

Integrated surveillance of West Nile and Usutu virus

Epidemiological report no. 12 7 September 2023
National data

- 1 In Evidence
- 2 Humans
- 3 Horses
- 4 Resident birds of target species
- 5 Wild birds
- 6 Entomological
- 7 Poultry
- 8 Usutu virus
- 9 National Plan for Prevention, Surveillance and Response to Arbovirus 2020-2025.

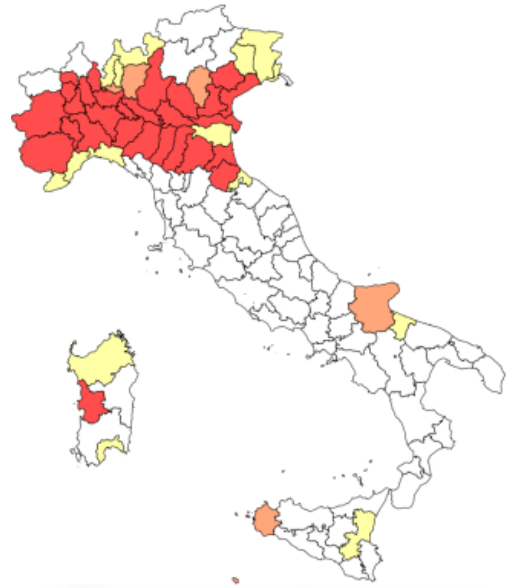
1

In Evidence

This report summarizes the results of West Nile virus and the Usutu virus surveillance activities in Italy, updated to **6-9-2023**

- 205** confirmed cases in Italy of West Nile Virus (WNV) infection in humans since the beginning of May (171 in the previous report); **116** have occurred in the **neuro-invasive form (20 Piedmont, 36 Lombardy, 14 Veneto, 39 Emilia-Romagna, 3 Apulia, 1 Sicily, 2 Sardinia) 1 imported case (Hungary), 52 cases identified in donors of blood (11 Piedmont, 28 Lombardy, 2 Veneto, 10 Emilia-Romagna) 1 imported case (Germany), 37 fever cases (5 Piedmont, 11 Lombardy, 18 Veneto, 3 Emilia-Romagna)**. Among the confirmed cases, 10 deaths were notified (4 Piedmont, 5 Lombardy, 1 Emilia-Romagna). The first case human case of WNV infection of the season was reported from Emilia-Romagna in July in the province of Parma. During the same period 2 cases of Usutu virus were reported in Piedmont (1 Novara, 1 Cuneo). This brings to 47 the number of provinces with demonstrated circulation of WNV belonging to 9 regions: Piedmont, Lombardy, Veneto, Friuli-Venezia Giulia, Liguria, Emilia-Romagna, Puglia, Sicily and Sardinia (see table on next page). Veterinary surveillance implemented on horses, mosquitoes, resident and wild birds, confirmed the circulation of WNV **Lineage 2** in Emilia Romagna, Friuli-Venezia Giulia, Liguria, Veneto, Lombardy, Sardinia, Piedmont and Apulia instead the WNV **Lineage 1** was confirmed in Sicily and Veneto. Positivity is being confirmed in Gorizia province.

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



- Red square:** Provinces with demonstrated West Nile virus circulation in humans and in animals/vectors
- Yellow square:** Provinces with demonstrated West Nile virus circulation in animal/vectors
- Orange square:** Provinces with demonstrated West Nile Virus circulation in humans*

1

Human

Since May 2023, the beginning of surveillance, 205 confirmed human cases of West Nile Virus have been reported in Italy(WNV), 116 of which manifested neuro-invasive symptoms (Table 1) all autochthonous cases except one case imported from Hungary, 52 identified in blood donors (2 Asti, 1 Bergamo, 1 Biella, 2 Bologna, 1 Brescia, 1 Forlì-Cesena, 1 Mantua, 20 Milan, 1 Modena, 3 Monza Brianza, 2 Novara, 4 Parma, 2 Pavia, 1 Ravenna, 1 Reggio-Emilia, 5 Turin, 1 Venice, 1 Vercelli, 1 Verona), 37 fever cases (1 Asti, 1 Bergamo, 2 Brescia, 2 Cremona, 1 Cuneo, 2 Lodi, 3 Mantua, 3 Novara, 4 Padua, 1 Pavia, 3 Piacenza, 1 Rovigo, 3 Treviso, 4 Venice, 3 Verona, 3 Vicenza). The following is the description of the neuro-invasive forms only

Table 1. Distribution of confirmed WNNND cases by province of exposure and age group. Italy: 2023

Regione/Provincia di esposizione	Fascia di età					Totale
	<=14	15-44	45-64	65-74	>=75	
Piemonte (n=20)						
Alessandria					1	1
Biella				1		1
Novara			1		2	3
Torino		1	5	3	5	14
Vercelli					1	1
Lombardia (n=36)						
Brescia				1		1
Cremona		1	1	1	3	6
Lodi				1	3	7
Mantova			3	1	3	7
Milano			2	1	7	10
Monza Brianza				2		2
Pavia					2	2
Varese					1	1
Veneto (n=14)						
Padova			3		2	5
Rovigo				1		1
Treviso					3	3
Venezia			1			2
Verona				1	2	3
Emilia-Romagna (n=39)						
Bologna		1	3	1	4	9
Modena			2		3	5
Parma		1		1	3	5
Piacenza			1	3	5	9
Ravenna			1		4	5
Reggio Emilia				3	3	6
Puglia (n=3)						
Foggia		1		1	1	3
Sicilia (n=1)						
Trapani			1			1
Sardegna (n=2)						
Olbia-Tempio					1	1
Cristiano					1	1
Totale	0	5	25	26	59	115

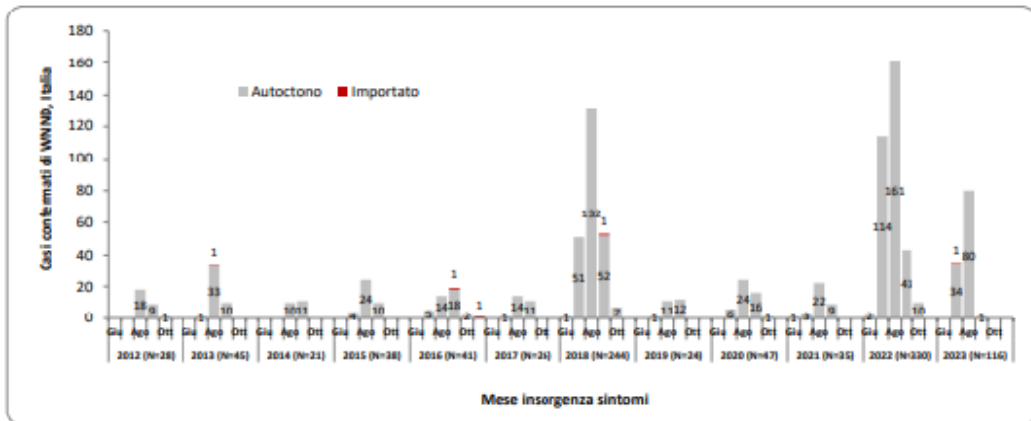


Figure 1. Trend of confirmed WNNND cases by symptom onset month. Italy: 2012 – 2023.

3

Horses

3 WND outbreaks have been confirmed in equids in **Piemonte and Emilia Romagna** region.

Region	Province	No. Outbreaks	No. clinical outbreaks	Outbreaks				Prevalence %	Letality%
				Suitable	Total cases	Clinical cases	Death/slaughter		
PIEMONTE	Asti	2	2	30	2	2	1	6,7	50
	Biella	1	1	24	1	1	0	4,2	0
EMILIA ROMAGNA	Bologna	1	1	24	1	1	0	4,2	0



4

Resident birds of target species

CESME confirmed WNV in **70 resident birds** belong to target species from **Lombardia, Sardegna, Piemonte, Emilia Romagna**. The circulating strains belong to Lineage 2.

The target species for the surveillance are :

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



Regione	Provincia	Comacchia	Gazza	Ghiandaia
Lombardia	Milano	1	2	0
	Mantova	0	1	0
	Varese	1	0	0
Emilia Romagna	Parma	10	9	2
	Bologna	0	3	0
	Ferrara	0	3	0
	Reggio Emilia	1	1	0
	Forlì Cesena	0	3	3
	Piacenza	5	3	0
Sardegna	Ravenna	0	2	0
	Sud Sardegna	3	0	0
Piemonte	Sassari	1	0	0
	Oristano	2	0	0
Veneto	Torino	1	1	1
	Novara	2	0	0
	Alessandria	0	1	0
	Cuneo	0	1	0
Liguria	Vercelli	1	0	0
	Treviso	0	1	0
	Venezia	0	1	0
Veneto	Verona	1	0	1
	Padova	0	0	1
Liguria	Imperia	0	0	1
Totale		70		

Table 1 West Nile virus detection in birds belong to target species- **2023**

Figure 1 Geographical distribution West Nile virus detection in birds belong to target species - **2023**

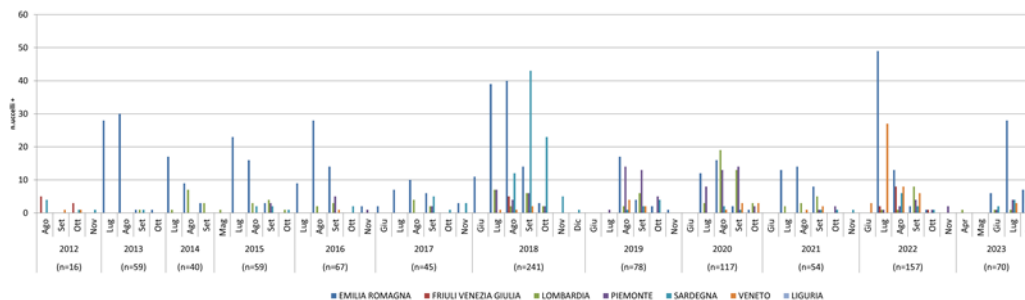


Figure 2 Spatio-temporal distribution West Nile virus detection in birds belong to target species - **2023**

5

Wild birds

CESME confirmed WNV in **40 wild birds** from **Emilia Romagna, Piemonte, Sardegna, Veneto and Lombardia** regions. The circulating strains belong to **Lineage 2**.



Regione	Provincia	Specie	n. uccelli
Emilia Romagna	Bologna	COLOMBACCIO	2
		MERLO	1
	Ferrara	COLOMBACCIO	1
		ASTORE	2
	Piacenza	CIVETTA	1
		COLOMBACCIO	1
	Parma	TACCOLA	1
		COLOMBACCIO	2
	Reggio Emilia	TORTORA	1
		MERLO	1
Brescia	CIVETTA	1	
	ASTORE	1	
Lombardia	Como	GHEPPO	1
		GIUFO	1
	Mantova	CIVETTA	1
	Varese	MERLO	1
		POIANA	1
Piemonte	Asti	ASTORE	1
	Cuneo	GABBIANO REALE	1
	Novara	PICCIONE	1
	Torino	CORVO	2
Sardegna	Sassari	SPARVIERO	1
	TORTORA	1	
Veneto	Padova	COLOMBACCIO	1
		TORTORA	2
	Venezia	AIRONE CENERINO	1
		ASSIOLO	1
		CIVETTA	1
		COLOMBACCIO	1
		GABBIANO REALE	1
		MERLO	1
		PASSERO	1
		TORTORA	1
Verona	AIRONE	1	
Verona	COLOMBACCIO	1	
Totale			40

Figure 3 Geographical distribution West Nile virus detection in wild birds - 2023

Table 2 West Nile virus detection in wild birds 2023

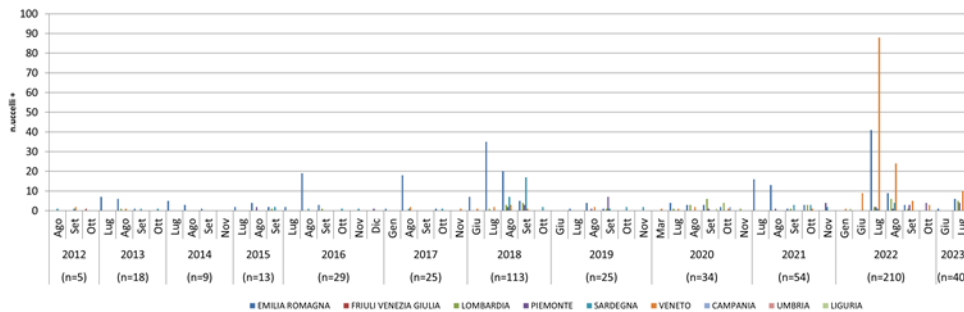


Figure 4 Spatio-temporal distribution West Nile virus detection in wild birds - 2023

6

Entomological surveillance

WNV genome has been reported in **91 mosquito pool** collected in **Emilia Romagna, Puglia, Liguria, Veneto, Piemonte, Sardegna, Friuli Venezia Giulia Lombardia and Sicilia** regions. The circulating strains belong to **Lineage 2**. In Sicilia and Veneto was confirmed **WNV Lineage 1**



Regione	Provincia	n.pool
Sicilia	Catania	1
	Piacenza	12
Emilia Romagna	Parma	7
	Forlì Cesena	1
	Modena	9
	Ravenna	2
	Bologna	11
	Reggio Emilia	5
	Ferrara	4
	Pavia	2
Lombardia	Milano	1
	Sondrio	1
	Brescia	1
	Cremona	2
	Mantova	6
	Torino	2
Piemonte	Vercelli	1
	Alessandria	2
	Rovigo	4
Veneto	Treviso	1
	Venezia	4
	Padova	4
	Verona	3
Sardegna	Oristano	1
Puglia	BAT	1
Friuli Venezia Giulia	Udine	1
	Pordenone	1
Liguria	Savona	1
Totale		91

Figure 5 Geographical distribution West Nile virus detection in mosquitoes - **2023**

Table 2 West Nile virus detection in mosquitoes- **2023**

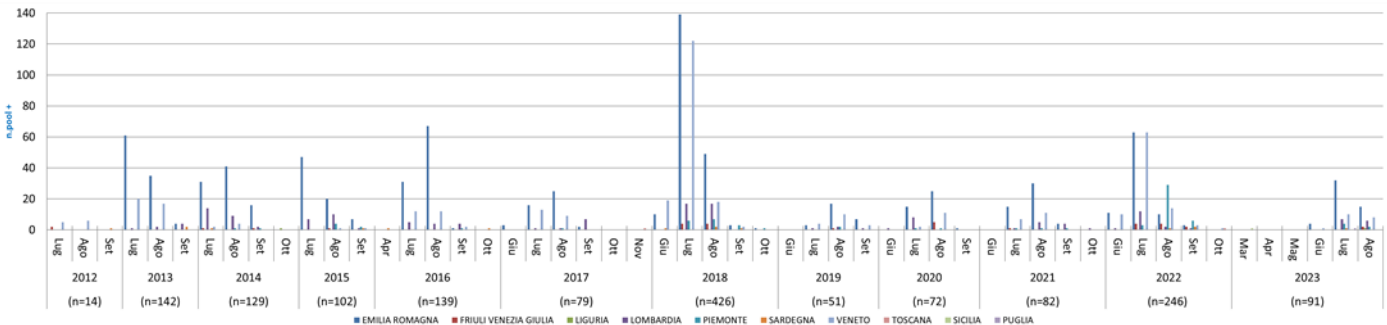


Figure 6 Spatio-temporal distribution West Nile virus detection in mosquitoes - **2023**

7

Poultry surveillance

- No WND outbreaks have been confirmed in poultry flocks.



8

USUTU virus surveillance

Usutu virus was identified in **44 mosquito pools** and **31 birds** in **Emilia Romagna, Toscana, Veneto, Lombardia, Marche, Sardegna e Piemonte**



Region	Province	n.pool	
Piemonte	Cuneo	1	
Toscana	Pistoia	1	
	Parma	3	
Emilia Romagna	Modena	4	
	Forli' Cesena	4	
	Ferrara	2	
	Ravenna	1	
	Rimini	1	
	Piacenza	7	
	Bologna	1	
	Veneto	Padova	2
		Rovigo	1
Treviso		1	
Venezia		6	
Vicenza		1	
Lombardia	Milano	2	
	Brescia	1	
	Cremona	1	
	Mantova	1	
Sardegna	Oristano	1	
Marche	Pesaro Urbino	2	
Total		44	

Table 3 Usutu virus detection in mosquitoes - **2023**

Figure 7 Geographical distribution Usutu virus detection in birds and mosquitoes - **2023**

Region	Province	n.birds
Emilia Romagna	Rimini	7
	Parma	2
	Ferrara	2
	Bologna	8
Veneto	Venezia	1
	Verona	2
Toscana	Arezzo	1
	Siena	1
Lombardia	Brescia	1
	Como	1
	Milano	2
	Varese	1
Piemonte	Cuneo	2
Total		31

Table 4 Usutu virus detection in birds -**2023**

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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