Disease report

Since our last update on 8\textsuperscript{th} August 2017, there have been no further cases or findings in the UK. All C&D has been completed and we have self-declared to the OIE that the UK is free of HPAI, as of 13\textsuperscript{th} September 2017.

In Europe, reports of H5N8 HPAI have continued in a number of countries. Italy has reported seven more outbreaks of H5N8 HPAI in Mantova, Pavia, Lodi, Verona, Cremona and Padova. The poultry involved included mostly fattening turkeys, but also gamebirds and domestic geese and one smallholding. In all cases, disease control measures are in place; most introductions are considered to be primary incursions with little secondary spread observed. Wild birds positive for H5N8 HPAI have been reported in Italy (Bergamo; a common shelduck, \textit{Tadorna tadorna}), in Switzerland at three sites in mute swans \textit{(Cygnus olor)} and mallards \textit{(Anas platyrhynchos)} and in mute swans in Germany in Sachsen Anhalt.
Elsewhere, the H5N8 HPAI virus also continues to be reported in South Africa, where it has now been reported in several regions and several poultry types. Notably, several commercial ostrich farms in Western Cape Province and recently in Eastern Cape Province in a layer farm which is part of an integrated poultry producer. The FAO has produced a situation update as part of the quarterly bulletin for the southern Africa region (FAO, 2017). This highlights the vulnerability of this region for low income households which rely on smallholdings of poultry for food security and therefore how important it will be for the authorities to provide support and advice to poultry keepers. The disease is circulating in wild birds, and to date several species have tested positive, including several Sacred Ibis (Threskiornis aethiopicus), blue cranes (Grus paradisea), a house sparrow (Passer domesticus), a peregrine falcon (Falco peregrinus), an African rock pigeon (Columba guinea), and a spur winged goose (Plectopterus gambensis). Of these wild birds, several are long range migrants. The viruses responsible are closely related genetically to those affecting Central Asia, Europe and elsewhere in Africa (West and NE).

In South East Asia other avian influenza serotypes continue to be reported, including H5N1, H5N2, H5N6 as well as H5N8. Notably, H5N6 HPAI was reported in the Philippines which was the first report of any HPAI virus detected in the islands and is another indication that this virus belonging especially to clade 2.3.4.4, has now become established in South East Asia but it also spreading further globally than previous clades.

Situation assessment

Several recent papers have looked at the evolution of the 2.3.4.4 clade of H5 viruses and have concluded that migratory birds play an important role not just in the long range dissemination of the viruses but also in terms of their evolution. Continuous genetic mixing
of HPAI viruses in wild birds including with LPAI viruses is resulting in increased genetic diversity at whole genome level. Furthermore, the contact between wild birds and poultry in many environments (direct or indirect) leads to virus transmission in both directions, with further opportunity for virus evolution via genetic re-assortment once within poultry, particularly at live bird markets. The rapid evolution of the viruses may manifest in a change in infection kinetics affecting pathogenicity, transmission and host range, an increased affinity for human cells or the evolution of new clades. It highlights the importance of maintaining strong surveillance programmes as well as sharing data on virus sequences and summary disease statistics in a timely manner (He et al., 2017; Takemae et al., 2017).

From the European perspective, not only is it clear that H5N8 HPAI has continued to persist in the environment and potentially in indigenous populations of wild birds at local level over the summer in some regions so therefore is likely to continue to cause risk of disease incursions into poultry farms with insufficient biosecurity but it is also clear there are other threats to consider. Wild bird migration season is starting which will bring birds from their breeding grounds in Central and North Eurasia to Europe for wintering. Any extreme cold weather in the coming months will drive those birds inland and further west. Last year, the first cases of H5N8 HPAI were observed in the middle of October to early November. The potential for new incursions to Europe of H5N8 with these wild bird populations are real. This year, the cases in wild birds and poultry are already occurring. It is also important to note the pattern of H5N8 HPAI emergence in 2014 when the virus was observed in Japan and South Korea in wild birds and a few months later it was detected in Europe and North America. If the same pattern of wild bird transmission occurs this year, we might expect to see expansion in the range of H5N6 HPAI potentially to similar areas, as it was reported in high numbers of migratory wild birds in Japan over the summer together with waves of infection in poultry in the Republic of Korea. This virus has some affinity for human cells unlike H5N8 HPAI virus, therefore public health issues will also need to be considered carefully.

**Conclusion**

The overall risk level for the UK is still at present considered to be “LOW”, which is our normal year-round background risk level, given avian influenza viruses are usually circulating at a low level in wild waterfowl. Therefore, the risk for poultry also remains “LOW” for introduction of infection onto individual premises, but will depend on levels of biosecurity. This level is likely to increase in the next month or so, and as it can also be driven by changing weather conditions, which we will also be monitoring closely in collaboration with the Met Office.

We strongly recommend that all poultry keepers (including backyard keepers) review their biosecurity measures and business continuity plans now, as the risk level may well increase in the coming weeks. They should familiarise themselves with government guidance on good biosecurity and how to report suspicion of disease appropriately.

We ask that the public use the Defra helpline (Tel: 03459 33 55 77) to report findings of dead wild birds. In particular, any wild ducks, wild geese, swans, gulls or birds of prey and where more than five birds of any species are found dead in the same location.

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References


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