



# Annual Epidemiological Report

August 2019

## Viral Encephalitis, Not Otherwise Specified (NOS), in Ireland, 2018

### Key Facts

In 2018, 84 cases of viral encephalitis (NOS) (VE) were notified in Ireland (1.76/100,000 population) compared to 71 (1.49/100,000) in 2017, this is the highest incidence of viral encephalitis reported since notification began

The median age of cases was 65 years (range <1 month to 88 years)

The causative pathogen was identified for 83 (98.8%) cases: Varicella/herpes zoster virus (n=43), herpes simplex virus types 1 and 2 (HSV) (n=34), human herpes virus type 6 (n=3) and enterovirus (n=3)

## Epidemiology

Encephalitis due to viruses not otherwise specified (NOS) are notifiable under the disease category 'viral encephalitis'. Details of viral encephalitis cases caused by other notifiable diseases, if any, are presented in other annual reports. There is no enhanced surveillance for encephalitis NOS.

In 2018, 84 cases of viral encephalitis (NOS) (VE) were notified in Ireland (1.76/100,000 population) compared to 71 (1.49/100,000) in the previous year (Figure 1). One contributing factor to the increase in numbers can be attributable to an increase in the number of herpes simplex virus cases from 15 to 34 cases.

There were fewer VE cases among males (n=37) than among females (n=46), an M:F ratio of 0.88:1, a reversal of what was observed in 2017 with a M:F ratio of 1.22:1; one case had an unknown gender status. The median age of cases was 65 years (range <1 month to 88 years); 42 (50%) cases occurred in those aged 65 or more years and six cases (7.1%) in children under five years of age. There were 21 cases of varicella/herpes zoster virus (VZV), 20 herpes simplex virus type 1 (HSV1) and one enterovirus case among the 42 VE cases in those aged  $\geq 65$  years (Figure 1, Table 1).

All of the 84 VE cases were laboratory tested positive and case classified as confirmed. All but one had a causative pathogen identified: VZV (n=43; 51.2%), herpes simplex virus (HSV) (n=34; 40.5%, 30 of which were type 2, two were type 1), human herpes virus type 6 (HHV 6) (n=3; 3.6%), enterovirus (n=3; 3.6%, including one each of echovirus type 9 and echovirus type 30) and not specified (n=1; 1.2%) (Figure 2).

Caution is advised regarding the detection of HHV 6 DNA in cerebral spinal fluid (CSF) specimens, especially in those cases aged less than three months as HHV 6 DNA can be chromosomally integrated as it may not be clinically relevant. One of the three cases of HHV 6-related encephalitis in 2018 however, occurred in a patient less than three months of age.

Outcome was recorded for 52.4% of cases (n=44/84). There was one reported death in 2018: a 70-74 year old with a VZV infection, but the actual cause of death is still pending at the time of writing. There was also one UK imported case with a VZV-related infection in the same year.

The figures presented in this report are based on data extracted from the Computerised Infectious Disease Reporting (CIDR) system on 2<sup>nd</sup> August, 2019. No enhanced surveillance is currently in place on CIDR for viral encephalitis (NOS). However, the increase in the annual number of reported cases since 2014 may reflect improved diagnostics and surveillance reporting generally rather than an increase in the burden of this disease in the population. The figures in this report will differ from those published previously due to on-going updating of notification data in CIDR.

## Further information available on HPSC website:

<http://www.hpsc.ie/a-z/other/viralencephalitis/>

## Acknowledgements

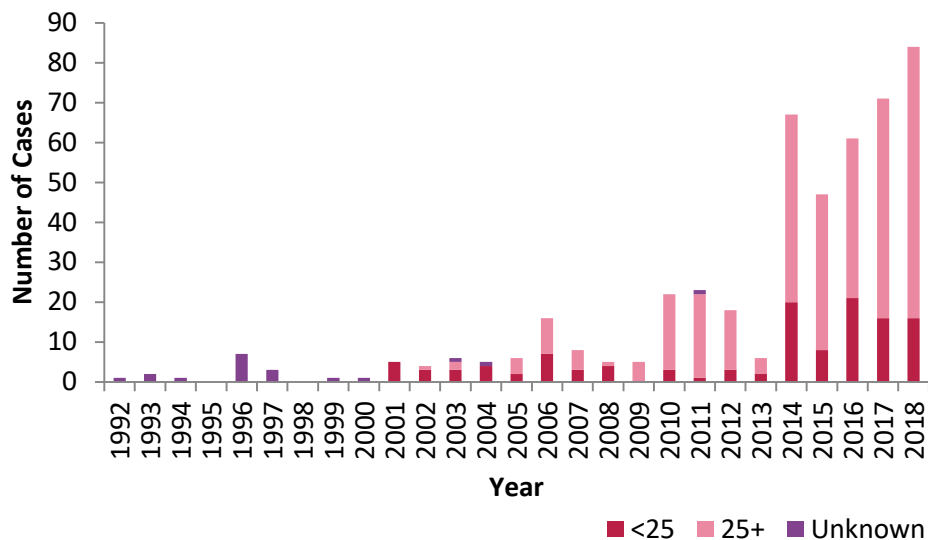
HPSC wishes to thank all who provided data for this report: Departments of Public Health, National Virus Reference Laboratory (NVRL) and other Microbiology Laboratories

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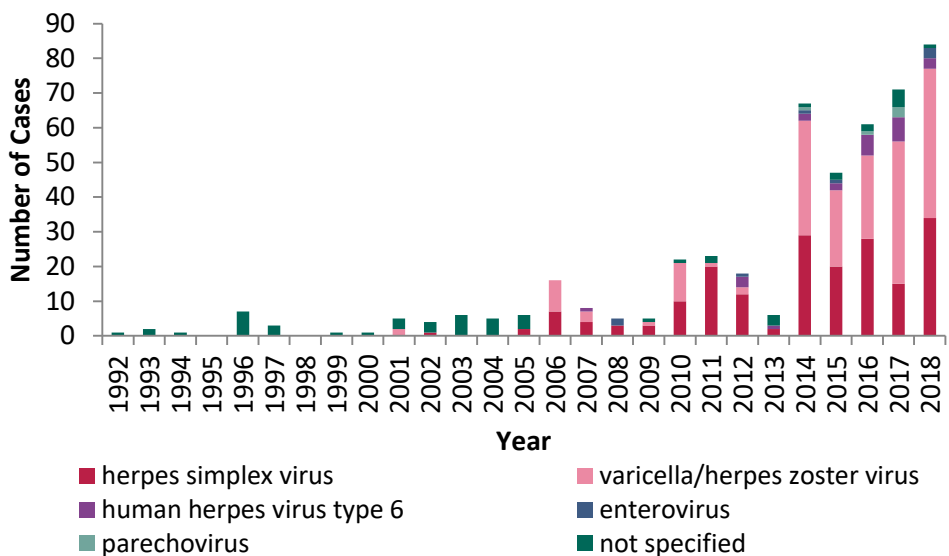
**Figure 1. Number of viral encephalitis (NOS) cases by age group and year, Ireland, 1992-2018\***

\*includes the late notification of 15 cases in 2013 reported in early 2014



**Figure 2. Number of viral encephalitis (NOS) cases by causative pathogen and year, Ireland, 1992-2018\***

\*includes the late notification of 15 cases in 2013 reported in early 2014



**Table 1. Number, crude and age-specific incidence rates and proportion of viral encephalitis (NOS) cases by age group and pathogen, Ireland, 2018**

Age Group	Causative pathogen					Total	ASIR	% Proportion
	herpes simplex virus (HSV)	varicella/herpes zoster virus (VZV)	human herpes virus type 6 (HHV6)	enterovirus	not specified			
<1	2	1	2	0	0	5	8.03	6.0
1-4	0	1	0	0	0	1	0.37	1.2
5-14	0	2	1	0	0	3	0.44	3.6
15-24	0	5	0	1	1	7	1.21	8.3
25-44	4	8	0	1	0	13	0.92	15.5
45-64	8	5	0	0	0	13	1.15	15.5
65+	20	21	0	1	0	42	6.59	50.0
<b>All ages</b>	<b>34</b>	<b>43</b>	<b>3</b>	<b>3</b>	<b>1</b>	<b>84</b>	<b>1.76</b>	<b>100</b>
<b>% total cases</b>	<b>40.5</b>	<b>51.2</b>	<b>3.6</b>	<b>3.6</b>	<b>1.2</b>	<b>100</b>		
<b>CIR</b>	<b>0.71</b>	<b>0.90</b>	<b>0.06</b>	<b>0.06</b>	<b>0.02</b>	<b>1.76</b>		

CIR=crude incidence rate per 100,000 population; ASIR=age-specific incidence rate per 200,000 population  
 Rates calculated using Census 2016 data