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SCIENTIFIC REPORT

Surveillance of West Nile virus infections in humans and animals in Europe, monthly report – data submitted up to 3 December 2025

European Centre for Disease Prevention and Control (ECDC), European Food Safety Authority (EFSA)

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Epidemiological summary

In 2025, and as of 3 December, 14 countries in Europe reported 1 112 locally acquired[1] human cases of WNV infection. The earliest and latest date of onset were on 19 May 2025 and 27 October 2025, respectively. Locally acquired cases have been reported by **Italy** (779), **Greece** (96, of which 1 with unknown place of infection), **France** (62), **Serbia** (62), **Romania** (49), **Spain** (36), **Hungary** (14), **Croatia** (4), **Albania** (3), **Germany** (2), **North Macedonia** (2), **Bulgaria** (1), **Kosovo*** (1) and **Türkiye** (1). In Europe, 97 deaths were reported.

Case numbers reported this year were above the average for the past decade (758). However, these figures remained lower than those seen in 2018, 2022, and 2024 – years when virus circulation was particularly intense, with over 1 300 cases reported.

This year, Italy experienced a large outbreak, with 779 confirmed human cases, including 72 fatalities (case fatality rate of 9.2%, which is within the expected range). This is the highest number of human WNV cases reported by Italy in a year. Most cases (267) were reported from the Lazio region (Latina, Roma and Frosinone), followed by 133 cases reported by the Campania region (Napoli, Caserta, Salerno and Avellino). Other regions reported similar numbers as in previous years. Furthermore, France reported more cases than in any previous year and 14 regions reported cases for the first time ever.

As of 3 December 2025, locally acquired human cases of WNV infection were reported in 157 regions across 14 countries. This compares with 188 regions across 18 countries in 2024. All 14 countries had previously reported human cases of WNV.

[1] Locally acquired cases refer to cases acquired within the reporting country.
In this report, Europe refers to EU/EEA countries and EU-neighbouring countries (Albania, Bosnia and Herzegovina, Kosovo*, Montenegro, North Macedonia, Serbia and Türkiye).
*This designation is without prejudice to positions on status and is in line with UNSCR 1244/1999 and the ICJ Opinion on the Kosovo declaration of independence.

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This year, 35 regions reported human cases of WNV infection for the first time ever: by **Italy** in Genova (ITC33), Sondrio (ITC44), Avellino (ITF34), Brindisi (ITF44), Catanzaro (ITF63), Reggio di Calabria (ITF65), Palermo (ITG12), Messina (ITG13), Siracusa (ITG19), Nuoro (ITG2E), Sud Sardegna (ITG2H), Grosseto (ITI1A), Arezzo (ITI18), Siena (ITI19), Latina (ITI44) and Frosinone (ITI45); by **France** in Paris (FR101), Yvelines (FR103), Essonne (FR104), Hauts-de-Seine (FR105), Seine-Saint-Denis (FR106), Val-de-Marne (FR107), Val-d'Oise (FR108), Seine-Maritime (FRD22), Lot-et-Garonne (FRI14), Haute-Garonne (FRJ23), Tarn-et-Garonne (FRJ28), Puy-de-Dôme (FRK14), Ardèche (FRK22) and Vaucluse (FRL06); by **Germany** in Aschaffenburg, Landkreis (DE264); by **Greece** in Irakleio (EL431) and Lakonia, Messinia (EL653); by **Spain** in Alicante/Alacant (ES521) and Almería (ES611); by **Croatia** in Splitsko-dalmatinska županija (HR035); by **Kosovo*** in Pejë (XK003); by **Romania** in Sălaj (RO116); and by **Türkiye** in Çanakkale (TR222).

As observed in previous years, most cases were among males aged 65 years and older. The hospitalisation rate was similar to previous years, with 84% of cases hospitalised this year compared to 89% in the past decade. The high hospitalisation rate is due to the nature of WNV surveillance, which tends to predominantly capture the most severe cases. The case fatality rate this year was 9%, which is below but comparable to the 10% observed in the previous decade. Neurological manifestations were reported in 56% of cases this year, compared to 66% in the previous decade. In general, a dominance of neurological cases is expected, as cases with more severe symptoms are more likely to be diagnosed.

From the veterinary perspective, 186 WNV outbreaks among equids and 359 outbreaks among birds have been reported in Europe in 2025. The earliest start date of an outbreak among equids and birds was on 15 January 2025 in Germany and 16 February 2025 in Italy, while the latest onset of an outbreak among equids and birds was, respectively, on 7 November 2025 in Spain and 4 November 2025 in Italy. Outbreaks among equids were reported by **Italy** (87), **France** (57), **Spain** (12), **Croatia** (11), **Hungary** (7), **Germany** (5), **Greece** (5), **Austria** (1) and **the Netherlands** (1). Outbreaks among birds were reported by **Italy** (330), **Germany** (15), **Spain** (4), **Belgium** (3), **Austria** (2), **France** (2), **Croatia** (1), **Cyprus** (1) and **Hungary** (1).

In the Animal Disease Information System (ADIS) database, no information was provided on the exact equid species reported, whereas species details were available for birds. The bird species associated with the highest number of reported outbreaks in 2025 (eight or more outbreaks) were the carrion crow (97) and the common magpie (62), followed by the common wood-pigeon (30), common kestrel (18), northern goshawk (14), herring gull (9), little owl (9), rock dove (9), unidentified Accipitridae (9), Eurasian jay (8), hooded crow (8) and European turtle-dove (8). In addition, several other bird species were associated with up to seven outbreaks.

In June, July, and August 2025, equid outbreaks exceeded the 10-year monthly average (2015–2024) but fell below it from September through to November. Meanwhile, bird outbreaks stayed below the three-year monthly mean (2022–2024) from April to July, then rose above it in August, September and October 2025. Overall, this year, the number of reported WNV outbreaks in equids was higher than in all previous years, except 2018 and 2024. For birds, the number of outbreaks reported in 2025 was higher than in any year since the start of mandatory reporting in 2021, except for 2024.

As of 3 December 2025, outbreaks in birds and/or equids have been reported in 116 regions across 11 countries. Of the 11 countries that submitted data in 2025, eight had previously reported WNV outbreaks in birds and/or equids to ADIS in previous years, reflecting endemicity in these territories. In contrast, **Belgium** reported WNV outbreaks for the first time ever to ADIS in 2025, with three outbreaks in wild birds. Two outbreaks involved Eurasian

jackdaws, and one involved carrion crows, all recorded in August 2025. Both bird species are generally resident, although Eurasian jackdaws from northern and eastern Europe may migrate south during winter. These outbreaks occurred in the administrative units of Mechelen (BE212) and Halle-Vilvoorde (BE241). In October 2025, **the Netherlands** also reported a WNV outbreak in equids to ADIS for the first time. The outbreak occurred in the administrative unit of Groot-Rijnmond (NL366). However, this was not the first detection of the virus in the Netherlands, where WNV was first documented in mosquitoes, birds, and humans back in 2020. Additionally, in November 2025, **Cyprus** (CY000) notified ADIS of a bird outbreak that had occurred back in March 2025 and involved a Great Cormorant. This was the first WNV animal outbreak reported by Cyprus to ADIS. However, WNV infections have been reported in humans in Cyprus already during multiple years since 2016.

Besides the four new regions in Belgium, in the Netherlands and in Cyprus, up to 3 December 2025, outbreaks in birds and/or equids were reported for the first time to ADIS in 26 regions: by **Italy** in Arezzo (ITI18), Ascoli Piceno (ITI18), Caltanissetta (ITG15), Firenze (ITI14), Foggia (ITF46), Frosinone (ITI45), L'Aquila (ITF11), Lecco (ITC43), Ragusa (ITG18), Reggio Calabria (ITF65), Siracusa (ITG19), and Sondrio (ITC44); by **France** in Haute-Garonne (FRJ23), Loiret (FRB06), Oise (FRE22), Paris (FR101), Tarn (FRJ27), Val-de-Marne (FR107), Vaucluse (FRL06), and Yvelines (FR103); by **Croatia** in Koprivničko-križevačka županija (HR063), and in Bjelovarsko-bilogorska županija (HR021); by **Spain** in Almería (ES611) and Menorca (ES533); by **Austria** in Innsbruck (AT332); and by **Germany** in Rhein-Neckar-Kreis (DE128). Furthermore, in 2025, outbreaks in equids were reported in the Greek region of Thasos-Kavala (EL515), marking the first such report in animals since the last recorded outbreak 12 years prior.

Reports of WNV outbreaks during the winter, when mosquito activity is minimal, should be carefully evaluated as they raise questions about the timing of infection. Two such reports – one outbreak in equids reported by Germany in January 2025, and one in birds reported by Italy in February 2025 – warrant cautious interpretation, as they may reflect residual detection (e.g. lingering antibodies or viral RNA from infections acquired in the year before) rather than active transmission in 2025.

Seven countries – Croatia, France, Germany, Greece, Hungary, Italy, and Spain – reported both WNV human cases and outbreaks in equids and/or birds. This year, Italy accounted for the majority of the human cases (70%) and the outbreaks in equids and birds (75.4%). This was likely due to favourable climate conditions and ecological hotspots (e.g. wetlands, agricultural areas) that influenced mosquito vector populations and the distribution and behaviour of animal hosts. Intensive surveillance in Italy may also have contributed to high detection rates of human cases and outbreaks in birds and equids.

The reporting of WNV outbreaks in birds marks the first detection of the virus in Belgium. Notably, the country has never recorded any locally acquired human cases. This development signals a significant step in the local emergence of WNV and points to a likely recent introduction of the virus into the national ecosystem. These findings underline the need for enhanced surveillance and increased public health preparedness.

The identification of WNV cases in humans and animals within previously unaffected areas underscores the continuing geographic expansion of the virus, likely driven by conducive environmental conditions and ecological factors. In addition, increased surveillance or monitoring sensitivity and raised awareness in these areas might have played a role in the detection of the cases.

Owing to delays in diagnosis and reporting, as well as the fact that most of the WNV infections are asymptomatic or subclinical, the case numbers provided in this report likely underestimate

the true number of cases. Of note, the seasonal surveillance in humans primarily focuses on capturing laboratory-confirmed cases, which contributes to the diagnostic delay.

This year, the peak of WNV infections occurred in August for humans and birds, and in September for equids, which is consistent with the pattern seen in previous years. In 2025, the EU/EEA recorded the fourth highest annual total of human WNV infections since surveillance began in 2008. The number of reported WNV outbreaks in equids was the third highest on record, while bird outbreaks in 2025 were the second highest since mandatory reporting began in 2021.

As environmental conditions are no longer favourable for vector activity and virus replication in vectors, no more locally acquired WNV infections are expected in 2025. However, a few sporadic infections might occur.

This report is the final monthly update for 2025. Regular monthly reporting will resume with the onset of the next vector activity season, anticipated to begin with the detection of the first human cases in 2026, likely in June or July. Isolated cases that may arise outside the typical mosquito transmission season will not trigger additional monthly reports.

Key words: West Nile virus, humans, birds, equids, outbreak.

The full automated report is available online at the following link:

https://www.ecdc.europa.eu/en/infectious-disease-topics/west-nile-virus-infection/surveillance-and-disease-data/monthly-updates