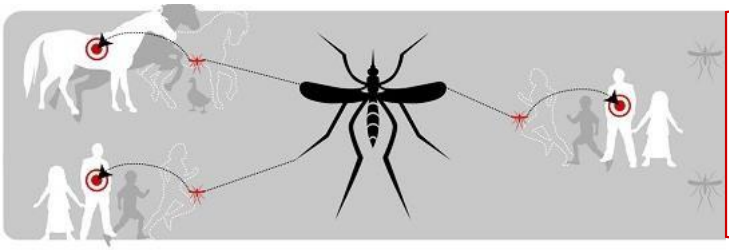

IZS TERAMO
NATIONAL REFERENCE CENTRE FOR EXOTIC DISEASES OF ANIMALS

ISTITUTO SUPERIORE DI SANITÀ

Integrated surveillance of West Nile and Usutu virus

Epidemiological report no. 13 19 September 2024 National data

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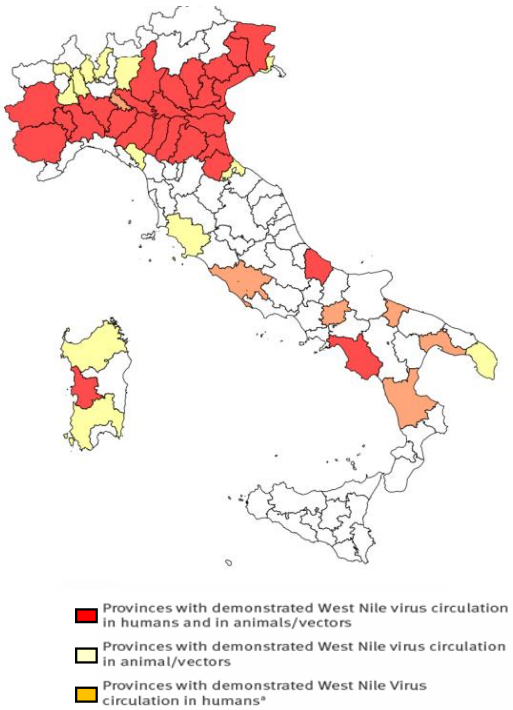
1 In Evidence

This report summarizes the results of West Nile virus and the Usutu virus surveillance activities in Italy, updated to **18-9-2024**

51 new human cases of West Nile Virus have been reported in the period 12 – 18 September 2

Figure 1. *Provinces where WNV has been detected in vectors, animals and humans (blood donor, fever and neuroinvasive cases)*

Since the beginning of May 2024, **382** confirmed cases of West Nile Virus
(WNV) infection in humans have been reported in Italy (331 in the previous bulletin);



222 in the neuroinvasive form (12 Piedmont, 9 Lombardy, 38 Veneto, 5 Friuli-Venezia Giulia, 131 Emilia-Romagna, 1 Lazio, 2 Abruzzo,11 Campania, 2 Puglia, 2 Calabria, 1 Sardinia, 2 cases imported from the United States, 5 from Albania and 1 case from
Romania), 45 asymptomatic cases **identified in blood donors** (2 Piedmont, 10 Lombardy, 14 Veneto, 2 Friuli-Venezia Giulia, 16 Emilia-Romagna, 1 Campania), **114 cases of fever** (3 Piedmont, 3 Lombardy, 69 Veneto, 4 Friuli-Venezia Giulia, 30 Emilia-Romagna, 1 Calabria, 1 case imported from Oman and 1 from Morocco), 1 asymptomatic case (1 Emilia-Romagna).

- Among the confirmed cases, 16 deaths were reported (3 Piedmont, 1 Lombardy, 7 Veneto, 1 Friuli-Venezia Giulia, 3 Emilia-Romagna, 1 Calabria).

In the same period, 2 cases of Usutu
virus were reported (1 in the province of Modena, 1 in the province of Latina).

- Veterinary surveillance carried out on horses, mosquitoes, sedentary and wild birds, confirmed the circulation of WNV in Abruzzo, Campania, Tuscany, Puglia, Veneto,

Friuli-Venezia Giulia, Piedmont, Sardinia, Emilia-Romagna, Marche and Lombardy. Molecular analyses confirmed the circulation of WNV Lineage 1 and 2.

Integrated WN and Usutu virus surveillance

1 Human

Since the beginning of surveillance , 382 confirmed human cases of West Nile Virus (WNV) have been reported in Italy, 222 of which showed neuroinvasive symptoms (Table 1), 45 asymptomatic cases identified in blood donors (2 Alessandria, 1 Benevento, 4 Bologna, 2 Brescia, 2 Cremona, 6 Mantua, 10 Modena, 7 Padua, 2 Parma, 2 Rovigo, 3 Treviso, 2 Udine, 2 Verona), 114 cases of fever (2 Alessandria, 5 Bologna, 1 Cosenza, 1 Cremona, 1 Ferrara, 1 Forlì-Cesena, 2 Mantua, 16 Modena, 27 Padua, 2 Parma, 1 Piacenza, 1 Pordenone, 4 Reggio Emilia, 11 Rovigo, 1 Turin, 11 Treviso, 3 Udine, 11 Venice, 8 Verona, 1 Vicenza, 1 imported from Oman and 1 from Morocco), 1 asymptomatic case (1 Reggio Emilia).Details of the neuro-invasive forms only is provided below.

Table 1. Distribution of confirmed WNND cases by province of exposure and age group. Italy: 2024

Regione/Provincia di esposizione	Fascia di età					Totale
	<=14	15-44	45-64	65-74	>=75	
Piemonte (n=12)						
Alessandria				1	2	**3**
Asti				1	3	**4**
Cuneo				2		**2**
Torino					3	**3**
Lombardia (n=9)						
Lodi			2			**2**
Mantova			1	2	2	**5**
Milano					1	**1**
Pavia					1	**1**
Veneto (n=38)						
Padova	1		4	3	8	**16**
Rovigo			1	2	5	**8**
Treviso		1	2			**3**
Venezia		2	2	1	4	**9**
Verona					2	**2**
Friuli-Venezia Giulia (n=5)						
Pordenone					3	**3**
Udine					2	**2**
Emilia-Romagna (n=131)						
Bologna		2	6	8	17	**33**
Ferrara			3	2	2	**7**
Forlì-Cesena		1			4	**5**
Modena		1	7	10	24	**42**
Parma			2	1	3	**6**
Piacenza			1			**1**
Ravenna			1		2	**3**
Reggio Emilia		1	7	12	14	**34**
Lazio (n=1)						
Roma			1			**1**
Abruzzo (n=2)						
Chieti			1		1	**2**
Campania (n=11)						
Benevento			1			**1**
Salerno			3	2	5	**10**
Puglia (n=2)						
Barletta-Andria-Trani			1			**1**
Taranto					1	**1**
Calabria (n=2)						
Cosenza					2	**2**
Sardegna (n=1)						
Oristano					1	**1**
Totale	**1**	**8**	**46**	**47**	**112**	**214**

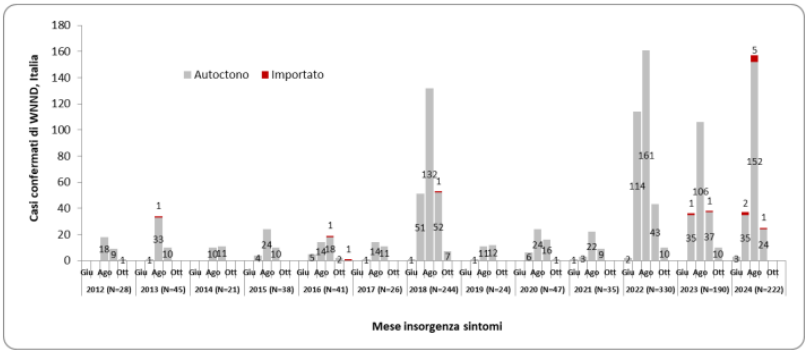


Figure 1. Trend of confirmed WNND cases by symptom onset month. Italy: 2012 – 2024.

3

Horses

2 1 WND outbreaks have been confirmed in equids in **Emilia Romagna, Campania ,Veneto, Piemonte, Puglia e Abruzzo** region.

Region	Province	N.Outbreaks	N.clinical outbreaks	Outbreaks details				Prevalence %	Letality%
				susceptible anima	Total cases	Clinical cases	Death		
Puglia	Lecce	2	2	11	2	2	1	18,2	50
Abruzzo	Chieti	4	0	16	4	0	0	25,0	0
Veneto	Padova	2	2	60	2	2	0	3,3	0
	Vicenza	1	1	27	1	1	1	3,7	0
	Venezia	1	1	15	1	1	0	6,7	0
	Verona	3	4	126	4	4	0	3,2	0
Piemonte	Asti	1	1	27	1	1	1	3,7	100
	Cuneo	1	1	4	1	1	0	25,0	0
	Torino	1	1	53	1	1	0	2	0
Emilia Romagna	Modena	1	1	22	1	1	1	4,5	100
	Reggio Emilia	1	1	19	1	1	0	5,3	0
	Bologna	1	1	25	1	1	0	4,0	0
Lombardia	Cremona	1	1	120	1	1	0	0,8	0
Campania	Salerno	1	1	1	1	1	0	100,0	0

4 Resident birds of target species

CESME confirmed WNV in **122 resident birds** belong to target species from**. Lombardia, Toscana, Sardegna, Abruzzo, Piemonte, Friuli Venezia Giulia, Emilia Romagna e Veneto**The circulating strains belong to **Lineage 1 Lineage 2.**

The target species for the surveillance are :

- **Magpie (*Pica pica*)**
- **Carrion crow (*Corvus corone cornix*)**
- **Eurasian jay (*Garrulus glandarius)***

Figure 1 Geographical distribution West Nile virus detection in birds belong to target species - **2024**

Region	Province	Carrion Crow	Magpie	Jay
Emilia Romagna	Forlì Cesena	0	3	1
	Ferrara	4	46	1
	Modena	1	4	0
	Parma	3	4	0
	Ravenna	0	0	2
	Reggio Emilia	0	1	0
	Rimini	0	1	0
Friuli Venezia Giulia	Udine	0	1	0
Piemonte	Cuneo	1	0	0
	Novara	1	0	0
	Torino	1	0	0
Sardegna	Oristano	1	0	0
Veneto	Rovigo	1	1	1
	Verona	1	1	0
	Venezia	0	3	1
Abruzzo	Chieti	0	5	0
Lombardia	Varese	0	1	0
Toscana	Grosseto	3	0	0
	Massa Carrara	0	1	0
Total		17	72	6

Table 1 West Nile virus detection in birds belong to target species- **2024**

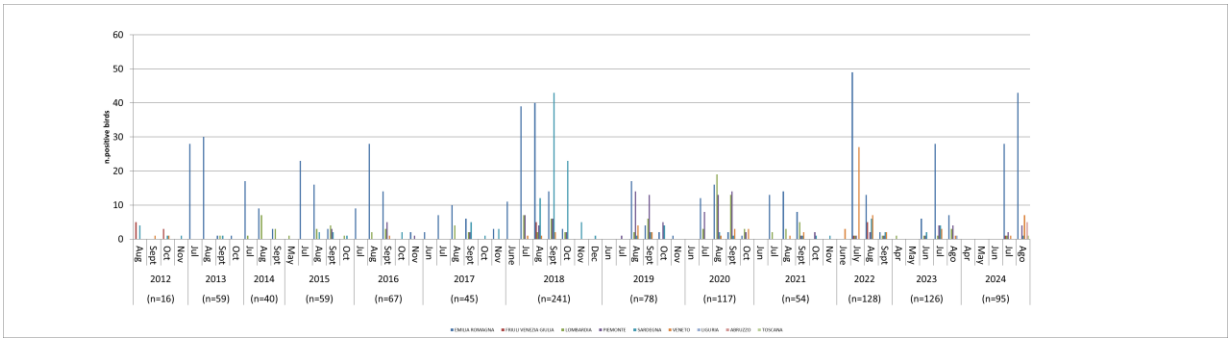


Figure 2 Spatio–temporal distribution West Nile virus detection in birds belong to target species - **2024**

5

Wild birds

CESME confirmed WNV in **154 wild birds from Marche*, Emilia Romagna, Veneto e Campania**regions. The circulating strains belong **to Lineage 1 and Lineage 2.**

Figure 3 Geographical distribution West Nile virus detection in wild birds- **2024**

Region		n.birds+
Marche	Ancona	1
Emilia Romagna	Rimini	5
	Bologna	16
	Piacenza	1
	Ravenna	4
	Modena	2
	Reggio Emilia	4
	Ferrara	58
Veneto	Padova	15
	Verona	2
	Rovigo	11
	Venezia	34
Campania	Salerno	1
Totale		154

Table 2 West Nile virus detection in wild birds **2024**

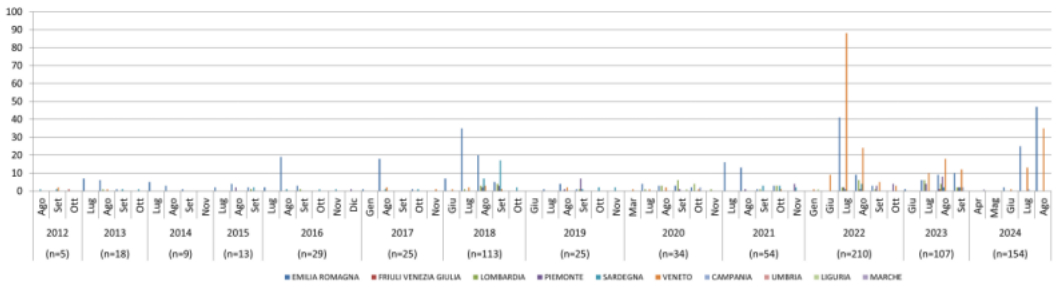


Figure 4 Spatio–temporal distribution West Nile virus detection in wild birds - **2024**

6 Entomological surveillance

WNV genome has been reported in **153 mosquito pool** collected in **Emilia Romagna, Abruzzo, Veneto, Piemonte, Sardegna, Friuli Venezia Giulia Lombardia** regions**.** The circulating strains belong to **Lineage 2**. In Sicilia and Veneto was confirmed **WNV Lineage 1 and Lineage 2.**

Figure 5 Geographical distribution West Nile virus detection in mosquitoes - **2024**

Region	Province	n.pool +
Emilia Romagna	Parma	14
	Ferrara	21
	Forlì Cesena	1
	Reggio Emilia	26
	Piacenza	1
	Bologna	12
	Modena	17
Lombardia	Cremona	1
	Brescia	1
	Mantova	5
Veneto	Verona	11
	Venezia	12
	Treviso	2
	Padova	4
	Rovigo	12
Sardegna	Oristano	1
Friuli Venezia Giulia	Gorizia	1
	Pordenone	3
Piemonte	Torino	1
	Alessandria	2
Abruzzo	Chieti	5
Totale		153

Table 2 West Nile virus detection in mosquitoes- **2024**

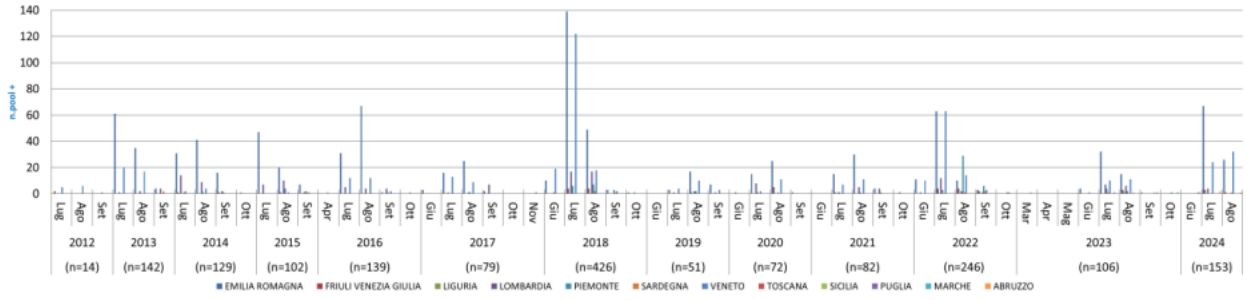


Figure 6 Spatio–temporal distribution West Nile virus detection in mosquitoes - **2024**

7

Poultry surveillance

- No WND outbreaks have been confirmed in poultry flocks.

8 USUTU virus surveillance

Usutu virus was identified in **20 mosquito pools and 18 birds** in **Emilia Romagna, Toscana, Lombardia, Marche, Sardegna e Piemonte.**

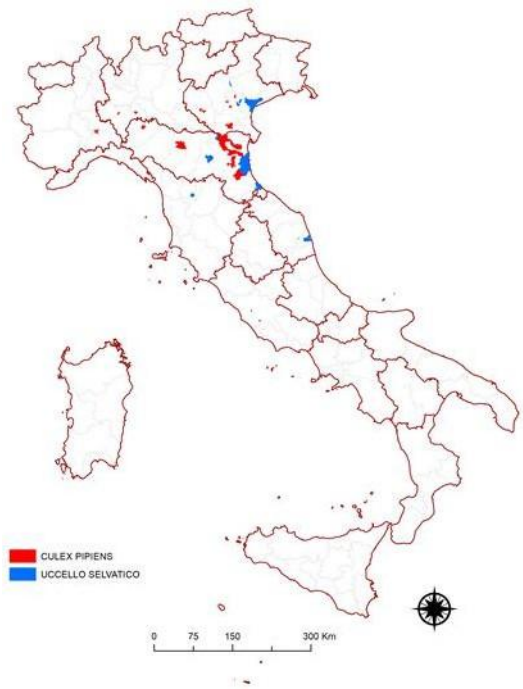


Figure 7 Geographical distribution Usutu virus detection in birds and mosquitoes - **2024**

Region	Province	n.pool+
Piemonte	Alessandria	2
Emilia Romagna	Bologna	1
	Ferrara	4
	Forlì Cesena	2
	Ravenna	2
	Reggio Emilia	1
	Piacenza	1
Lombardia	Lodi	1
	Pavia	1
Veneto	Padova	2
	Rovigo	1
	Verona	1
	Vicenza	1
Total		20

Table 3 Usutu virus detection in mosquitoes - **2024**

Regione	Provincia	n.uccelli+
Emilia Romagna	Bologna	1
	Ferrara	4
	Ravenna	1
	Rimini	3
Marche	Fermo	1
Toscana	Pistoia	1
Veneto	Venezia	6
	Vicenza	1
Totale		18

Table 4 Usutu virus detection in birds **-2024**

9 National Plan for Prevention, Surveillance and Response to Arbovirus 2020-2025

West Nile (WNV) and Usutu (USUV) viruses surveillance activities since 2020 are included in the National Plan for Prevention, Surveillance and Response to Arbovirus 2020-2025.

The Plan integrates in a unique document the surveillance measures to be implemented at the national level for autochthonous and imported arboviruses, promoting a multidisciplinary approach in the management of surveillance and control activities.

More details about the integrated surveillance plan are available on the complete document «National Plan for Prevention, Surveillance and Response to Arbovirus 2020-2025.»

National Human surveillance activities are coordinated by the National Institute of Health (Istituto Superiore di Sanità, ISS) and the Ministry of Health is responsible to provide surveillance data to the European Commission and to ECDC. Moreover regions can implement normative-programmatic documents for the epidemiological and laboratory surveillance on their territory according to National legislation and guidelines provided by the Ministry of Health .

Veterinary surveillance activities are coordinated by the National Reference Center for the exotic diseases of animals (CESME) which harmonize the diagnostic procedures within the network of IIZZSS national laboratories and confirms suspected specimens. CESME is also in charge for the veterinary surveillance data management, collection and communication to the Ministry of Health according to the data flow reported in the Plan.

Useful links

- Web page of National Institute of Health
- Web page of Istituto Zooprofilattico Sperimentale dell'Abruzzo e del Molise "G. Caporale" (CESME)
- Directions of the National Italian Blood Center
- Directions of the National Italian Transplant Center
- Web page of the Italian Ministry of Health
- Web page of ECDC

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