

Preliminary Outbreak Assessment

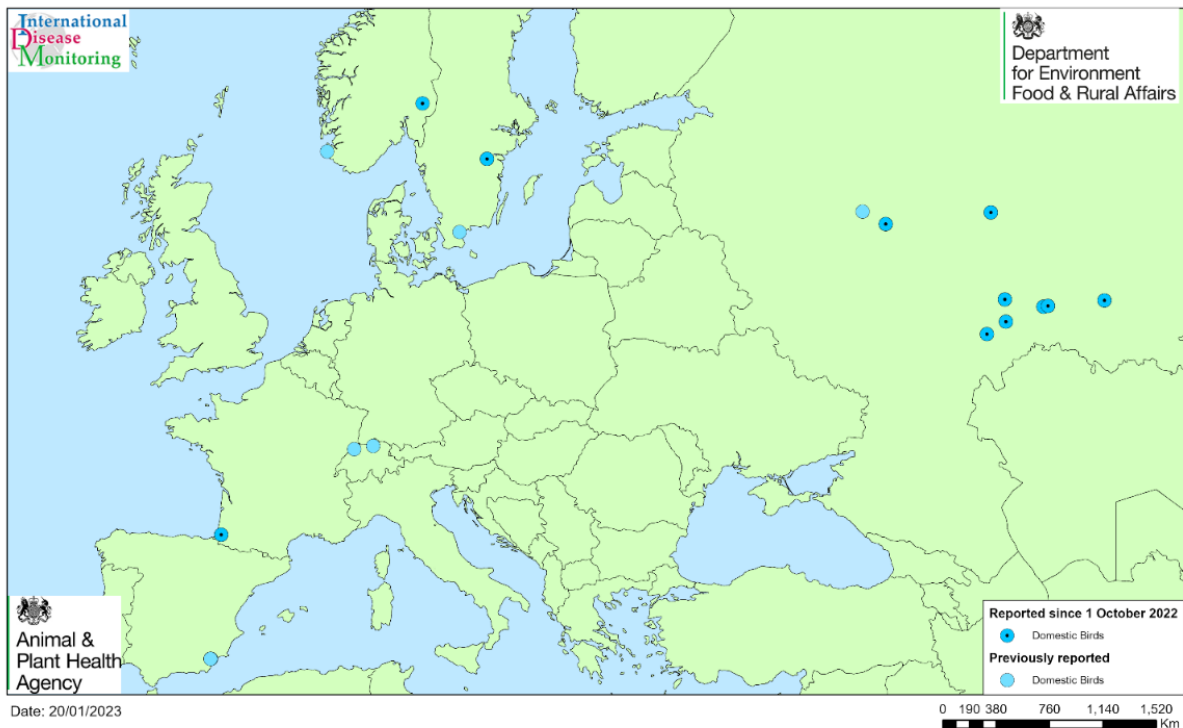
Newcastle disease in Europe

19th January 2023

Ref: ND in Europe

Disease Report

In January 2023, an outbreak of Newcastle Disease (ND) caused by virulent avian paramyxovirus type 1 (APMV-1) was reported in commercial poultry at a premises in Bayonne in the Basque Country region of southwest France, close to the border with Spain (WOAH, 2023). The premises contained 1,600 broiler pigeons, comprising a mixture of pigeon pairs and squabs (immature pigeons younger than around four weeks old). Disease was detected following clinical signs and approximately 200 deaths. This is the first outbreak of ND reported in domestic poultry in France since December 2017, when a premises with 12,000 broiler pigeons in the department of Nord, near the border with Belgium, was confirmed. Disease-free status of the zone was restored in March 2018. Also in January, a further outbreak was reported in Norway, around 73 km northeast of Oslo, in an unvaccinated private pigeon flock of 100 birds (ADIS 2023; PAFF 2023). In both cases, disease control measures involving movement control, zoning, disinfection and stamping out have been applied, with surveillance to be implemented in accordance with provisions



Newcastle Disease in Europe
January 2022 - January 2023

of Regulation (EU) 2020/687. No sources of infection have been identified, with epidemiological investigations ongoing.

[Since our last assessment in September 2022](#), there were nine 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 Linköping, Sweden on a premises with 14,000 laying hens. Another outbreak was on a commercial premises with over 9,000 birds in Samara, Russia . The remaining seven outbreaks occurred on backyard premises in western Russia with fewer than 100 birds.

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 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.

France and Norway 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 Norway and the whole country is considered free from ND (EFTA Surveillance Authority, 2021). Vaccination of poultry against ND is recommended and practised in the UK (Defra 2019). In terms of trade, there have been nine consignments of live poultry received in the UK from France since 01 December 2022, all of which involved chickens which were either day-old chicks, or grandparent and parent female chicks, from the north of the country. There were also 20 consignments of meat of domestic pigeons received in the UK from France. There have been no consignments of live poultry received in the UK from Norway since 01 January 2022.

An outbreak of ND in Norway was also reported in September 2022 (<https://www.gov.uk/government/publications/newcastle-disease-in-norway>). These outbreaks, along with the detection in wild city pigeons in Oslo in late August suggests possible infection pressure from wild birds in Norway.

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) known to be affected (WOAH, 2013). 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). There have been no live gamebirds received by the UK from France since December 2022.

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 WOAHA has reported an outbreak of ND at a commercial pigeon premises in France. An outbreak on a non-commercial pigeon premises in Norway has also been reported by ADIS.

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

Dr Sonny Bacigalupo
Dr Lorna Freath
Dr Craig Ross
Prof Ian Brown
Dr Lauren Perrin

References

ADIS (2023) Overview report from 1 January 2023. Available from https://food.ec.europa.eu/system/files/2023-01/ad_adns_outbreaks-per-disease_0.pdf (accessed 20 January 2023)

Aldous, E & Manvell, R & Cox, W & Ceeraz, V & Harwood, D & Shell, W & Alexander, D & Brown, I.H.. (2007). Outbreak of Newcastle disease in pheasants (*Phasianus colchicus*) in south-east England in July 2005. *The Veterinary record*. 160. 482-4. 10.1136/vr.160.14.482.

Annaheim D, Vogler BR, Sigrist B, Vöggtlin A, Hüssy D, Breitler C, Hartnack S, Grund C, King J, Wolfrum N, Albini S (2022). Screening of Healthy Feral Pigeons (*Columba livia domestica*) in the City of Zurich Reveals Continuous Circulation of Pigeon Paramyxovirus-

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

1 and a Serious Threat of Transmission to Domestic Poultry. *Microorganisms*. 10(8):1656.
<https://doi.org/10.3390/microorganisms10081656>

Bello MB, Yusoff K, Ideris A, Hair-Bejo M, Peeters BPH, Omar AR (2018). Diagnostic and Vaccination Approaches for Newcastle Disease Virus in Poultry: The Current and Emerging Perspectives. *Biomed Res Int*. Aug 5;2018:7278459. doi: 10.1155/2018/7278459. PMID: 30175140; PMCID: PMC6098882.

Defra (2019) Notifiable avian disease control strategy for Great Britain. Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/834770/avian-disease-control-strategy1.pdf (Accessed 20 January 2023)

EFTA Surveillance Authority (2021) EFTA surveillance authority decision of 21 April 2021. Available from <https://www.eftasurv.int/cms/sites/default/files/documents/gopro/Decision%20regarding%20approval%20of%20disease-free%20and%20non-vaccination%20statuses%20and%20eradication%20programmes%20in%20accordance%20w.pdf> (Accessed 20 January 2023)

Fuller, C., Londt, B., Dimitrov, K.M., Lewis, N., van Boheemen, S., Fouchier, R., Coven, F., Goujgoulova, G., Haddas, R. & Brown I. (2015) An epizootiological report of the re-emergence and spread of a lineage of virulent Newcastle disease virus into Eastern Europe. *Transboundary Emerging Disease* 64: 1001-1007.

PAFF Animal Health and Welfare committee meeting (2023) Outbreak of Newcastle disease in captive birds in Norway. Norwegian Food Safety Authority (NFSA). Available from https://food.ec.europa.eu/system/files/2023-01/reg-com_ahw_20230117_nd_nor.pdf (Accessed 20 January 2023)

Norwegian Veterinary Institute (2022) Infectious virus detected among pigeons in Oslo. Available from <https://www.vetinst.no/nyheter/smittsomt-virus-pavist-blant-duer-i-oslo> (Accessed 20 January 2023)

WOAH (2013) Technical disease card: Newcastle Disease. Available from https://www.woah.org/fileadmin/Home/eng/Animal_Health_in_the_World/docs/pdf/Disease_cards/NEWCASTLE_DISEASE.pdf (Accessed 30 September 2022)