

Integrated surveillance of West Nile and Usutu virus

Epidemiological report no.11 1 October 2020
National data

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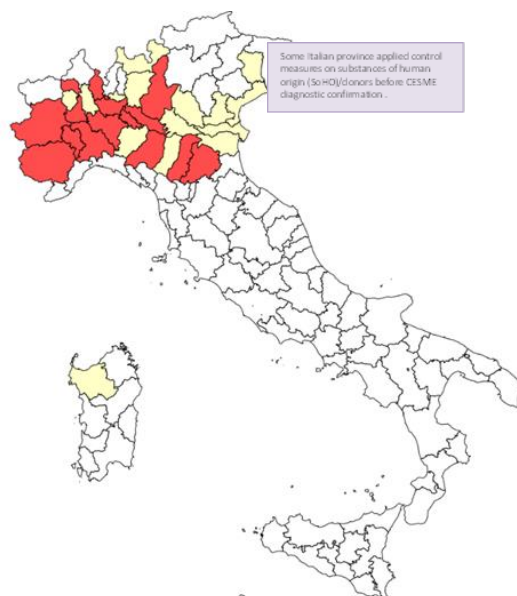
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In Evidence

This report summarizes the results of West Nile virus and the Usutu virus surveillance activities in Italy, updated to **29 September 2020**.

- Since the beginning of June 2020 they have been 54 confirmed human cases reported in Italy of West Nile Virus (WNV) infection, of these 37 manifested in form neuro-invasive (26 in Lombardy, 5 in Emilia-Romagna, 4 in Piedmont, 2 in Veneto), 4 cases as confirmed fever (3 in Lombardy, 1 in Piedmont), 13 cases identified in blood donors (4 in Piedmont, 3 in Emilia-Romagna, 6 in Lombardy). Among the cases, 3 were reported deaths (1 in Piedmont and 2 in Lombardy). In the same period the first case of Usutu virus in Veneto in neuroinvasive form.
- 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**.
- 1 October 2020, the EU Member States reported 257 human cases of WNV's which 30 deaths: 130 in Greece (of which 20 deaths), 72 in Spain (including 7 deaths), 43 in Italy (of which 3 deaths), 5 in Germany, 4 in Romania and 3 in Hungary. No case reported by neighboring countries.(Fonte: [ECDC 2019](#)).

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



- Provinces with demonstrated West Nile virus circulation in humans and in animals/vectors
- Provinces with demonstrated West Nile virus circulation in animal/vectors
- Provinces with demonstrated West Nile Virus circulation in humans*

Figure 2. Distribution of WNV human cases in EU



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Human

Since the beginning of June 2020 they have been 54 confirmed human cases reported in Italy of West Nile Virus (WNV) infection, of these 37 manifested in form neuro-invasive (26 in Lombardy, 5 in Emilia-Romagna, 4 in Piedmont, 2 in Veneto), 4 cases as confirmed fever (3 in Lombardy, 1 in Piedmont), 13 cases identified in blood donors (4 in Piedmont, 3 in Emilia-Romagna, 6 in Lombardy). Among the cases, 3 were reported deaths (1 in Piedmont and 2 in Lombardy). In the same period the first case of Usutu virus in Veneto in neuroinvasive form.

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
Novara				1		1
Vercelli			1			1
Lombardia						
Brescia				1		1
Cremona				2	1	3
Lodi			2	2	5	9
Mantova			1			1
Milano			3	3	2	8
Pavia			1		3	4
Varese				1		1
Veneto						
Venezia					1	1
Verona			1			1
Total	0	0	12	11	14	37

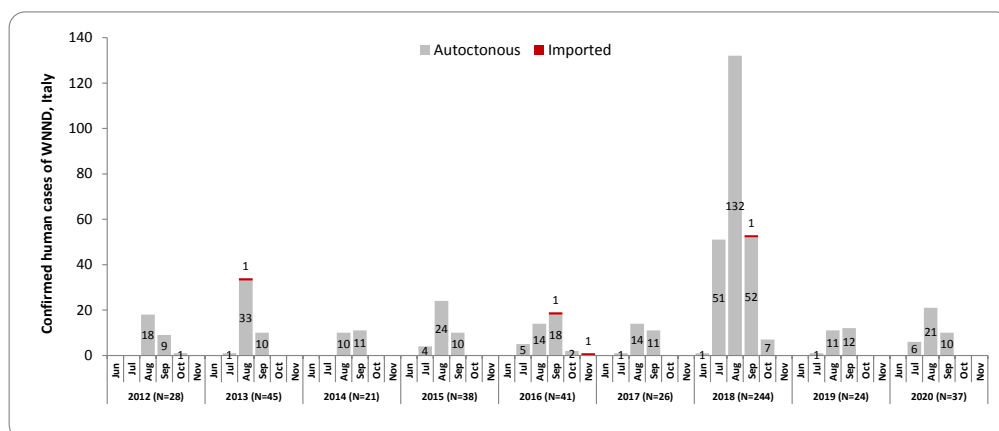


Figure 1 Trend of confirmed cases of WNV per month onset symptoms. Italy: 2012 - 2020.

Integrated WN and Usutu virus surveillance

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Horses

10 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

Regione	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	2	2	0	0,030%	0,030%	0
	CREMONA	2	2	5	2	2	0	0,400%	0,400%	0
	BRESCIA	2	2	110	4	4	1	0,04%	0,04%	0,25%
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	MODENA	1	1	31	1	1	0	0,030%	0,030%	0
	PIACENZA	1	1	36	1	1	1	0,027%	0,027%	100%

Table 2 Outbreaks and cases of WND in horses- 2020

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Resident birds of target species

CESME confirmed WND **84** 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	PARMA	1	4		5
	REGGIO EMILIA		3		3
	BOLOGNA		1		1
	FERRARA		13		13
	PIACENZA	4			4
	MODENA		1		1
LOMBARDIA	BERGAMO	3	1		4
	LODI		1		1
	MANTOVA	1	2		3
	MILANO	2	4		6
	SONDRIO	1		2	3
	VARESE	1			1
	PAVIA	2			2
	MONZA E BRIANZA		1		1
	ALESSANDRIA		1		1
	BIELLA	1			1
PIEMONTE	TORINO	12			12
	VERBANO-CUSIO_OSSOLA	2			2
	CUNEO	8	8		16
	SARDEGNA	2			2
VENETO	VERONA		2		2
Total		40	42	2	84

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

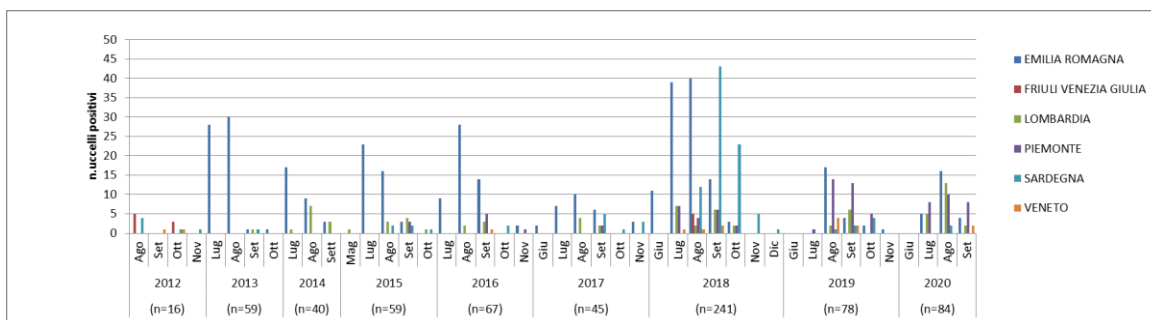


Figure 4 Spatio-temporal distribution West Nile virus detection in resident birds of target species - 2020

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Wild birds

CESME confirmed **14** 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
		1
LOMBARDIA	PAVIA	1
	BERGAMO	1
	BRESCIA	1
	MILANO	1
		1
EMILIA ROMAGNA	FERRARA	1
		1
	PIACENZA	1
PIEMONTE	CUNEO	1
Totale		14

Table 4 WND cases in wild birds - 2020

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

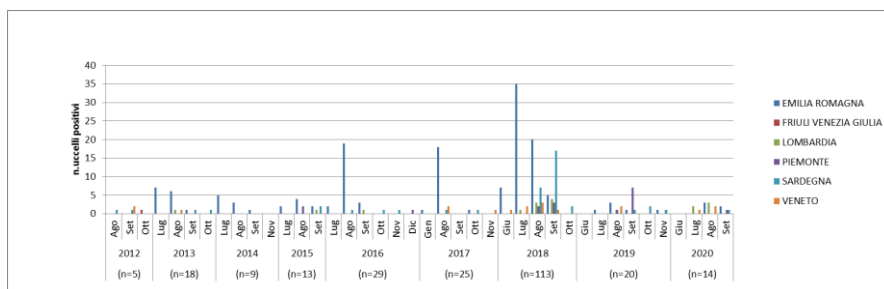
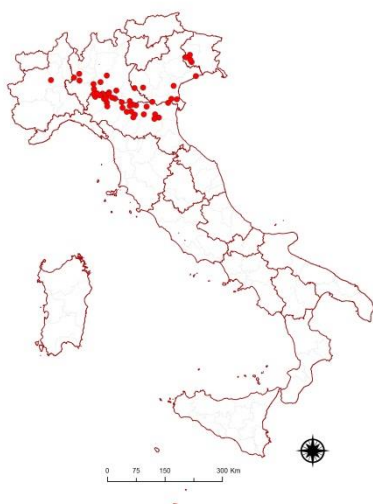


Figure 6 Spatio-temporal distribution West Nile virus detection in wild birds- 2020

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Entomological surveillance

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



REGIONE	PROVINCIA	Totale
EMILIA ROMAGNA	FERRARA	1
	BOLOGNA	6
	MODENA	4
	PARMA	7
	PIACENZA	17
	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
Totale		72

Table 5 West Nile virus detection in mosquitoes-
2020

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

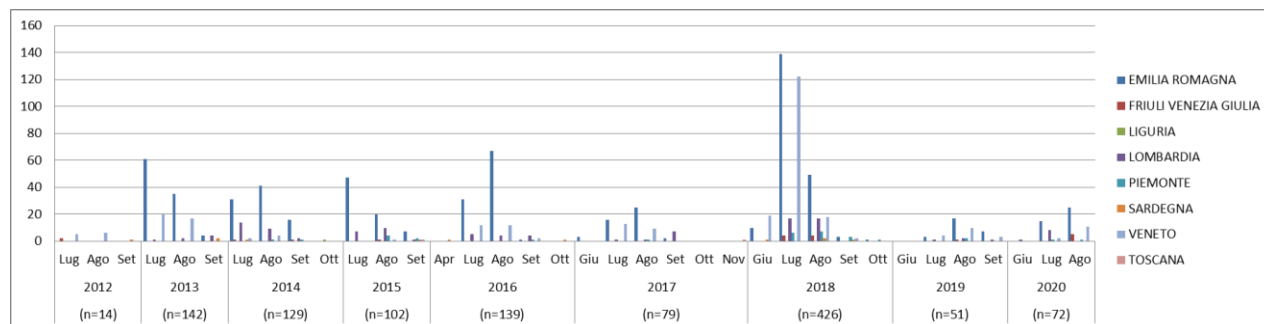


Figure 8 Spatio-temporal distribution West Nile virus detection in mosquitoes - **2020**

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Poultry surveillance

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



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USUTU virus surveillance

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

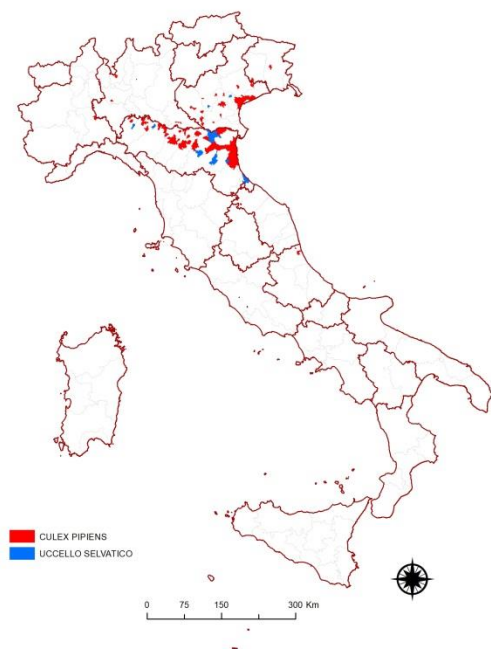


Figure 9 Geographical distribution Usutu virus detection in birds and mosquitoes - 2020

REGIONE	PROVINCIA	n.capi
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
Totale		25

Table 6 Usutu virus detection in mosquitoes -2020

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

Table 7 Usutu virus detection in birds - 2020

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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 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](#)

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