



HELLENIC CENTRE FOR DISEASE CONTROL AND PREVENTION (HCDCP-KEELPNO)

MINISTRY OF HEALTH

**WEEKLY EPIDEMIOLOGICAL REPORT
WEST NILE VIRUS INFECTION, GREECE, 2012
- 7 Sept. 2012 -**

This weekly epidemiological report aims to present briefly the reported cases of West Nile Virus (WNV) infection in Greece for the period 2012, and is updated weekly.

Data presented in this report are derived from the notifications of laboratory confirmed and probable cases sent to the Hellenic Centre for Disease Control and Prevention (HCDCP-KEELPNO) by their treating physicians. Laboratory data are also included from i) the Reference Laboratory for Arboviruses, Aristotelian University of Thessaloniki, ii) the Department of Microbiology, School of Medicine, University of Athens, iii) the Department of Microbiology, Infectious Disease Hospital of Thessaloniki and iv) the Department of Diagnostic Services, Hellenic Pasteur Institute. The Department of Epidemiological Surveillance and Intervention of the HCDCP undertakes a verification procedure through communication with the treating physicians and the patients, as necessary.

From the beginning of 2012 until 06/09/2012 (16:00), 122 laboratory diagnosed cases of WN infection have been reported to KEELPNO and 8 deaths, of which 83 presented with neuro-invasive disease (encephalitis and/or meningitis and/or acute flaccid paralysis) and 39 cases with mild symptoms (febrile syndrome) ([Table 1](#)). One more imported case of WNV infections has been diagnosed in Greece in June 2012. It refers to a young boy from the USA, and it is not included in the following analysis.

Table 1. Number of cases with laboratory diagnosed WNV infection, Greece, period 2012 until 06.09.2012 (16:00)

	Number of cases with central nervous system manifestations ^[1]	Number of cases without central nervous system manifestations	Total number of cases	Number of deaths ^[2]
Cases diagnosed by 06.09.2012 (16:00)	83	39	122	8

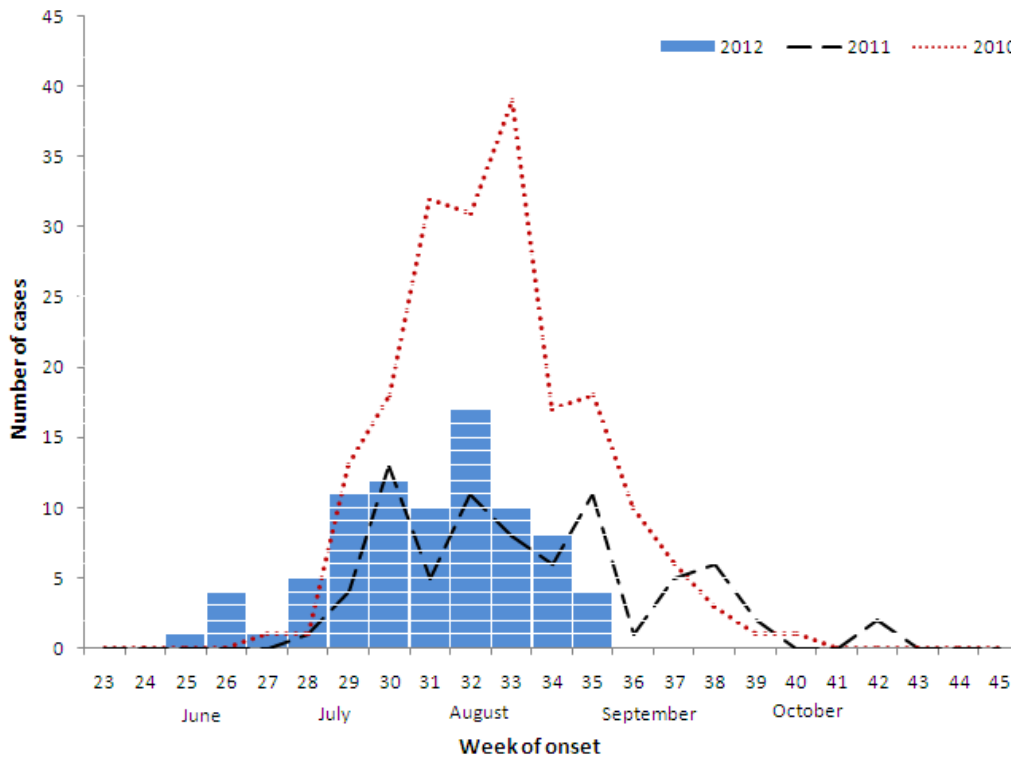
^[1] Cases presenting with encephalitis and/or meningitis

^[2] The number of deaths is included in the total number of cases

The analysis that follows refers to the 83 cases of WN neuro-invasive disease (WNND) presenting with encephalitis and/or meningitis or acute flaccid paralysis and without reported travel history to another country during the incubation period. According to a sero-epidemiological survey conducted in 2012 in the epicenter of the outbreak of Central Macedonia, WNND disease develops in 1:140 infected persons.

[Figure 1](#) shows the reported WNND cases by week of symptom onset. The first case for 2012 reported onset of symptoms in week 25/2011 (18-24/06/2012).

Figure 1. Number of laboratory diagnosed WNND cases by week of symptom onset. Period 2012, until 06.09.2012 (16.00)*



* The dotted red line represents the number of WNND cases reported in 2010 and the dotted black line represents the number of WNND cases reported in 2011. Each box represents one case reported in period 2012.

Age range of patients is between 11–87 years (median age: 68 years).

[Table 2](#) shows the geographic distribution of the notified neuro-invasive cases at the level of municipalities of possible exposure. The patient’s suspected place of exposure is a crude indicator of the area of WNV circulation.

For two particular cases, the possible place of exposure is undetermined due to uncertainty regarding the date of symptom onset, as well as a complicated travel history in the 15 days prior to that. In addition, one of the reported cases is an immunosuppressed patient, with a history of multiple transfusions who acquired the infection through blood transfusion. Both the blood collection and the blood transfusion had taken place before the diagnosis of the first case of WNV infection in Greece in 2012.

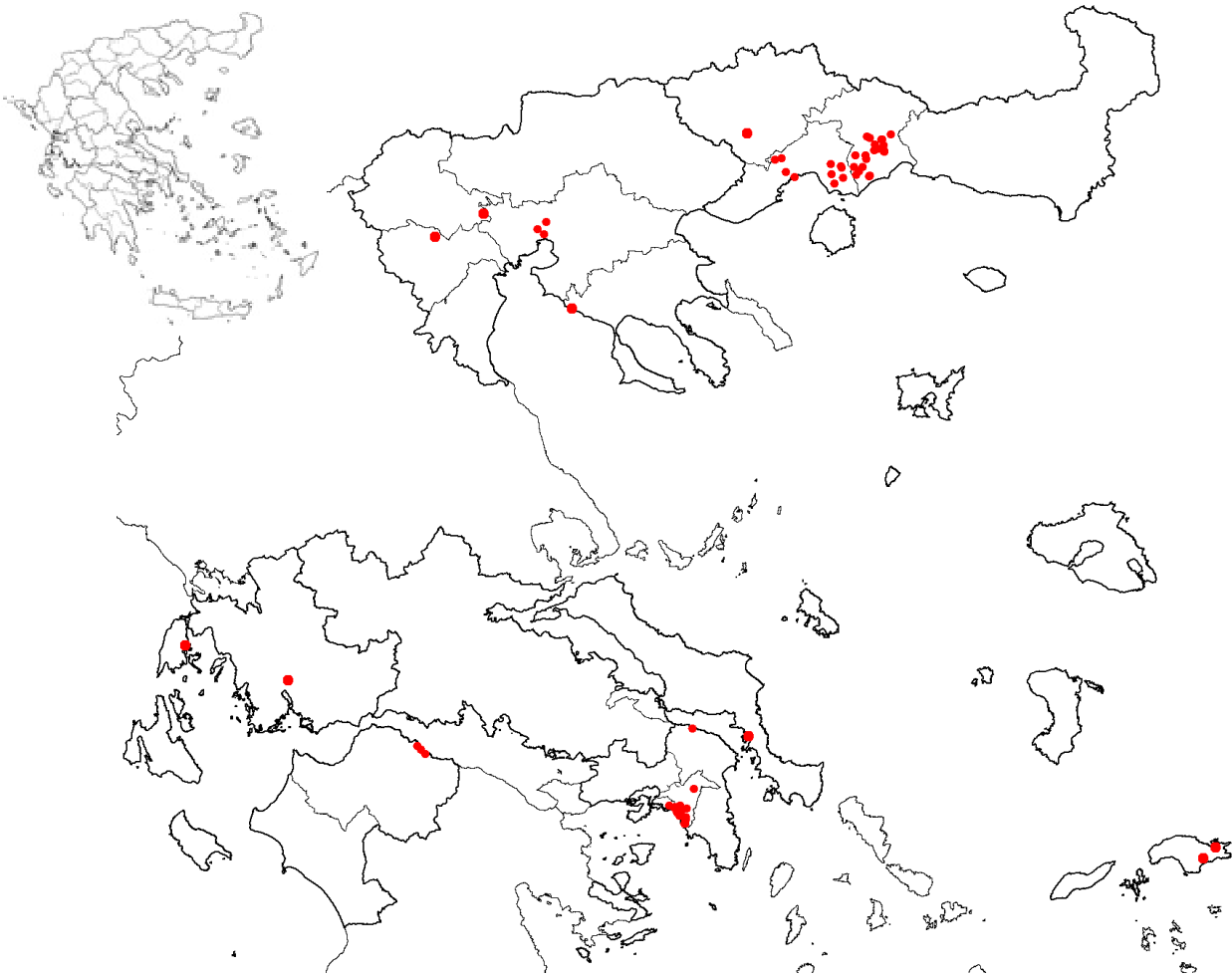
Table 2. Suspected place of exposure of patients with WNND. Period 2012, until 07.09.2012 (16.00)

Municipality	Number of cases	Incidence per 100.000 population*	Regional Unit
Topeiros	10	87,10	Xanthi
Avdira	11	58,41	Xanthi
Xanthi	2	3,10	Xanthi
Nestos	6	27,02	Kavala
Kavala	6	8,52	Kavala
Palaio Faliro	11	17,63	South Section of Athens
Alimos	5	11,95	South Section of Athens
Elliniko - Argiroupoli	4	7,79	South Section of Athens
Glifada	2	2,29	South Section of Athens
Kallithea	2	1,99	South Section of Athens
Nea Smyrni	1	1,36	South Section of Athens
Marousi	1	1,38	North Section of Athens
Helioupolis	1	1,28	Central Section of Athens
2 nd Municipal Department (Municipality of Athens)	1		Central Section of Athens
Piraeus	1	0,61	Piraeus
Oropos	1	2,98	East Attiki
Kimi-Aliveri	1	3,51	Evia
Heroic City of Naousa	1	3,08	Imathia
Samos	2	6,10	Samos
Aigialias	3	6,03	Ahaia
Delta	1	2,19	Thessaloniki
Kordelio-Evosmos	1	0,99	Thessaloniki
Oraikastro	1	2,60	Thessaloniki
Agrinio	1	1,06	Aitoloakarnania

Nea Proponitida	1	2,73	Halkidiki
Leukada	1	4,40	Leukadas
Pella	1	1,59	Pella
Drama	1	1,69	Drama
Undetermined possible place of exposure	2		
Infection through blood transfusion	1		
Total Greece	83	0,77	

* Calculated based on temporary census data (2011, Hellenic Statistical Authority).

Figure 2: Map showing the suspected place of exposure of WNV cases, Greece (n=80). Period 2012, until 06.09.2012 (16.00)¹



Source: HCDCP

¹ Each red dot represents one WNV neuro-invasive case.

Figure 3: Map showing the place of residence of WNNND cases (n=30), Attiki. Period 2012, until 06.09.2012 (16.00)



Source: HCDCP

CONCLUSIONS

After the first outbreak of WNV infection in Greece in the summer of 2010 (mainly in Central Macedonia), and the further detection of cases in the 2011 transmission period, it was expected that cases of WNV infection will also present this year.

Cases of WNV infection have been reported until 06/09/2012 from areas of Attiki (in particular from the south suburbs of Athens), Thessaloniki, Imathia, Aitolokarnania, Halkidiki, Pella and Evia, as well as from the island of Samos and the areas of Ahaia, Kavala, Leukada, Xanthi and Drama which are new areas of WNV circulation in Greece. During 2012, WNV cases have also been reported in Europe from Italy, the Russian Federation, Israel, the Occupied Palestinian territory, Tunisia, Serbia, Romania and Hungary.

Epidemiological surveillance, systematic and early mosquito control and personal protective measures against mosquito bites are the most appropriate measures for the control of the disease.

PUBLIC HEALTH MEASURES SUPPORTED BY THE HCDCP - 2012

The following public health measures have been implemented by the Hellenic CDC and other involved stakeholders:

1. Enhanced surveillance for encephalitis and WNV infections in humans is in place since 2010.

2. Awareness rising among clinicians by providing guidelines for the recognition, management and diagnosis of encephalitis and WNV infection in particular. The Hellenic CDC website includes updated information for health professionals (case definition, instructions for samples, laboratory diagnosis, management, educational material for the public) www.keelpno.gr.
3. Communication and health promotion activities in schools and healthcare facilities all over the country.
4. The Coordination Centre for Blood Safety proposes and coordinates the guidance for blood and blood product safety according to EU guidelines.
5. Collaboration and exchange of information with the Veterinary Public Health (VPH) services of the Ministry of Agriculture, especially regarding WNV in equidae.
6. HCDCP is collaborating with the University of Thessaly for the project: "Control of West Nile Virus and Malaria- Strengthening of Surveillance in the Greek territory", funded by the NSRF (2007-2013). The various work packages include the development of geographical information systems (GIS), the strengthening of epidemiological surveillance for both diseases, the mapping of mosquito habitats and mosquito sampling from high-risk areas, the strengthening of wild bird and horse monitoring for WNV transmission, informative campaigns addressing the public, especially high-risk groups, and health professionals who are involved directly with the control and treatment of both diseases.
 - a) Mosquito mapping continues all over Greece for the second consecutive year. This year KEELPNO has awarded three tenders for mosquito mapping: Central Greece and Attiki, North Greece (Macedonia and Thrace), West Greece and Peloponnese. The surveillance and testing of mosquitoes is carried out by the Dept of Parasitology -National School of Public Health and the Veterinary School, University of Thessaly.
 - b) The Veterinary School, Aristotelian University of Thessaloniki is undertaking a sero-epidemiological surveillance of household poultry (<6 mos old) in north Greece.
 - c) The Veterinary School, University of Thessaly undertakes surveillance of wild birds in various areas in Greece, including Attiki.
7. Continuing collaboration and communication with the ECDC and the European Commission.