Department for Environment, Food and Rural Affairs
Animal and Plant Health Agency
Animal Health and Welfare Advice - International Disease Monitoring

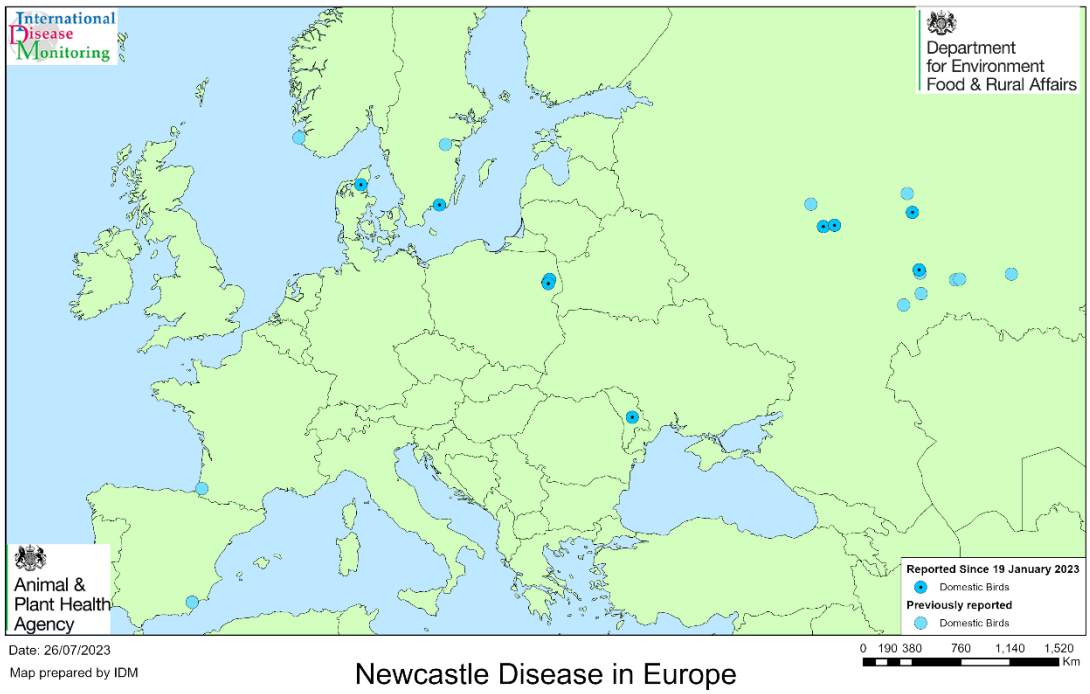
Preliminary Outbreak Assessment

Newcastle disease in Europe

25th July 2023 Ref: ND in Europe

Disease Report

In July 2023, an outbreak of Newcastle Disease (ND) caused by virulent avian paramyxovirus type 1 (APMV-1) was reported in commercial poultry at 4 premises in Bayonne near Bialystok, Podlaskie Voivodeship in western Poland, close to the border with Belarus (WOAH, 2023). The first report on 12 July 2023 was on a commercial premises with over 43,000 hens raised for slaughter. On 24th July 2023, 3 more infected premises were reported to WOAH. Of these, 2 were on commercial farm premises with 28,500 and 3,210 poultry, and 1 was on a backyard premises with 81 birds. Bird types for these premises were not reported. These are the first outbreaks of ND reported in domestic poultry in Poland since December 1971. In all cases, disease control measures involving movement control, zoning, disinfection and stamping out have been applied, with surveillance to be implemented in accordance with provisions of Regulation (EU) 2016/429 and Commission Delegated Regulation (EU) 2020/687. No sources of infection have been identified, with epidemiological investigations ongoing.



Newcastle Disease in Europe
July 2022 - July 2023
(WOAH Data Only)

Since our last assessment in January 2023, there were 7 other outbreaks of ND reported by the World Organisation for Animal Health (WOAH) across Europe. One of these outbreaks was on a commercial farm premises in Sweden in January 2023 on a premises with 5,000 laying hens. Another outbreak occurred in June 2023 was on an allotment with 37 owners in Denmark, containing around 600 pigeons, hens, canaries, parrots and other ornamental birds. One outbreak was on a backyard premises in Moldova with 73 pigeons, and the remaining 4 outbreaks occurred on backyard premises in western Russia with fewer than 25 unspecified birds. There has also been one outbreak in Austria, according to available ADIS summaries (ADIS 2023) although no further information is available as these outbreaks have yet to be reported to WOAH.

Situation Assessment

Newcastle Disease is a serious, notifiable disease of poultry which can cause large losses in unvaccinated domestic poultry, particularly chickens. It is considered endemic in many countries in Central and South America, Asia, the Middle East and Africa and is occasionally reported in Europe most often in backyard systems in the east. The causative agent, virulent forms of APMV-1; (also known as avian orthoavulavirus-1, and formerly known as avian avulavirus-1) is highly variable in its ability to infect different avian species and to cause differing severity of disease. The most virulent forms cause an acute, lethal infection in chickens and is referred to as Newcastle disease virus (NDV). Incursions of pigeon paramyxovirus type 1 (PMV-1) into poultry from pigeons are also classified as NDV. In terms of diagnostic tests, the intracerebral pathogenicity index (ICPI) is the gold standard for pathogenicity determination and often velogenic (highly virulent) viruses have an ICPI approaching 2.0 (meaning that all infected birds die within 24 hours) (Bello et al. 2018). Infected birds may also shed the virus in their faeces and saliva, contaminating the environment. NDV is transmitted most often by direct (beak-to-beak) contact with diseased or carrier birds. Transmission can also occur by indirect contact with infected birds, via faeces and respiratory discharges, or by contaminated food, water, equipment, and human clothing. The outbreaks of ND that occurred across Belgium over a period of six weeks in 2018, which included two commercial and ten hobbyist poultry keeper premises, demonstrate how rapidly the disease can spread when present (https://www.gov.uk/government/publications/newcastle-disease-in-belgium).

Several genetic lineages within the APMV-1 group of viruses have been reported in recent years in the European Union (EU). Amongst the virulent strains are the genotypes VII (or lineage ‘5’), XIII (5b lineage), and VI (lineage 4) which is primarily associated with pigeons. A previously unknown subgroup of genotype VII emerged in Europe in 2013 and subsequently spread, being associated with outbreaks in Bulgaria, Romania and the Republic of Cyprus. The rapid spread of ND virus genotype VII (lineage ‘5a’), shown to have derived from the Middle East/Central Asia region, was assumed to be as a result of human activity through movement of infected poultry and contaminated fomites rather than wild bird mediated spread (Fuller et al, 2015) but has largely been associated with

‘backyard’ production. Anecdotally, an epidemiologically linked ND virus has been reported in flocks that were ND vaccinated in Pakistan, but substantive data is either limited or lacking.

Newcastle Disease is a mild zoonosis (disease of animals that can also infect humans) and can cause conjunctivitis in humans, but the condition is generally mild and self-limiting.

Poland and Denmark have applied disease control measures in the affected zones in accordance with EU rules, while other areas retain their disease-free status. The rules prevent trade in pheasants, poultry and other commercial or pet birds from areas under restriction or in meat derived from such birds. Poultry meat products can be traded only if they are first subjected to treatment sufficient to destroy the virus. Table eggs can be traded from holdings not under suspicion of being infected, subject to normal community hygiene rules. All European Member States except Sweden, Finland and Estonia apply a prophylactic vaccination policy. Vaccination of poultry against ND is not practised in Sweden. Vaccination of poultry against ND is recommended and practised in the UK (Defra 2019). In terms of trade, there have been no consignments of live poultry received in the United Kingdom from Poland or Denmark in June or July 2023. In July 2023, there were 1,816 consignments of meat of chickens received in the United Kingdom from Poland, and 2 from Denmark, according to the Import of products, animals, food and feed system (IPAFFs).

The predominant route of entry of ND into the UK would be through trade in live poultry, although there are many wild bird species that can host ND. The precise host range of this virus is uncertain. PPMV-1 is thought to be endemic in Columbiformes world-wide and pigeons (Columbiformes) are known to be susceptible, but susceptibility for other bird orders vary with waterfowl (Anseriformes), gulls (Charadriiformes) and passerine birds (Passeriformes), as well as cormorants (Suliformes) known to be affected (WOAH, 2013; Karamendin and Kydyrmanov, 2021). Gamebirds also vary in susceptibility and do present a theoretical pathway for introduction via trade; imported pheasants were proven to be the source of an outbreak in southern England in 2005 (Aldous et al. 2007).

The overall risk of introduction of ND to the UK is considered to be **Low** and there is no evidence of reduced efficacy of the vaccines currently used for poultry in the UK.

Conclusion

The WOAH has reported an outbreak of ND on commercial and backyard poultry premises in Poland. There has also been an outbreak of ND reported in Denmark on a mixed species premises, including pigeons.

As the variety of species of wild bird that may be susceptible and may act as a reservoir for ND is wide, we generally consider there is a constant low risk of introduction of APMV-

1 into the domestic poultry sector. It is recommended that poultry keepers consider vaccinating their flocks. Vaccines for ND with marketing authorisations are commercially available in the UK and vaccination is common in most, if not all, commercial layers, layer breeders and broiler breeders. It is also common in most turkey breeders and some commercial turkeys and broilers (DEFRA 2019). The risk of introduction of ND to the UK is considered to be unchanged, at **Low**. Disease may be introduced via trade, wild birds or fomites and these events highlight the background risk to commercial poultry from feral pigeons as potential carriers of ND.

We will continue to monitor the situation closely, as this is an important exotic disease which will be a concern for Europe in terms of its ability to spread and the impact on poultry.

Authors

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