire, Cumbria and Merseyside was put in place to account for the residual risk from resident wild birds in an area where there had been a number of cases of H5N8 and where a large number of migratory waterfowl could have given rise to substantial environmental contamination during the 2016 winter. These criteria have reduced with time and the lifting of the control zones with no further cases is also evidence for the risk to have decreased to closer to the levels across the rest of GB.

Review History

08/06/2017: Paul Gale, Amie Adkin, Ignatius McKeown, Paul Honeyman, Christina Papadopoulou, Andy Paterson and Ian Brown. All comments accepted / addressed.