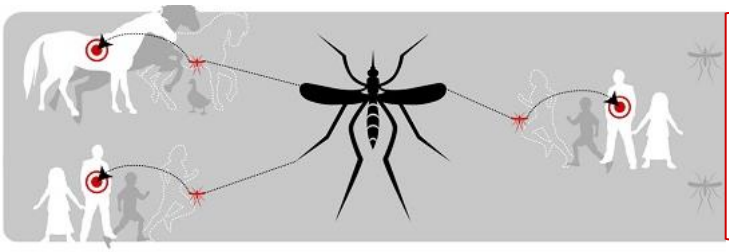


Integrated surveillance of West Nile and Usutu virus

Epidemiological report no. 16 4 November 2021
National data

1 In Evidence

This report summarizes the results of West Nile virus and the Usutu virus surveillance activities in Italy, updated to **3-11- 2021.**

- Since June 2021 **55 human case of WNV infection** has been reported from **Liguria, Emilia Romagna, Lombardia, Veneto and Friuli Venezia Giulia and Piemonte regions**.
- Surveillance in mosquitoes, resident birds, wild birds, poultry and horses confirmed the circulation of WNV Lineage 2 in **Emilia Romagna, Piemonte, Veneto, Friuli Venezia Giulia, Sardegna and Lombardia** regions. **WNV Lineage 1** has been detected in a in **Padova** province.

- Since the beginning of the 2021 transmission season and as of 4 November 2021, EU/EEA countries have reported 138 human cases of WNV infection in Greece (56), Italy (55), Hungary (7), Romania (7), Spain (6), Germany (4) and Austria (3) and 9 deaths in Greece (7), Spain (1) and Romania (1). EU-neighbouring countries have reported 18 human cases of WNV infection in Serbia (18) and 3 deaths in Serbia (3).. (Source: ECDC 2021).

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

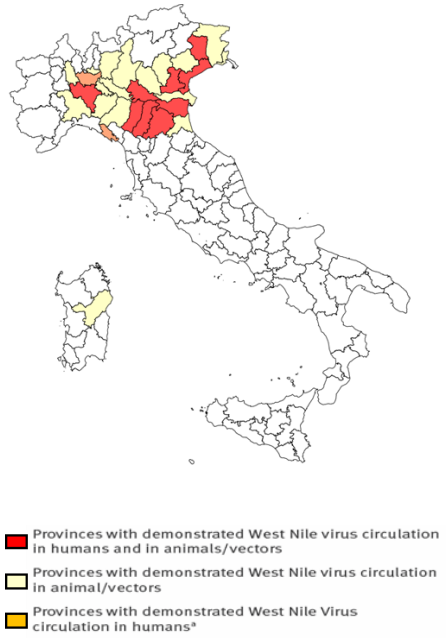
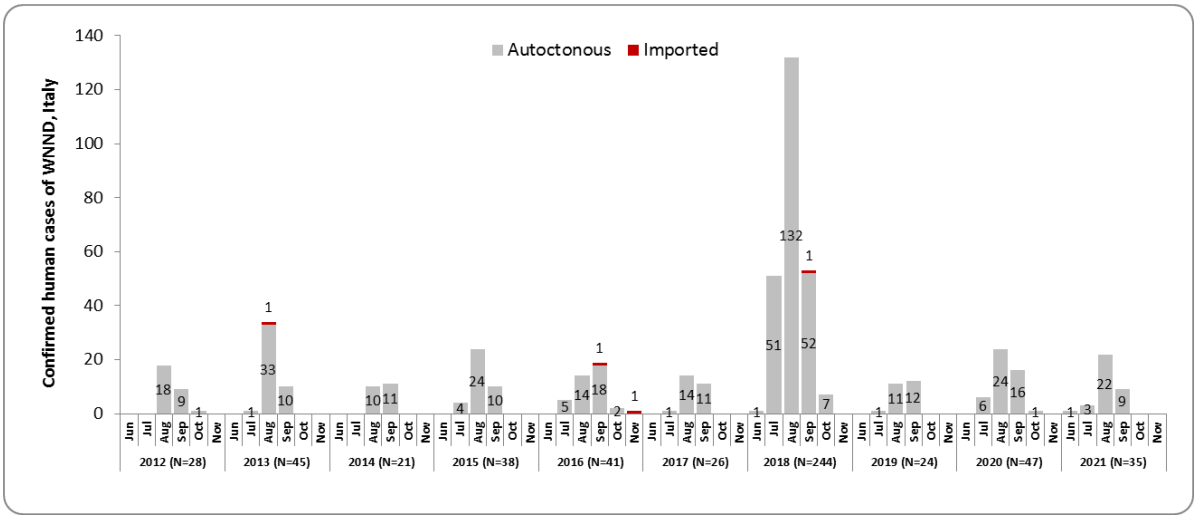


Figure 2. *Distribution of WNV human cases in EU*

2 Human

Since June 2021 **55** confirmed human cases of West Nile Virus (WNV) infection have been reported in Italy **35** in neuro-invasive form in Lombardia, Liguria, Friuli Venezia Giulia, Veneto, Piemonte and Emilia Romagna regions.

Details about WNND cases are provided below



Region/Province	Age group					Total
	<=14	15-44	45-64	65-74	>=75	
Emilia-Romagna						
Bologna			1		1	**2**
Ferrara					3	**3**
Modena			1		6	**7**
Piacenza			2		1	**3**
Reggio Emila				1	2	**3**
Friuli-Venezia Giulia						
Pordenone				1		**1**
Liguria						
La Spezia				1		**1**
Lombardia						
Cremona				2		**2**
Mantova			1	1	1	**3**
Milano				1		**1**
Pavia		1	1	1	2	**5**
Piemonte						
Alessandria					1	**1**
Veneto						
Padova				1	1	**2**
Venezia					1	**1**
Total	**0**	**1**	**6**	**9**	**19**	**35**

Figure 1. Trend of confirmed cases of WNND by month onset of symptoms. Italy: 2012 - 2021**.**

Integrated WN and Usutu virus surveillance

3 Horses

4 WND outbreaks in horses have been confirmed by the National Reference Centre for exotic diseases (CESME) in **Lombardia** region.

Figure 1 Geographical distribution West Nile virus detection in horses - **2021**

Region	Province	N. Outbreaks	N. Clinical outbreaks	Horses in outbreaks				Prevalence	Letality
				Suscepible	Total cases	Con segni clinici	Death		
LOMBARDIA	BERGAMO	1	1	37	1	1	0	2,70%	0,00%
	MANTOVA	1	1	20	1	1	0	5,00%	0,00%
	PAVIA	1	1	25	1	1	0	4,00%	0,00%
	MILANO	1	1	40	1	1	0	2,50%	0,00%

Table 1 West Nile Disease in horses- **2021**

4 Resident birds of target species

CESME confirmed WND in **49** resident birds of target species in **Lombardia and Emilia Romagna regions.** 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)***

Figure 2 Geographical distribution West Nile virus detection in resident birds of target species - **2021**

Region	Province	Carrion Crow	Magpie	Jay	n.birds+
EMILIA ROMAGNA	Modena		4		4
	Piacenza	3	3	1	7
	Ferrara		11		11
	Parma	3	2		5
	Reggio Emilia	4	3		7
LOMBARDIA	Bergamo	3	1		4
	Milano		3		3
	Mantova	1			1
VENETO	Vicenza		1		1
	Verona	1	1		2
PIEMONTE	Novara	1			1
SARDEGNA	Sassari	3			3
Total		19	29	1	49

Table 1 West Nile virus detection in resident birds- **2021**

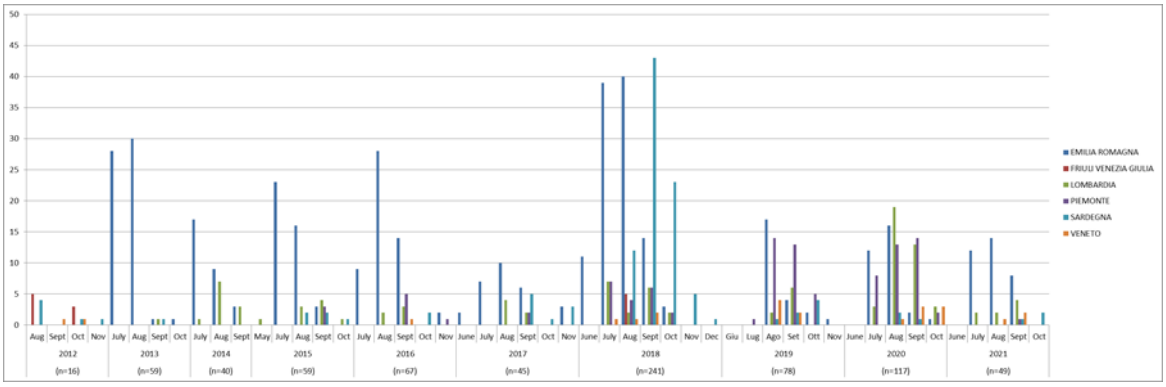


Figure 3 Spatio–temporal distribution West Nile virus detection in resident birds of target species - **2021**

5 Wild birds

WND has been detected in **43** wild birds in **Emilia Romagna, Veneto, Lombardia, Piemonte e Sardegna.**

Figure 4 Geographical distribution West Nile virus detection in wild birds - **2021**

Region	Province	n.birds+
EMILIA ROMAGNA	Bologna	3
	Ferrara	18
	Piacenza	9
	Modena	1
	Reggio Emilia	1
VENETO	Verona	1
	Venezia	2
LOMBARDIA	Pavia	2
	Varese	1
	Brescia	1
PIEMONTE	Alessandria	1
SARDEGNA	Nuoro	1
	Sassari	2
Total		**43**

Table 3 West Nile virus detection in wild birds- **2021**

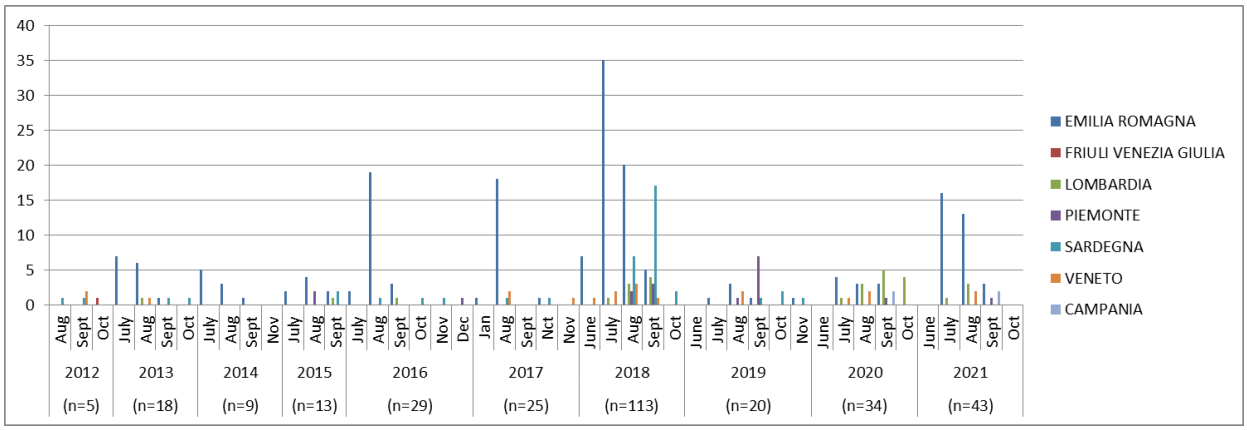


Figure 5 Spatio–temporal distribution West Nile virus detection in wild birds - **2021**

6 Entomological surveillance

WNV genome has been reported in **79** mosquito **pools** collected in **Emilia Romagna, Veneto, Friuli Venezia Giulia and Piemonte** region**.** The circulating strains belong to **Lineage 2**.WNV belong to Lineage 1 has been detected in a mosquitoes pool from **Padova** province.

Figure 6 Geographical distribution West Nile virus detection in mosquitoes - **2021**

Region	Province	n.pool+
EMILIA ROMAGNA	Bologna	12
	Ferrara	3
	Modena	10
	Piacenza	8
	Parma	3
	Reggio Emilia	13
FRIULI VENEZIA GIULIA	Udine	1
LOMBARDIA	Lodi	1
	Mantova	1
	Brescia	1
	Pavia	5
PIEMONTE	Novara	1
	Alessandria	2
VENETO	Rovigo	2
	Treviso	1
	Venezia	8
	Padova	1
	Verona	6
Total		79

Table 4 West Nile virus detection in mosquitoes- **2021**

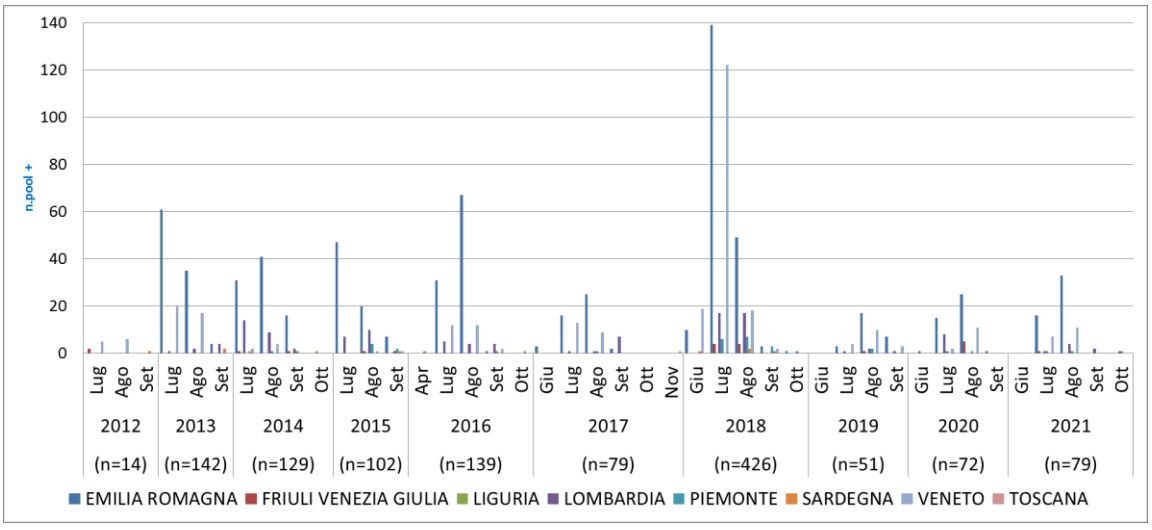


Figure 7 Spatio–temporal distribution West Nile virus detection in mosquitoes - **2021**

7

Poultry surveillance

- No WND outbreaks have been confirmed in poultry flocks.



8 USUTU virus surveillance

Usutu virus has been detected in **121** mosquitoes pools in **Emilia Romagna, Friuli Venezia Giulia, Lombardia, Lazio, Piemonte, Marche and Veneto** regions and **135** wild birds in **Emilia-Romagna ,Veneto , Sicilia, Marche e Toscana** regions.

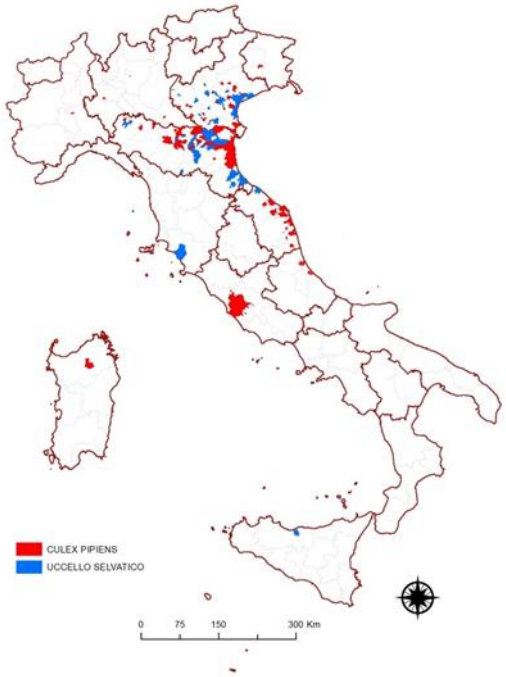


Figure 8 Geographical distribution Usutu virus detection in birds and mosquitoes - **2021**

Region	Province	n.pool+
EMILIA ROMAGNA	Bologna	12
	Ferrara	10
	Modena	13
	Rimini	3
	Parma	2
	Ravenna	2
	Piacenza	5
	Forl' Cesena	2
	Reggio Emilia	4
MARCHE	Ancona	9
	Ascoli Piceno	2
	Pesaro Urbino	1
	Macerata	5
	Fermo	5
PIEMONTE	Asti	1
VENETO	Rovigo	7
	Venezia	9
	Treviso	8
	Padova	4
	Verona	7
LOMBARDIA	Mantova	3
	Milano	1
FRIULI VENEZIA GIULIA	Pordenone	1
LAZIO	Roma	1
ABRUZZO	Teramo	2
	Pescara	1
SARDEGNA	Sassari	1
Total	**121**	

Table 5 Usutu virus detection in mosquitoes **-2021**

Region	Province	n.birds+
EMILIA ROMAGNA	Bologna	36
	Forlì-Cesena	8
	Rimini	29
	Ferrara	14
	Modena	2
	Piacenza	5
VENETO	Padova	9
	Venezia	10
	Vicenza	1
	Verona	5
	Rovigo	2
TOSCANA	Grosseto	1
SICILIA	Palermo	1
MARCHE	Pesaro urbino	11
REPUBBLICA DI SAN MARINO	San Marino	1
Total		**135**

Table 6 Usutu virus detection in birds - **2021**

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

The weekly report is prepared by:

A. Bella, G. Venturi, F. Riccardo – Department of Infectious diseases, ISS

F. Iapaolo, F. Monaco, P. Calistri – CESME, Istituto Zooprofilattico Sperimentale dell'Abruzzo e del Molise.

We gratefully acknowledge the support from the personnel of the Regions and the Local Health Services for sampling and data collection, the National Italian Blood Center, the National Italian Transplant Center, the Italian network of the Istituti Zooprofilattici Sperimentali and the Italian Ministry of Health.