

Integrated surveillance of West Nile and Usutu virus

Epidemiological report no. 11 31^o August 2023
National data

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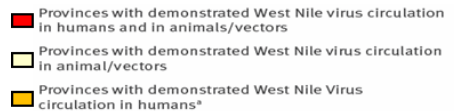
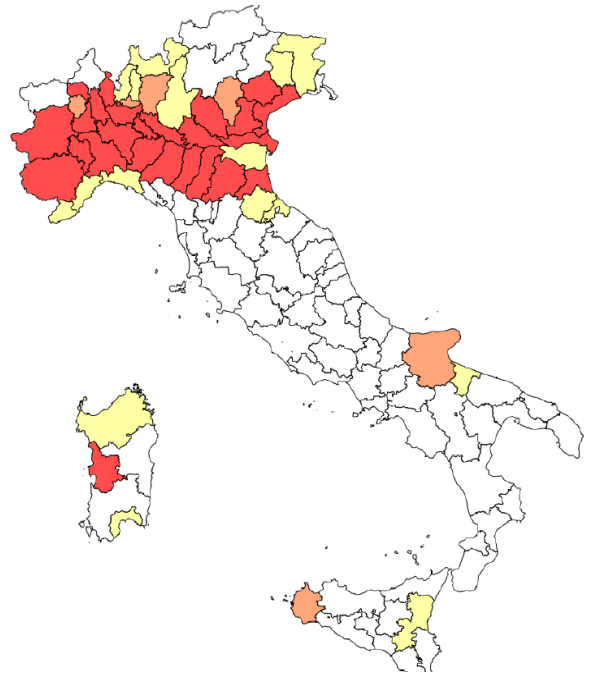
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In Evidence

This report summarizes the results of West Nile virus and the Usutu virus surveillance activities in Italy, updated to **30-8-2023**

- To date confirmed cases of West Nile Virus (WNV) infection in humans in Italy since the beginning of May (133 in the previous bulletin) rise to 171; 97 are neuro-invasive form (16 Piedmont, 33 Lombardy, 11 Veneto, 32 Emilia Romagna, 2 Puglia, 1 Sicily, 1 Sardinia) 1 important case (Hungary), 42 cases identified in blood donors (8 Piedmont, 24 Lombardy, 1 Veneto, 8 Emilia-Romagna) 1 case imported (Germany), 30 cases of fever (5 Piedmont, 10 Lombardy, 13 Veneto, 2 Emilia-Romagna), 1 symptomatic case (Lombardy) and 1 symptomatic case. Among the confirmed cases, 9 deaths were reported (3 Piedmont, 5 Lombardy, 1 Emilia-Romagna). Viral circulation involved 46 Province belonging to 9 Regions: Piedmont, Lombardy, Veneto, Friuli-Venezia Giulia, Liguria, Emilia-Romagna, Apulia, Sicily and Sardinia. The veterinary implemented on mosquitoes, horses and birds confirmed the circulation of WNV Lineage 2 in Emilia-Romagna, Friuli-Venezia Giulia, Liguria, Veneto, Lombardy, Sardinia, Piedmont and Puglia instead WNV Lineage 1 has been confirmed in Sicily and Veneto.

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



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Human

Since May 2023, the start of surveillance, 171 confirmed human cases have been reported in Italy from West Nile Virus (WNV), 97 of which manifested neuro-invasive symptoms (Table 1) all cases autochthonous except one case imported from Hungary (1 case with unknown age), 42 identified in blood donors (1 Bergamo, 2 Asti, 1 Biella, 2 Bologna, 1 Brescia, 1 Mantua, 18 Milan, 1 Modena, 2 Monza Brianza, 1 Novara, 4 Parma, 2 Pavia, 1 Reggio-Emilia, 4 Turin, 1 Venice) 30 cases of fever (1 Asti, 1 Bergamo, 1 Brescia, 2 Cremona, 1 Cuneo, 2 Lodi, 3 Mantua, 3 Novara, 3 Padua, 1 Pavia, 2 Piacenza, 3 Treviso, 3 Venice, 1 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=16)						
Alessandria					1	1
Biella				1		1
Novara					1	1
Torino		1	5	2	4	12
Vercelli				1		1
Lombardia (n=33)						
Brescia				1		1
Cremona		1	1	1	3	6
Lodi			1	3	2	6
Mantova			3	1	3	7
Milano			2	1	6	9
Monza Brianza				2		2
Pavia					1	1
Varese					1	1
Veneto (n=11)						
Padova			3		2	5
Rovigo				1		1
Treviso					2	2
Venezia					1	1
Verona				1	1	2
Emilia-Romagna (n=31)						
Bologna		1	2		3	6
Modena			2		2	4
Parma		1		1	3	5
Piacenza			1	2	5	8
Ravenna			1		3	4
Reggio Emilia				2	2	4
Puglia (n=2)						
Foggia		1			1	2
Sicilia (n=1)						
Trapani			1			1
Sardegna (n=1)						
Oristano				1		1
Totale	0	5	22	21	47	95

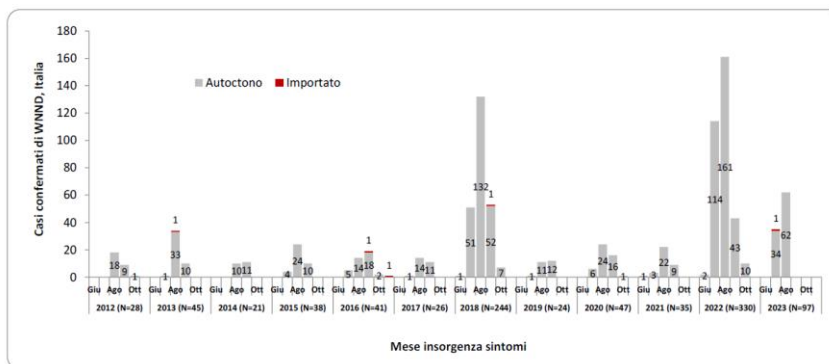


Figure 1. Trend of confirmed WNNND cases by symptom onset month. Italy: 2012 – 2023.

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Horses

2 WND outbreaks have been confirmed in equids in **Piemonte** region.

Region	Province	No. Outbreaks	No. Clinical Outbreak	Equids in outbreaks				Prevalence%	Letality%
				No. Susceptible	No. total cases	Clinical cases	Dead		
PIEMONTE	Asti	1	1	30	1	1	1	6,7	50
	Biella	1	1	24	1	1	0	4,2	0



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Resident birds of target species

CESME confirmed WNV in **61 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*)**



Region	Province	Carrion Crow	Magpie	Jay
Lombardia	Milano	1	2	0
	Mantova	0	1	0
	Varese	1	0	0
Emilia Romagna	Parma	7	8	1
	Bologna	0	3	0
	Ferrara	0	2	0
	Reggio Emilia	1	1	0
	Forlì Cesena	0	3	3
	Piacenza	3	2	0
	Ravenna	0	2	0
Sardegna	Sud Sardegna	3	0	0
	Sassari	1	0	0
	Oristano	2	0	0
Piemonte	Torino	1	1	1
	Novara	2	0	0
	Alessandria	0	1	0
	Cuneo	0	1	0
	Vercelli	1	0	0
Veneto	Treviso	0	1	0
	Venezia	0	1	0
	Verona	1	0	1
	Padova	0	0	1
Liguria	Imperia	0	0	1
Total		61		

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**

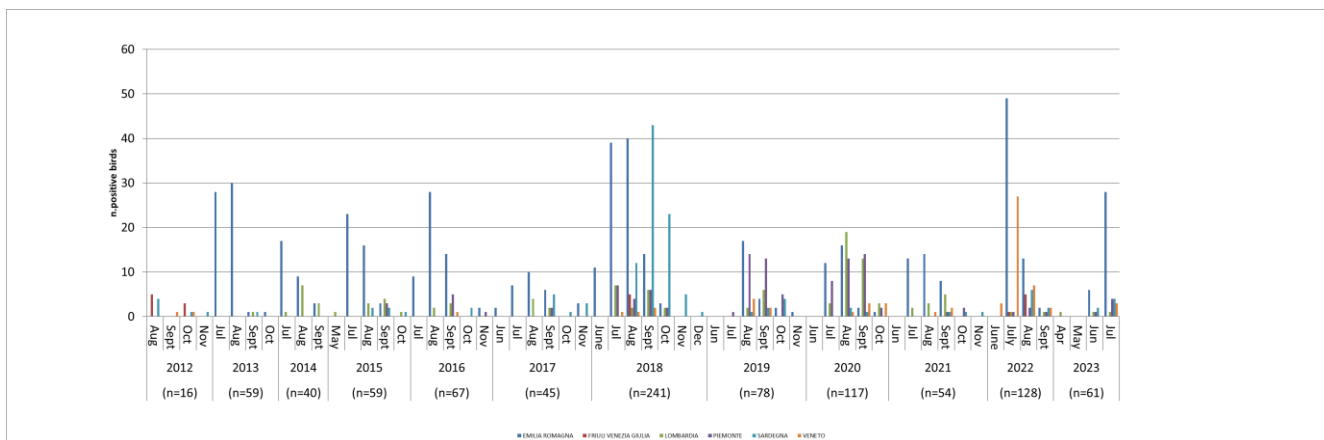


Figure 2 Spatio-temporal distribution West Nile virus detection in birds belong to target species - **2023**

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Wild birds

CESME confirmed WNV in **28 wild birds** from **Emilia Romagna, Piemonte, Sardegna, Veneto and Lombardia** regions. The circulating strains belong to **Lineage 2**.



Region	Province	n.birds
Emilia Romagna	Bologna	1
	Ferrara	1
	Parma	1
	Piacenza	1
	Reggio Emilia	3
	Rimini	1
Lombardia	Brescia	1
	Como	2
	Mantova	1
	Varese	3
Piemonte	Asti	1
	Cuneo	1
	Novara	1
	Torino	2
Sardegna	Sassari	2
Veneto	Padova	2
	Venezia	2
	Verona	2
Total		28

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

Table 2 West Nile virus detection in wild birds **2023**

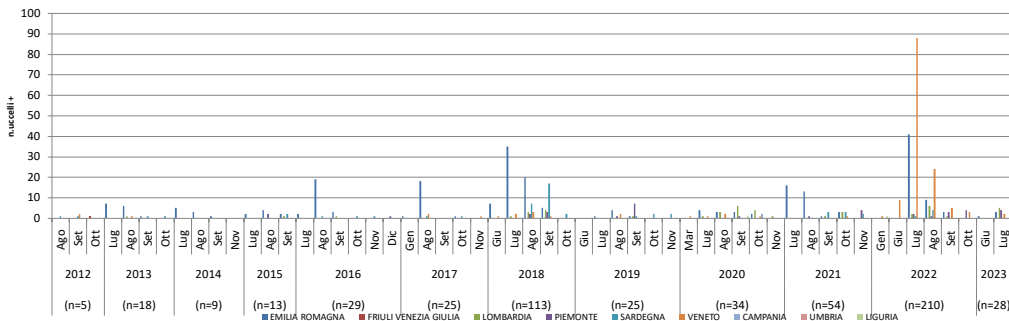


Figure 4 Spatio-temporal distribution West Nile virus detection in wild birds - **2023**

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Entomological surveillance

WNV genome has been reported in **90 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**



Region	Province	n.pool
Sicilia	Catania	1
	Piacenza	12
Emilia Romagna	Parma	7
	Forli 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
Piemonte	Torino	2
	Alessandria	2
Veneto	Rovigo	4
	Treviso	1
	Venezia	4
	Padova	4
Sardegna	Oristano	1
	Puglia	BAT
Friuli Venezia Giulia	Udine	1
	Pordenone	1
Liguria	Savona	1
Total		90

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

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

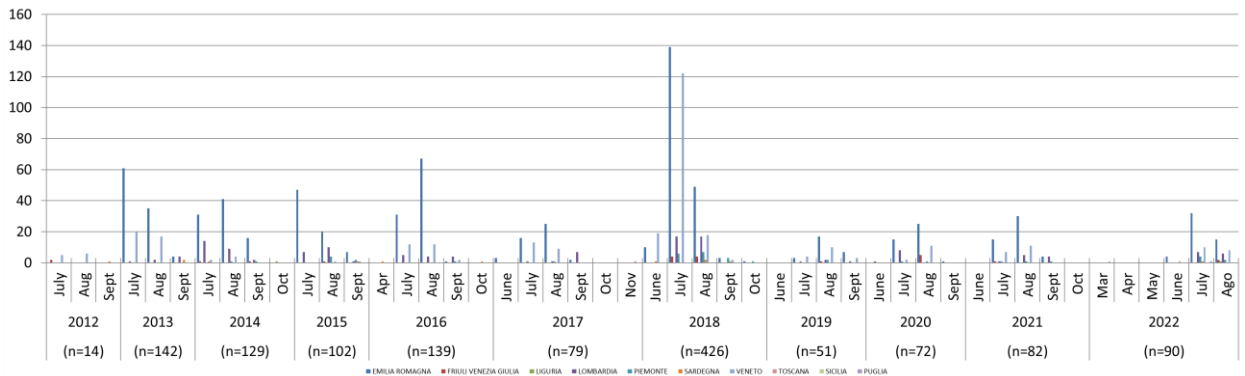


Figure 6 Spatio-temporal distribution West Nile virus detection in mosquitoes - **2023**

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Poultry surveillance

- No WND outbreaks have been confirmed in poultry flocks.



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USUTU virus surveillance

Usutu virus was identified in **44 mosquito pools** and **6 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**

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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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