

West Nile fever

Reporting on 2014 data retrieved from TESSy* on 19 November 2015

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Key facts

- A total of 74 locally acquired cases was reported in TESSy in 2014, 63 of which were confirmed (85.7%). Three travel-related cases were reported.
- The EU/EEA notification rate for locally acquired cases in 2014 was 0.01 per 100 000 population.
- Compared with 2013, the notification rates for locally acquired cases decreased in all countries, with the exception of Romania where notification rates remained stable.
- As in previous years, the highest notification rate was reported in the ≥65-year-old age group.

Methods

[Click here for a detailed description of the methods used to produce this annual report](#)

This report is based on data collected through two complementary processes:

1. A real-time data collection process used by the Member States to timely report cases during the period of high mosquito activity (June–November)
 2. An annual data collection process; countries which did not detect any cases during the year are asked to report 'zero cases'. All other countries are encouraged to report complementary data on detected cases if considered relevant.
- In 2014, 25 countries provided information on West Nile fever (WNV) in humans. Four countries (Austria, Greece, Hungary and Italy) reported only locally acquired cases, Romania reported locally acquired cases as well as one travel-associated case. The United Kingdom only reported two travel-associated cases.
 - In 2014, 21 countries used the EU case definition, three countries did not specify which case definition was used (Belgium, Finland and Italy), and the United Kingdom used an alternative case definition.
 - In 2014, 22 reporting countries had a comprehensive surveillance system, Belgium and France had a sentinel system, and Austria used another disease surveillance system. Reporting is compulsory in 21 countries and voluntary in four (Austria, Belgium, France and the United Kingdom). Surveillance is passive, except in five countries (Belgium, the Czech Republic, France, Greece, Slovakia and the United Kingdom) (Annex 1). Reporting is done at the national level (except Italy) and case based.
 - All tables, maps and graphs in this report are based on locally acquired WNV cases.

Epidemiology

All cases reported in Greece, Hungary and Italy were locally acquired. Romania reported both locally acquired cases and imported cases. The United Kingdom only reported imported cases.

Seventy-seven cases of WNV were reported in 2014. Three cases were imported: two in the United Kingdom (acquired in Egypt and in the United States), one in Romania (acquired in Bulgaria).

In addition, 74 locally acquired cases of WNV (63 of which were confirmed), were reported in the EU in 2014. The EU notification rate for locally acquired cases was 0.01 cases per 100 000 population, lower than in 2013 (0.33 cases per 100 000 population). The fact that surveillance systems vary between countries makes direct comparisons difficult. However, compared with 2013, notification rates decreased in all countries (in Greece for the second consecutive year), with the exception of Romania where they remained stable. The highest number of locally acquired WNV cases was observed in Italy (24) and Romania (23), followed by Greece (15). In all, 2014 marked the year with the lowest number of reported cases since the inception of TESSy.

Table 1. Locally acquired West Nile fever cases: number and rate per 100 000 population, EU/EEA, 2010–2014

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| Country | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | | | | | |
|----------------|------------|------------|------------|------------|------------|------------|------------|------------|---------------|-------------|----------------|------------|------------|-----------------|
| | Cases | Rate | Cases | Rate | Cases | Rate | Cases | Rate | National data | Report type | Reported cases | Rate | ASR | Confirmed cases |
| Austria | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | Y | C | 1 | 0.0 | 0.0 | 1 |
| Belgium | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | Y | C | 0 | 0.0 | 0.0 | 0 |
| Bulgaria | . | . | . | . | 2 | 0.0 | 0 | 0.0 | Y | C | 0 | 0.0 | 0.0 | 0 |
| Croatia | . | . | . | . | 5 | 0.3 | 16 | 1.1 | . | . | . | . | . | . |
| Cyprus | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | Y | C | 0 | 0.0 | 0.0 | 0 |
| Czech Republic | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.0 | Y | C | 0 | 0.0 | 0.0 | 0 |
| Denmark | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| Estonia | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | Y | C | 0 | 0.0 | 0.0 | 0 |
| Finland | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | Y | C | 0 | 0.0 | 0.0 | 0 |
| France | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | Y | C | 0 | 0.0 | 0.0 | 0 |
| Germany | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| Greece | 262 | 14.1 | 100 | 7.7 | 161 | 13.1 | 86 | 5.9 | Y | C | 15 | 0.1 | 0.1 | 13 |
| Hungary | 18 | 0.9 | 0 | 0.0 | 17 | 0.7 | 31 | 1.6 | Y | C | 11 | 0.1 | 0.1 | 3 |
| Iceland | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| Ireland | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | Y | C | 0 | 0.0 | 0.0 | 0 |
| Italy | 3 | 0.0 | 14 | 0.1 | 50 | 0.5 | 69 | 0.7 | N | C | 24 | - | - | 24 |
| Latvia | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | Y | C | 0 | 0.0 | 0.0 | 0 |
| Liechtenstein | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| Lithuania | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | Y | C | 0 | 0.0 | 0.0 | 0 |
| Luxembourg | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | Y | C | 0 | 0.0 | 0.0 | 0 |
| Malta | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | Y | C | 0 | 0.0 | 0.0 | 0 |
| Netherlands | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | Y | C | 0 | 0.0 | 0.0 | 0 |
| Norway | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | Y | C | 0 | 0.0 | 0.0 | 0 |
| Poland | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | Y | C | 0 | 0.0 | 0.0 | 0 |
| Portugal | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| Romania | 57 | 2.1 | 11 | 0.2 | 14 | 0.2 | 24 | 0.5 | Y | C | 23 | 0.1 | 0.1 | 22 |
| Slovakia | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | Y | C | 0 | 0.0 | 0.0 | 0 |
| Slovenia | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.1 | Y | C | 0 | 0.0 | 0.0 | 0 |
| Spain | 2 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | Y | C | 0 | 0.0 | 0.0 | 0 |
| Sweden | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | Y | C | 0 | 0.0 | 0.0 | 0 |
| United Kingdom | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | Y | C | 0 | 0.0 | 0.0 | 0 |
| EU/EEA | 342 | 0.5 | 125 | 0.2 | 249 | 0.4 | 228 | 0.3 | . | C | 74 | 0.0 | 0.0 | 63 |

Source: Country reports. Legend: Y = yes, N = no, C = case based, . = no report, ASR: age-standardised rate
Detailed maps are available from: http://ecdc.europa.eu/en/healthtopics/west_nile_fever/West-Nile-fever-maps/Pages/index.aspx

In 2014, locally acquired West Nile fever cases were mostly reported from a clearly defined region in the south-east of the EU.

Figure 1. Number of reported, locally acquired cases of West Nile fever, EU/EEA, 2014

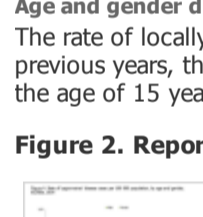


Source: Country reports from Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Estonia, Finland, France, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Romania, Slovakia, Slovenia, Spain, Sweden, the United Kingdom.

Age and gender distribution

The rate of locally acquired West Nile fever cases was higher in men than women (0.02 and 0.01 cases per 100 000, respectively), and the male-to-female ratio was 2.3:1. As in previous years, the highest notification rate was reported in the ≥65-year-old age group (0.04 cases per 100 000, Figure 2). Only one case was reported among children under the age of 15 years.

Figure 2. Reported, locally acquired cases of West Nile fever, by age and gender, EU/EEA, 2014



Source: Country reports from Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Estonia, Finland, France, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Romania, Slovakia, Slovenia, Spain, Sweden, the United Kingdom.

Seasonality

A strong seasonality could be observed: most cases in the EU/EEA between 2010 and 2014 were reported between July and October. Between 2010 and 2014, cases numbers peaked in or around September.

Figure 3. Seasonal distribution of reported, locally acquired West Nile fever cases, EU/EEA, 2014 compared with 2010–2013



Source: Country reports from Austria, Belgium, Cyprus, the Czech Republic, Estonia, Finland, France, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Romania, Slovakia, Slovenia, Spain, Sweden, the United Kingdom.

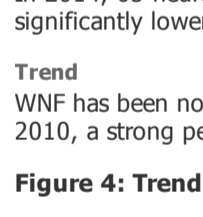
Enhanced surveillance

In 2014, 65 neuroinvasive and nine non-neuroinvasive infections were reported by five affected countries. The proportion of detected non-neuroinvasive infections was significantly lower than in 2013 when 83 neuroinvasive infections and 63 non-neuroinvasive infections were reported.

Trend

WNV has been notifiable at the EU level since 2008. The number of cases varies from year to year (Figure 4). In 2014, the number of cases was lower than in the years before. In 2010, a strong peak of locally acquired West Nile fever cases was observed, essentially due to the outbreak (262 cases) that affected Greece.

Figure 4. Trend and number of reported, locally acquired cases of West Nile fever, EU/EEA, 2010–2014



Source: Country reports from Austria, Belgium, Cyprus, the Czech Republic, Estonia, Finland, France, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Romania, Slovakia, Slovenia, Spain, Sweden, the United Kingdom.

Discussion

In 2014, the notification rate of WNV in humans in the EU decreased markedly compared with 2013.

Two countries (Hungary and Romania) have been reporting human cases for nine consecutive years, Italy for seven years, and Greece for five years. In Greece, the 2012 notification rate was higher than in 2011 and then decreased steadily in 2013–2014. However, in 2014, an increase in the proportion of neuroinvasive infections among the reported cases was recorded.

The affected areas in the north of Italy are some of the most densely populated in the country. However, in 2013 and 2014, provinces in the south of Italy were also affected. The regional units around Athens are affected by WNV since 2011. However, the largest number of cases was reported in 2012 and 2013. The capital itself reported no cases in 2014. Every year, additional regional units in Greece reported affected areas.

In Romania, cases were reported from counties in the south-east and the centre of the country, as well as from the capital, Bucharest. In Hungary, cases were reported across the country; this was also the case 2012.

In all affected countries, except Italy, cases were also reported in the capitals, causing serious concerns about the safety of the blood supply. In addition, all countries reported that the geographic distribution of cases had expanded compared with 2011.

Although Spain reported no human cases in 2013 and 2014, several outbreaks were reported in horses in the provinces of Sevilla and Huelva in the south of the country [1]. These provinces are also close to the border with Portugal. Thus the risk of West Nile virus transmission to humans in both countries cannot be excluded.

Public health conclusions

Currently, no vaccine against West Nile virus (WNV) infection is available. The best method to reduce the rates of WNV infection is mosquito control at the municipality level, ideally with the full engagement of the community, including business partners that specialise in mosquito control. Possible interventions include the reduction of mosquito populations by controlling the number of breeding sites such as standing pools of water (e.g. old tires, buckets, unused swimming pools).

Between 2011 and 2013, 2 349 serum samples with positive results were administered in Greece and did not have any travel history outside the country [2].

Several countries (e.g. Italy, Greece and Portugal) implemented mosquito surveillance schemes that monitor increased mosquito activity and focus on early virus detection [3].

An interactive atlas which shows the spatial distribution of West Nile fever cases in the EU and neighbouring countries is available on the ECDC website, complete with a weekly epidemiological update.

The first West Nile viruses identified in Europe belonged to lineage 1. In Europe, lineage 2 viruses were first reported in 2003 in birds [4], and more recently also in humans [5]. The presence of West Nile virus lineages 1 and 2 in Europe needs to be further monitored in order to better estimate the risk of spread in both affected and naive areas in Europe [6].

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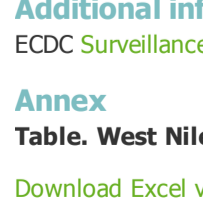
Additional information

[ECDC Surveillance Atlas of Infectious Diseases](#)

Annex

Table. West Nile fever, surveillance systems overview, 2014

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* The European Surveillance System (TESSy) is a system for the collection, analysis and dissemination of data on communicable diseases. EU Member States and EEA countries contribute to the system by uploading their infectious disease surveillance data at regular intervals.