

Integrated surveillance of West Nile and Usutu virus

Epidemiological report no. 8 10 September 2020
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 **9 September 2020**.

- Since the beginning of June 2020, 32 confirmed human cases of West Nile Virus (WNV) infection have been reported in Italy, of which 25 manifested in the neuro-invasive form (20 in Lombardy, 4 in Emilia-Romagna, 1 in Piedmont), 3 cases as confirmed fever (3 in Lombardy), 4 cases identified in blood donors (1 in Piedmont, 2 in Emilia-Romagna, 1 in Lombardy). No deaths were reported. In the same period, no cases of Usutu virus were reported. No deaths were reported. In the same period, no cases of Usutu virus were
- Veterinary surveillance confirmed the circulation of WNV lineage 2 in mosquitoes pool collected in **Emilia-Romagna, Piemonte, Veneto, Sardegna and Lombardia**. Positive results are being confirmed in the provinces of Vercelli and Biella.
- Since the beginning of the 2020 transmission season and as of 3 September 2020, EU Member States have reported 159 human cases of WNV infection and 12 deaths through TESSy: Greece (77, including nine deaths), Spain (49, including three deaths), Italy (29), and Romania (4). 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)

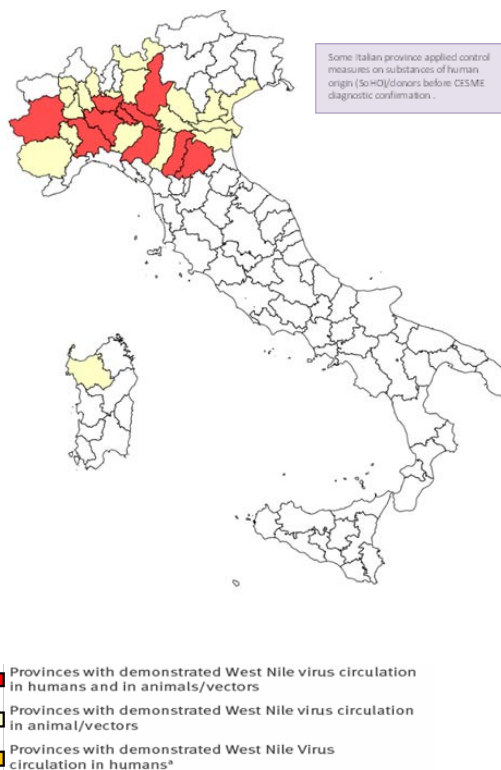


Figure 2. Distribution of WNV human cases in EU



2

Human

Since June 2020, the start of surveillance, 32 cases confirmed by West Nile Virus (WNV) have been reported in Italy, 25 of which have manifested neuro-invasive symptoms (Table 1) all autochthonous cases, 4 are blood donors (1 Parma, 1 Turin, 1 Milan, 1 Bologna) and 3 cases of confirmed fever (3 Lodi).

Details about WND cases are provided below

Region/Province	Age group					Total
	<=14	15-44	45-64	65-74	>=75	
Emilia-Romagna						
Bologna			1			1
Modena				1		1
Parma					1	1
Piemonte						
Alessandria			1			1
Lombardia						
Brescia				1		1
Cremona				2	1	3
Lodi			2	2	5	9
Milano			3	3		6
Pavia			1		1	2
Total	0	0	8	9	8	25

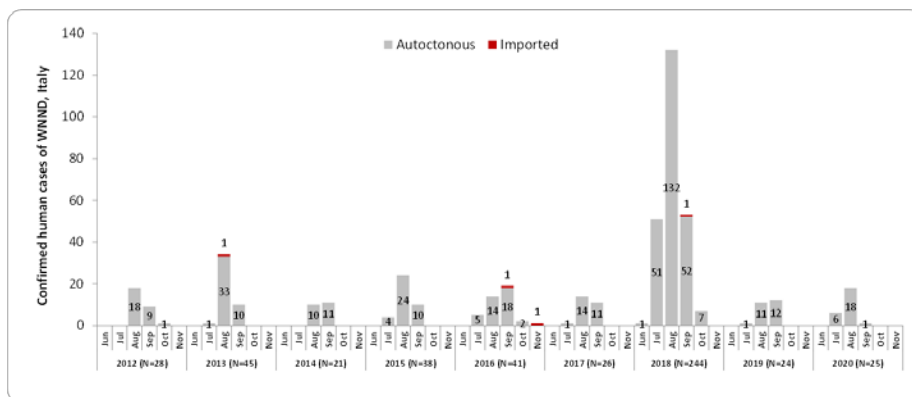


Figure 1 Trend of confirmed cases of WND per month onset symptoms. Italy: 2012 - 2020.

3

Horses

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

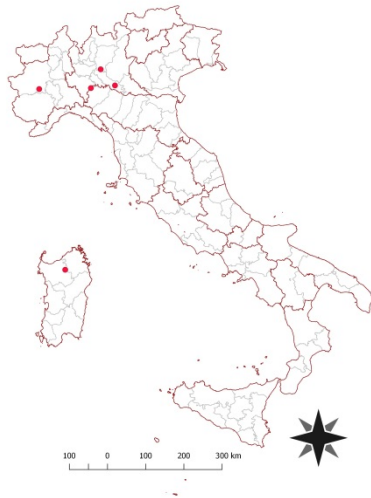


Figure 2 Geographical distribution of West Nile Disease outbreaks in horses -2020

Region	Province	N. Outbreaks	N. Clinical Outbreaks	Horses in outbreaks				Prevalence	Clinical prevalence	Letality
				Susceptible	Total cases	Clinical cases	Death/Killed			
LOMBARDIA	BERGAMO	1	1	40	1	1	0	0,025%	0,025%	0
	CREMONA	1	1	3	1	1	0	0,330%	0,330%	0
SARDEGNA	SASSARI	1	1	7	1	1	0	0,140%	0,140%	0
PIEMONTE	TORINO	1	1	17	1	1	0	0,050%	0,050%	0
EMILIA ROMAGNA	PIACENZA	1	1	36	1	1	1	0,027%	0,027%	100%

Table 2 Outbreaks and cases of WND in horses- 2020

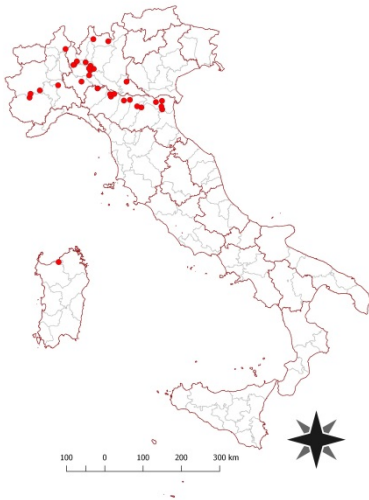
4

Resident birds of target species

CESME confirmed WND 45 cases in resident birds of target species in **Piemonte, Lombardia, Sardegna 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	PARMA	1	4		5
	REGGIO EMILIA		2		2
	BOLOGNA		1		1
	FERRARA		10		10
	PIACENZA	1			1
	MODENA		1		1
LOMBARDIA	BERGAMO	1			1
	LODI		1		1
	MANTOVA	1			1
	MILANO	2	3		5
	SONDRIO	1		2	3
	VARESE	1			1
	MONZA E BRIANZA		1		1
	ALESSANDRIA		1		1
PIEMONTE	TORINO	2			2
	VERBANO-CUSIO_OSSOLA	1			1
	CUNEO	6			6
SARDEGNA	SASSARI	2			2
Total		19	24	2	45

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

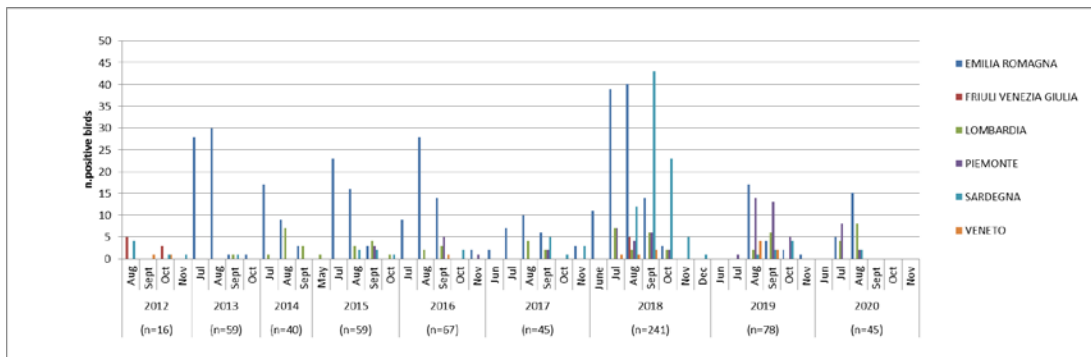


Figure 4 Spatio-temporal distribution West Nile virus detection in resident birds of target species - 2020

5

Wild birds

CESME confirmed **8 WND cases** in wild birds in **Veneto, Emilia Romagna and Lombardia** regions. Molecular test classified the viral strain within **Lineage 2**.



REGION	PROVINCE	n.birds
VENETO	VENEZIA	1
	PADOVA	1
LOMBARDIA	PAVIA	1
	MILANO	1
EMILIA ROMAGNA	FERRARA	1
		1
	PIACENZA	1
Total		8

Table 4 WND cases in wild birds - 2020

Figure 5 Geographical distribution West Nile virus detection in wild birds- 2020

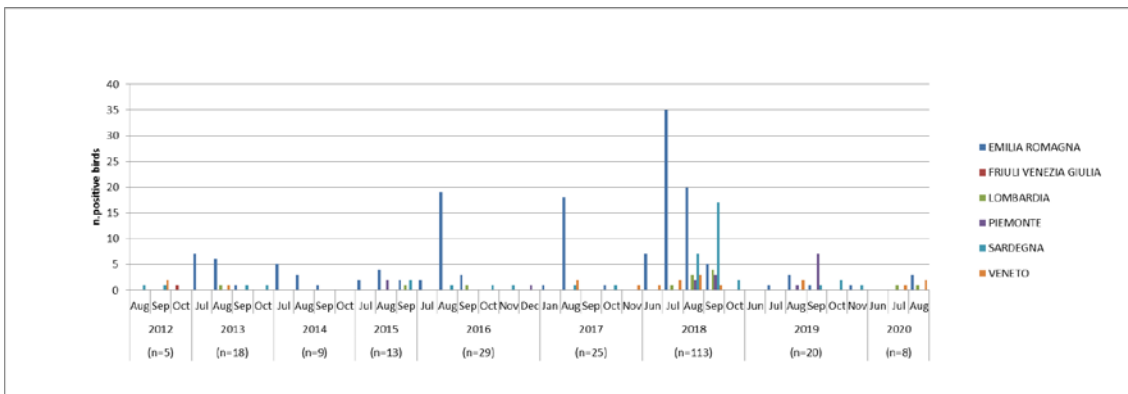
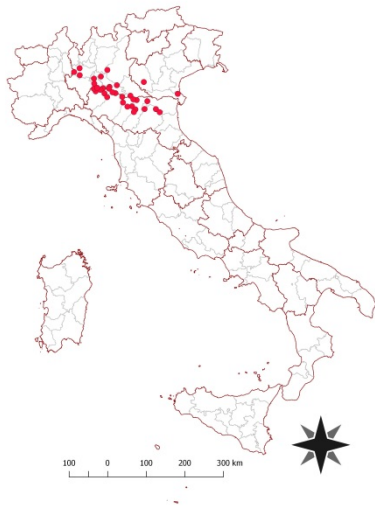


Figure 6 Spatio-temporal distribution West Nile virus detection in wild birds- 2020

6

Entomological surveillance

WNV genome has been reported in **53 mosquito pools** collected in **Emilia Romagna, Piemonte, Veneto** and **Lombardia** regions. The circulating strains belong to **Lineage 2**.



REGION	PROVINCE	Total
EMILIA ROMAGNA	BOLOGNA	3
	MODENA	4
	PARMA	7
	PIACENZA	16
	REGGIO EMILIA	7
LOMBARDIA	BRESCIA	1
	CREMONA	3
	LODI	3
	MILANO	2
PIEMONTE	NOVARA	1
	VERONA	4
VENETO	VENEZIA	1
	ROVIGO	1
	Total	53

Table 5 West Nile virus detection in mosquitoes- **2020**

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

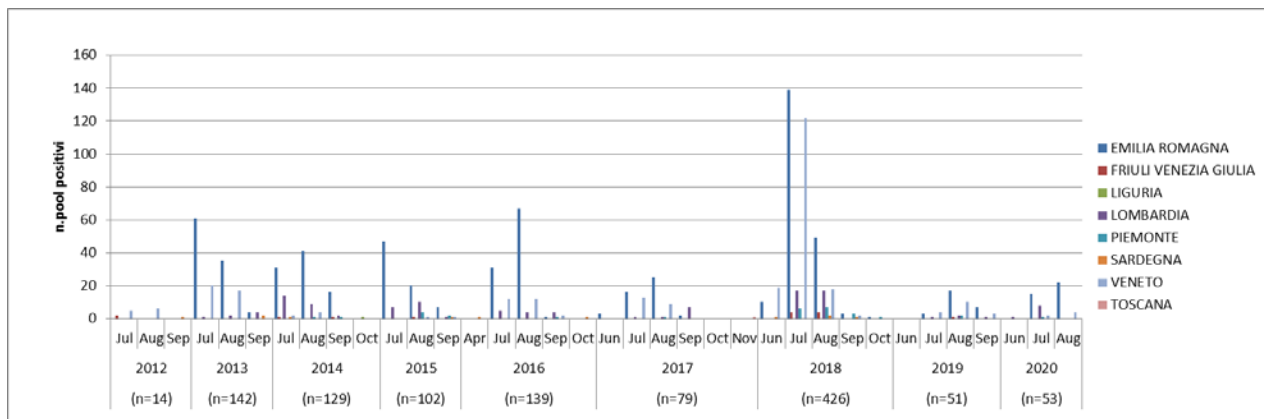


Figure 8 Spatio-temporal distribution West Nile virus detection in mosquitoes - **2020**

7

Poultry surveillance

- No WND outbreaks have been confirmed in poultry flocks.



8

USUTU virus surveillance

Usutu virus has been detected in **70** mosquitoes pools and **22** bird in **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	6
	FERRARA	6
	FORLI-CESENA	2
	MODENA	14
	PARMA	3
	PIACENZA	9
	RAVENNA	3
FRIULI VENEZIA GIULIA	UDINE	12
FRIULI VENEZIA GIULIA	UDINE	1
PIEMONTE	ALESSANDRIA	1
VENETO	PADOVA	6
	ROVIGO	1
	TREVISO	2
	VERONA	3
LOMBARDIA	MILANO	1
Total		70

Table 6 Usutu virus detection in mosquitoes -2020

REGION	PROVINCE	n.birds
EMILIA ROMAGNA	BOLOGNA	4
	FORLI-CESENA	6
	PIACENZA	1
	FERRARA	4
	RAVENNA	1
	RIMINI	3
VENETO	PADOVA	1
	VICENZA	1
	VENEZIA	1
Total		22

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 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.