

Integrated surveillance of West Nile and Usutu virus

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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 **23 September 2020**.

- Since the beginning of June 2020, 22 confirmed human cases of West Nile Virus (WNV) infection have been reported in Italy, of these 16 manifested in the neuro-invasive form (13 in Lombardy, 2 in Emilia-Romagna, 1 in Piedmont), 3 cases as confirmed fever (3 in Lombardy), 3 cases identified in blood donors (1 in Piedmont, 1 in Emilia-Romagna, 1 in Lombardy).
- One case diagnosed in Lombardia last week which stayed in the Province of Verbano-Cusio-Ossola and classified as "confirmed" neuro-invasive was reclassified by the a "probable" case. No deaths were reported. In the same period, no cases of Usutu virus were reported.
- Veterinary surveillance confirmed the circulation of WNV lineage 2 in mosquitoes pool collected in **Emilia-Romagna, Piemonte, Veneto, Sardegna, Lombardia and Friuli Venezia Giulia**.
- Since the start of the 2020 transmission season and as of 17 September 2020, EU Member States have reported 209 human cases of WNV infection and 21 deaths through TESSy: Greece (109, including 16 deaths), Spain (61, including five deaths), Italy (32), Romania (4) and Hungary (3). All cases were reported from areas that have been affected during previous transmission seasons. No cases have been reported from EU-neighbouring countries..(Fonte: [ECDC 2019](#)).

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

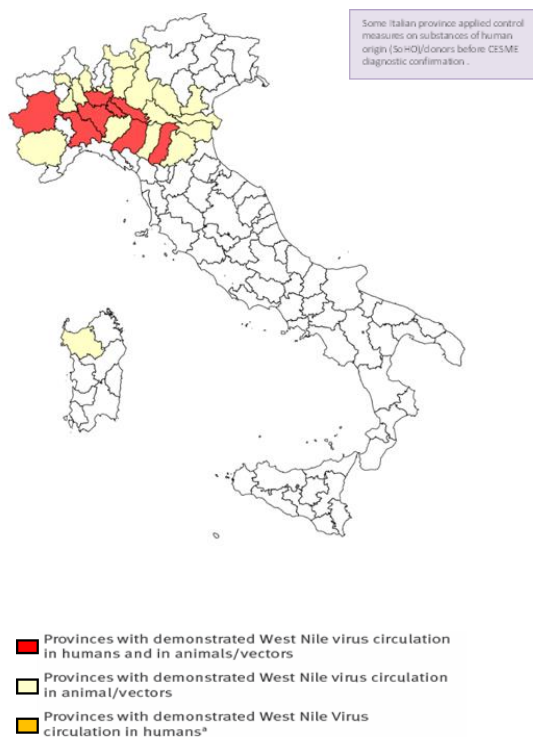


Figure 2. Distribution of WNV human cases in EU



2

Human

Since the beginning of June 2020, 22 confirmed human cases of West Nile Virus (WNV) infection have been reported in Italy, of these 16 manifested in the neuro-invasive form (13 in Lombardy, 2 in Emilia-Romagna, 1 in Piedmont), 3 cases as confirmed fever (3 in Lombardy), 3 cases identified in blood donors (1 in Piedmont, 1 in Emilia-Romagna, 1 in Lombardy

Details about WND cases are provided below

Region/Province	Age group					Total
	<=14	15-44	45-64	65-74	>=75	
Emilia-Romagna						
Bologna			2			2
Modena				1		1
Parma					1	1
Piemonte						
Alessandria			1		1	2
Vercelli			1			1
Lombardia						
Brescia				1		1
Cremona				2	1	3
Lodi			2	2	5	9
Milano			3	3	1	7
Pavia			1		3	4
Varese				1		1
Total	0	0	10	10	12	32

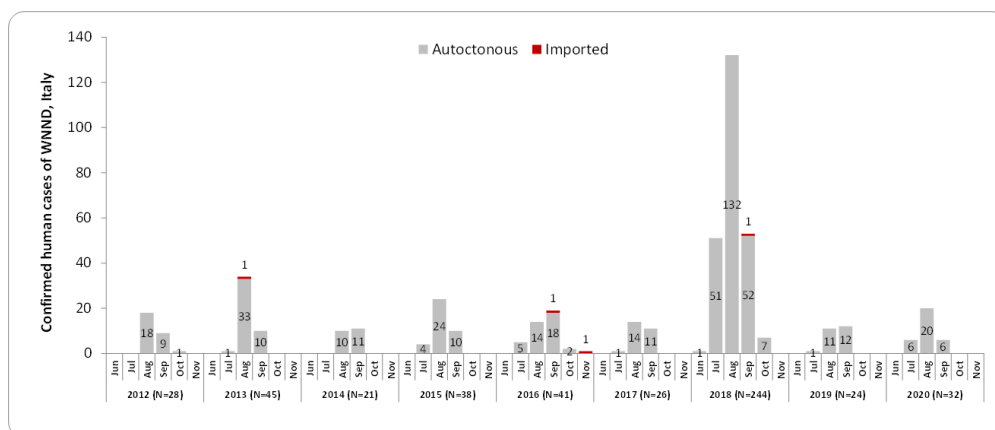


Figure 1 Trend of confirmed cases of WNV per month onset symptoms. Italy: 2012 - 2020.

3

Horses

9 WND outbreaks have been confirmed by the National Reference Centre for exotic diseases (CESME) in **Lombardia, Emilia Romagna, Piemonte** and **Sardegna**.



Figure 2 Geographical distribution of West Nile Disease outbreaks in horses -2020

Region	Province	N. Outbreaks	N. Clinical Outbreaks	Horses in outbreaks				Prevalence	Clinical prevalence	Letality
				Susceptible	Total cases	Clinical cases	Death/Killed			
LOMBARDIA	BERGAMO	2	2	54	3	3	0	5,556%	5,556%	0,000%
	BRESCIA	1	1	30	1	1	0	1,852%	3,333%	0,000%
	CREMONA	2	2	5	2	2	0	0,400%	0,400%	0,000%
SARDEGNA	SASSARI	1	1	7	1	1	0	0,140%	0,140%	0,000%
PIEMONTE	TORINO	1	1	17	1	1	0	0,050%	0,050%	0,000%
EMILIA ROMAGNA	MODENA	1	1	31	1	1	0	3,226%	3,226%	0,000%
	PIACENZA	1	1	36	1	1	1	0,027%	0,027%	100,000%

Table 2 Outbreaks and cases of WND in horses- 2020

4

Resident birds of target species

CESME confirmed WND **64** cases in resident birds of target species in **Piemonte, 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*)



REGION	PROVINCE	CARRION CROW	MAGPIE	JAY	Total
EMILIA ROMAGNA	BOLOGNA		1		1
	FERRARA		13		13
	MODENA		1		1
	PARMA	1	4		5
	PIACENZA	2			2
	REGGIO EMILIA		3		3
LOMBARDIA	BERGAMO	3			3
	LODI		1		1
	MANTOVA	1	1		2
	MILANO	2	4		6
	MONZA E DELLA BRIANZA		1		1
	SONDRIO	1		2	3
	VARESE	1			1
	PAVIA	1			1
PIEMONTE	ALESSANDRIA		1		1
	CUNEO	6	5		11
	TORINO	4			4
	BIELLA	1			1
	VERBANIA	2			2
SARDEGNA	SASSARI	2			2
Total		27	35	2	64

Table 3 West Nile virus detection in resident birds to target species- 2020

Figure 3 Geographical distribution West Nile virus detection in resident birds of target species - 2020

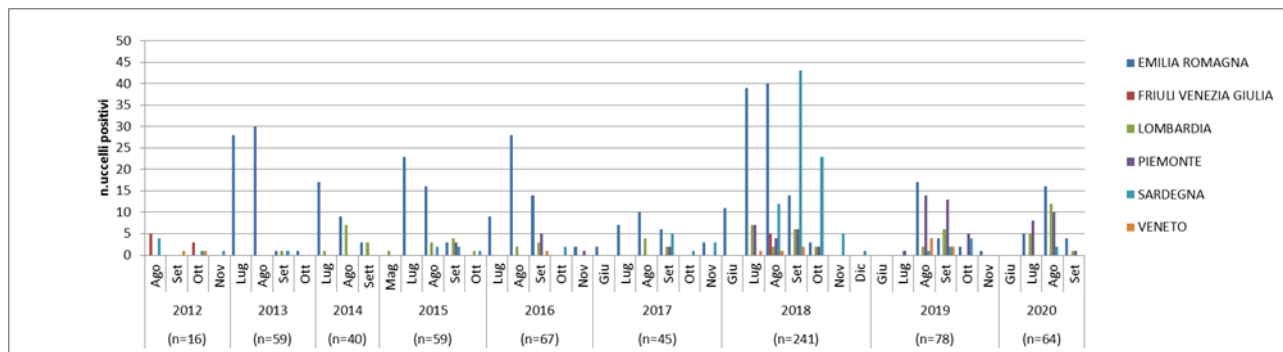


Figure 4 Spatio-temporal distribution West Nile virus detection in resident birds of target species - 2020

5

Table 4 WND cases in wild birds - 2020

Bar chart showing the number of positive cases (nuclei positivi) by region (EMILIA ROMAGNA, FRIULI VENEZIA GIULIA, LOMBARDIA, PIEMONTE, SARDEGNA, VENETO) from August 2012 to August 2020. The y-axis represents the number of positive cases (0 to 40). The x-axis shows months (Ago, Set, Ott, Nov, Dic, Gen, Feb, Mar, Apr, Mag, Giu, Lug, Ago, Set, Ott, Nov, Dic, Gen, Feb, Mar, Apr, Mag, Giu, Lug, Ago) grouped by year (2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020). The chart shows a significant peak in Emilia Romagna in August 2018 (n=113) and a smaller peak in Piemonte in August 2019 (n=20).

Figure 6 Spatio-temporal distribution West Nile virus detection in wild birds- 2020

6

Entomological surveillance

WNV genome has been reported in **70** mosquito **pools** collected in **Emilia Romagna, Piemonte, Veneto, Friuli Venezia Giulia** and **Lombardia** regions. The circulating strains belong to **Lineage 2**.



REGION	PROVINCE	Total
EMILIA ROMAGNA	FERRARA	1
	BOLOGNA	5
	MODENA	4
	PARMA	7
	PIACENZA	16
	REGGIO EMILIA	8
LOMBARDIA	BRESCIA	1
	CREMONA	3
	LODI	3
	MILANO	2
PIEMONTE	VERCELLI	1
	NOVARA	1
VENETO	VERONA	8
	VENEZIA	2
	ROVIGO	3
FRIULI VENEZIA GIULIA	PORDENONE	5
Total		70

Table 5 West Nile virus detection in mosquitoes-
2020

Figure 7 Geographical distribution West Nile virus
detection in mosquitoes - **2020**

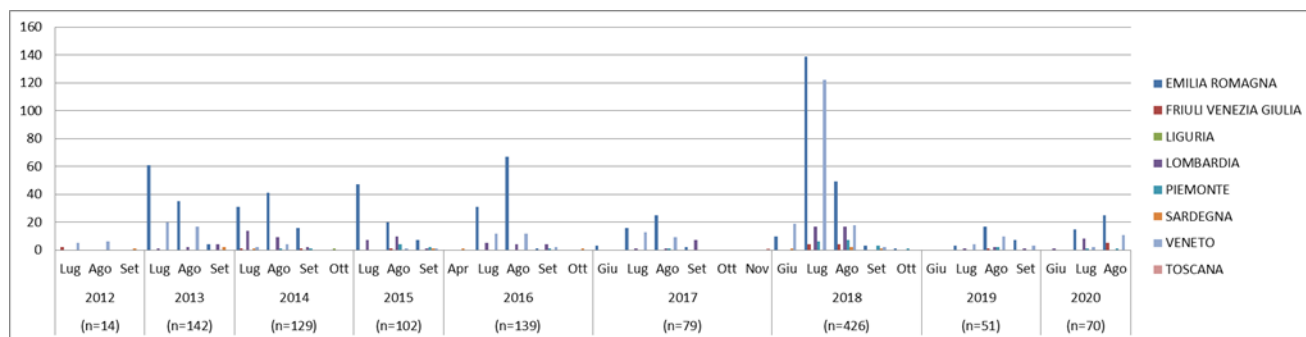


Figure 8 Spatio-temporal distribution West Nile virus detection in mosquitoes - **2020**

7

Poultry surveillance

- **No WND outbreaks have been confirmed in poultry flocks.**



8

USUTU virus surveillance

Usutu virus has been detected in **93** mosquitoes pools and **25** birds in **Abruzzo Emilia-Romagna, Friuli Venezia Giulia, Piemonte and Veneto** regions.



Figure 9 Geographical distribution Usutu virus detection in birds and mosquitoes - 2020

REGION	PROVINCE	n.pool
EMILIA ROMAGNA	BOLOGNA	7
	FERRARA	7
	FORLI-CESENA	2
	MODENA	15
	PARMA	5
	PIACENZA	10
	RAVENNA	3
FRIULI VENEZIA GIULIA	REGGIO EMILIA	12
	PORDENONE	1
PIEMONTE	UDINE	1
	ALESSANDRIA	1
VENETO	PADOVA	8
	ROVIGO	2
	TREVISO	2
	VICENZA	1
	VERONA	7
LOMBARDIA	VENEZIA	3
	COMO	1
	MANTOVA	2
	MILANO	1
ABRUZZO	TERAMO	2
Total		93

Table 6 Usutu virus detection in mosquitoes -2020

REGION	PROVINCE	n.birds
EMILIA ROMAGNA	BOLOGNA	4
	FORLI-CESENA	6
	PIACENZA	1
	FERRARA	5
	RAVENNA	1
	PARMA	1
	PIACENZA	1
	RIMINI	3
VENETO	PADOVA	1
	VICENZA	1
	VENEZIA	1
Total		25

Table 7 Usutu virus detection in birds - 2020

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

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