

Viral Meningitis in Ireland, 2023

Notification of Viral Meningitis, Not Otherwise Specified (NOS)

A report from the Vaccine Preventable Disease Team, HPSC¹

Report prepared by: Piaras O'Lorcain, Eimear Keane, Michael Carton, VPD team

Published: October 2024

Published by:

Health Protection Surveillance Centre, 25-27 Middle Gardiner St, Dublin 1 Ireland.

t: +353 1 8765300

© Health Protection Surveillance Centre, 2024

Citation Text:

HSE Health Protection Surveillance Centre (2024). Viral Meningitis in Ireland, 2023 .

Reproduction is authorised, provided source is acknowledged

¹The Vaccine Preventable Disease Team is part of the Health Protection Surveillance Centre, National Health Protection Office, Health Service Executive

What are the key messages in this report?

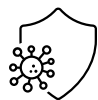
There were 318 cases reported in 2023§. This is similar to 319 cases reported in 2022, but higher than average of 197 cases reported during the COVID-19 pandemic years (2020-2022).

Similar to 2022, the age group with the highest proportion of cases was under <1 year.

In 2023, the causative pathogen most frequently identified was enterovirus. This is similar to 2022.

§ Note: In weeks 32 and 34 of 2024, 34 late notifications were added to CIDR, 16 of which had laboratory dates from 2023 and have not been included in this summary.

Note: Census 2022 data was used to calculate rates



Number of cases by age and gender

- + In 2023, 318 cases of viral meningitis (NOS) (VM) were notified in Ireland (6.2/100,000 population) compared to 319 (6.2/100,000) in 2022, 131 (2.5/100,000) in 2021, 142 (2.8/100,000) in 2020 and 326 (6.8/100,000) in 2019.
- + One explanation for the rise in numbers since 2019 can be attributable to the ending of the COVID-19 pandemic.
- + There were more VM cases among males (n=168) than females (n=150) in 2023, an M:F ratio of 1:0.89, which was higher to that in 2022 with a M:F ratio of 1:0.81.
- + In 2023, the median age of cases was 0.25 years (or 13.2 weeks) (range 2 days to 97 years): of the 318 cases, 188 (59.1%) were aged between 0-4 years of age, and 176 (55.4%) were aged <1 year.
- + In comparison, 319 cases were reported in 2022 (median age 0.17 years), of which 209 (65.5%) were aged between 0-4 years, and 200 (62.9%) were aged <1 year (Table 1).

Note:

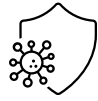
See slide 10, Appendix for Table 1



Causative agents

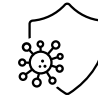
- + All but five of the 318 VM cases in 2023 were case classified as confirmed. All but 47 (14.8%) had a causative pathogen identified: Enterovirus (n=210, 66.0%), varicella zoster virus (VZV) (n=23; 7.2%), herpes simplex virus (HSV) (n=9; 2.8%) (one type 1 and six type 2) and other including Human Herpes Virus type 6 (HHV 6) (n=22, 6.9%) and parechovirus (n=6; 1.8%).
- + In comparison, among the 319 VM cases in 2022, all but 71 (22.2%) had a causative pathogen identified: 173 cases of Enterovirus (54.2%), 22 (6.8%) cases of VZV, 15 (4.7%) HSV (two type 1 and eight type 2) and other including 24 HHV 6 (7.5%) and 14 parechovirus cases (4.3%).
- + Compared to 2022, there were fewer cases in 2023 with no causative organisms identified and a greater proportion attributable to enterovirus.
- + 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 and therefore it may not be clinically relevant. Of the 22 cases of HHV 6-related encephalitis in 2023 however, seven (31.8%) occurred in patients less than three months of age.

What are the key messages in this report? (Continued)



Enterovirus typing results

- + In 2019, all but 79 (2.7%) of the 255 enterovirus-related VM cases were typed, but between 2020 and 2023, 453 (98.1%) of 462 cases were not.



Area

- + Most VM cases in HSE Dublin & Midlands region, but the the highest rate was in HSE Mid West region (Figures 4-5).

What background information is relevant when reading this report?

- + Meningitis due to viruses not otherwise specified (NOS) are notifiable under the disease category ‘viral meningitis’. Details of viral meningitis caused by other specified notifiable diseases (such as mumps and influenza viruses, if any) are presented in other annual reports by HPSC.
- + The figures presented in this report are based on data extracted from the Computerised Infectious Disease Reporting (CIDR) system on 27th August 2024.



Age and Causative Pathogen

The distribution of VM cases is heavily skewed with 63.6% (n=188 /318) of cases in 2023 in the 0-4 age group (Figures 1 and 2) with 59.4% attributable to enterovirus.

Note: Census 2022 data was used to calculate rates

Figure 1 Number of viral meningitis (NOS) cases by age group and causative pathogen group, Ireland, 2023

Other/Unknown = includes HHV 6, parechovirus and adenovirus related meningitis and viral meningitis attributable to unspecified viruses

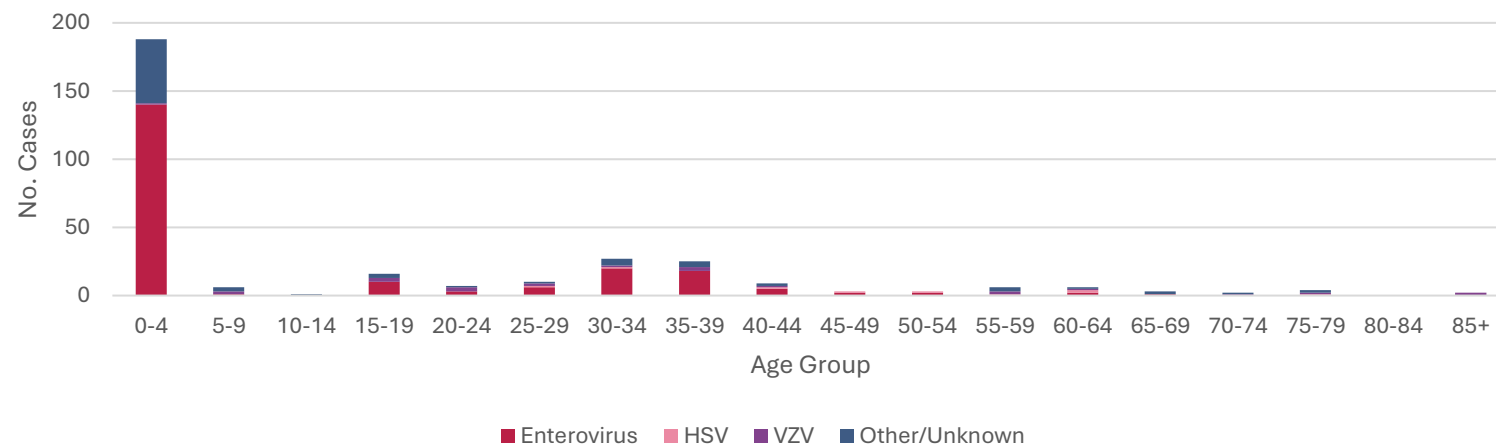
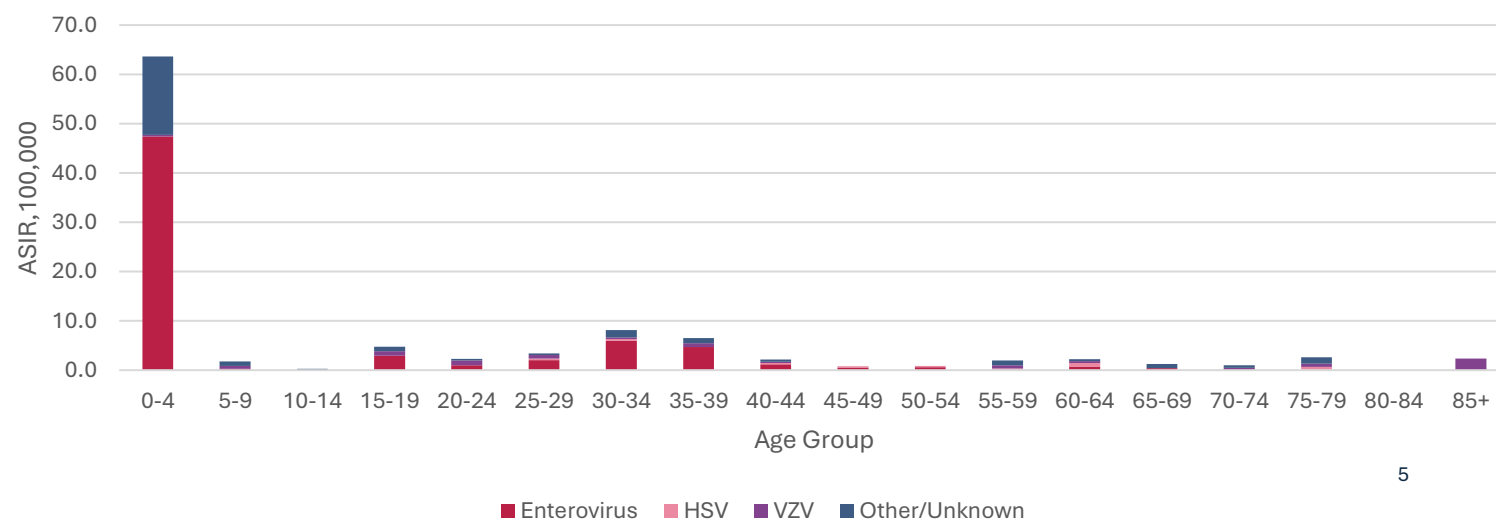


Figure 2 Age-specific incidence rates per 100,000 of viral meningitis (NOS) cases by age group and causative pathogen, Ireland, 2023

Other/Unknown = includes HHV 6, parechovirus and adenovirus related meningitis and viral meningitis attributable to unspecified viruses



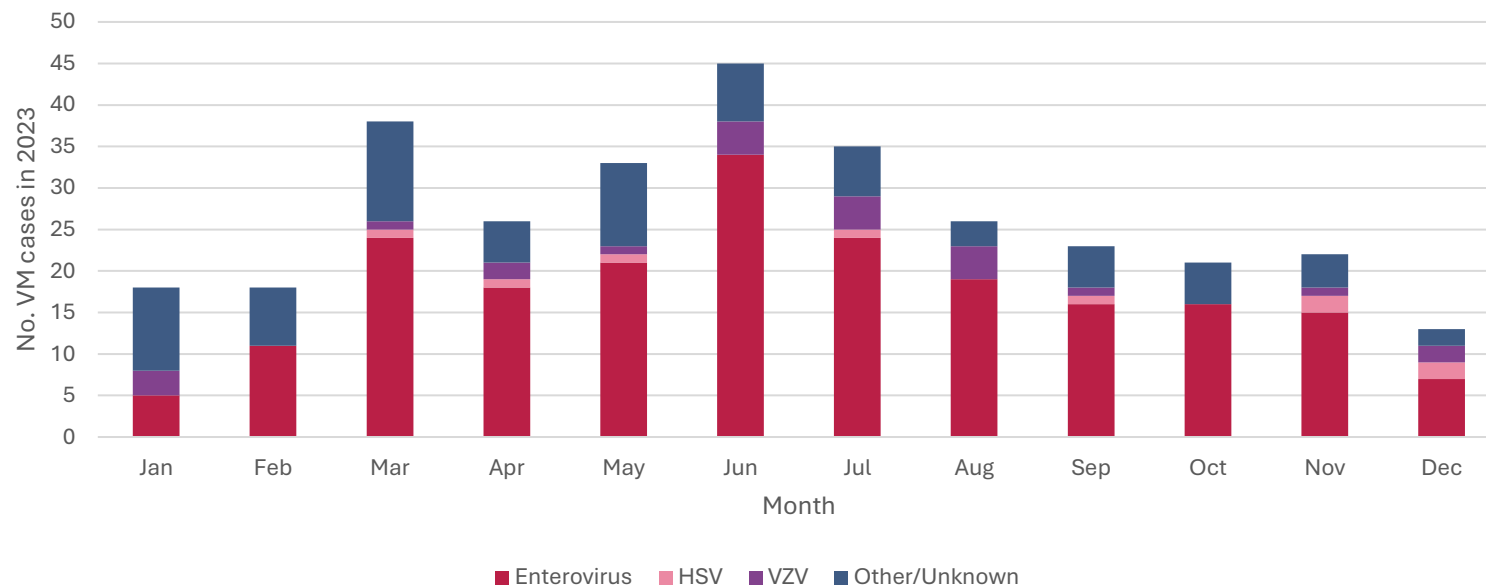


Seasonality and Causative Pathogen

The frequency of VM cases typically is highest in the summer months.

In 2023, June was the month where most cases were notified (Figure 3).

Figure 3 Numbers of viral meningitis (NOS) cases by causative pathogen and month of year, Ireland, 2023
Other/Unknown = includes HHV 6, parechovirus and adenovirus related meningitis and viral meningitis attributable to unspecified viruses





Area and Causative Pathogen

In 2023, even though the reported number of VM cases was highest in the HSE Dublin & Midlands region, the incidence rate was highest in the Mid West region (Figures 4, 5).

Note: Census 2022 data was used to rates

Figure 4 Number of viral meningitis (NOS) cases by HSE Health Region and Causative Pathogen, Ireland, 2023

Other/Unknown = includes HHV 6, parechovirus and adenovirus related meningitis and viral meningitis attributable to unspecified viruses

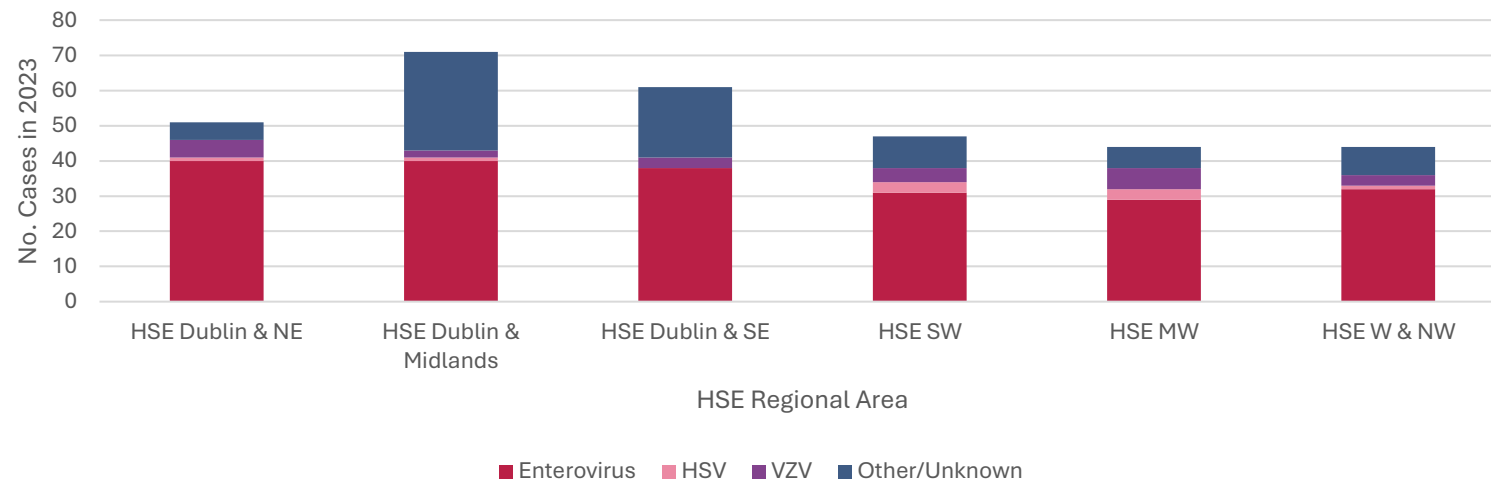
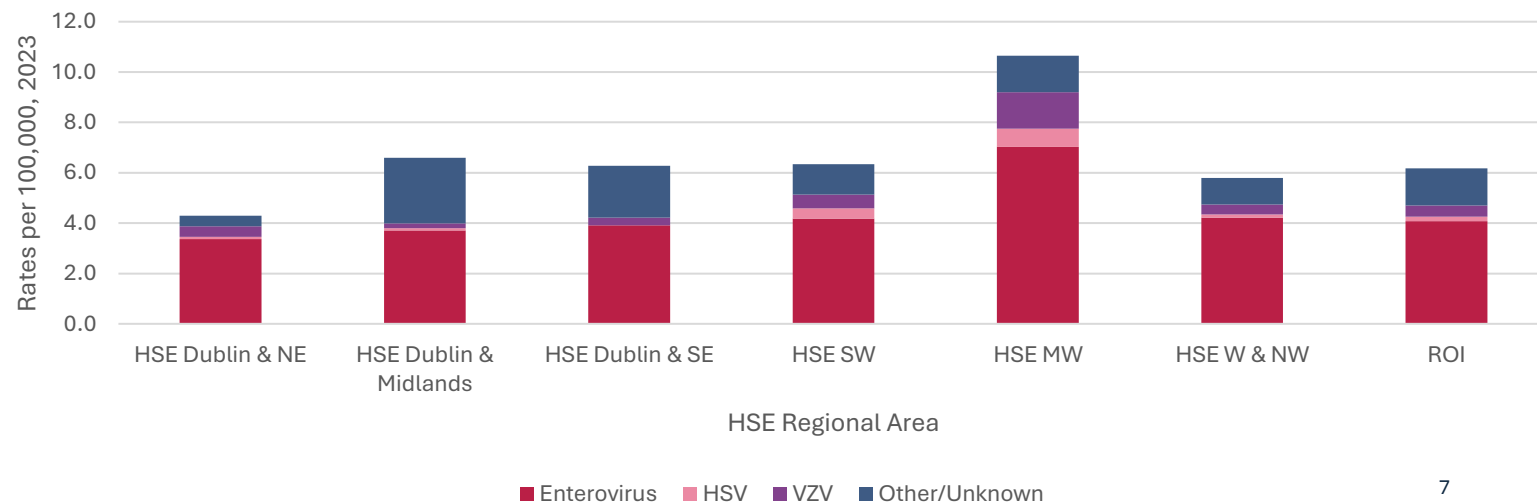


Figure 5 Incidence rates per 100,000 of viral meningitis (NOS) cases by HSE Health Region and Causative Pathogen, Ireland, 2023

Other/Unknown = includes HHV 6, parechovirus and adenovirus related meningitis and viral meningitis attributable to unspecified viruses



What can we interpret from the data in this report in this report?



Age Distribution

- + By far, most cases of VM occur in the <1 year age group (with the next highest number of cases, albeit at a much lower level, in the 15-19 and 30-39 year old age groups).



Enterovirus typing

- + The current absence of this service mean that, potentially, enterovirus type specific clusters cannot be identified.



Summer peak in Cases

- + Typically, the highest number of cases occurs in mid-summer, so clinicians should be alert to that likelihood each year.

What do I need to know about how the data for this report was collected?

There are limitations in these data.

1. There is currently no enhanced surveillance reporting associated with viral meningitis, NOS, in Ireland.
2. In 2017, the National Virus Reference Laboratory (NVRL) introduced enterovirus typing, but one of the consequences of the COVID-19 pandemic was that routine typing was suspended in early 2020 and hasn't resumed since.
3. Varicella related viral meningitis can occur at the same time as chickenpox or shingles or it can occur on its own without any rash or skin manifestation. However, only hospitalised cases of chickenpox are notifiable and shingles are not.
4. A number of late notifications were added to CIDR in 2024, some of which had laboratory dates from 2023 and have not been included in this summary.

Table 1 Number and age specific incidence rates per 100000, population of viral meningitis (NOS) cases by age group and causative pathogen, Ireland, 2023

Abbreviations
HHV 6 = human herpes virus type 6
HSV = herpes simplex virus
VZV = varicella zoster virus

Table 1. Number of viral meningitis (NOS) cases by age group and causative pathogen, Ireland, 2023
*Other = includes HHV 6, parechovirus and adenovirus related meningitis

Age Group	No. Cases					% Frequency	Age specific incidence rates per 100000, population				
	Enterovirus	HSV	VZV	Other/ Unknown	Total		Enterovirus	HSV	VZV	Other/ Unknown	Total
0-4	140	0	1	47	188	59.1	47.4	0.0	0.3	15.9	63.6
5-9	1	0	2	3	6	1.9	0.3	0.0	0.6	0.9	1.8
10-14	0	0	0	1	1	0.3	0.0	0.0	0.0	0.3	0.3
15-19	10	0	3	3	16	5.0	3.0	0.0	0.9	0.9	4.7
20-24	3	0	3	1	7	2.2	1.0	0.0	1.0	0.3	2.3
25-29	6	1	2	1	10	3.1	2.0	0.3	0.7	0.3	3.4
30-34	20	1	1	5	27	8.5	6.0	0.3	0.3	1.5	8.1
35-39	18	0	3	4	25	7.9	4.7	0.0	0.8	1.0	6.5
40-44	5	1	1	2	9	2.8	1.2	0.2	0.2	0.5	2.2
45-49	2	1	0	0	3	0.9	0.5	0.3	0.0	0.0	0.8
50-54	2	1	0	0	3	0.9	0.6	0.3	0.0	0.0	0.9
55-59	0	1	2	3	6	1.9	0.0	0.3	0.7	1.0	2.0
60-64	2	2	1	1	6	1.9	0.7	0.7	0.4	0.4	2.2
65-69	1	0	0	2	3	0.9	0.4	0.0	0.0	0.8	1.3
70-74	0	0	1	1	2	0.6	0.0	0.0	0.5	0.5	1.0
75-79	0	1	1	2	4	1.3	0.0	0.6	0.6	1.3	2.6
80-84	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0
85+	0	0	2	0	2	0.6	0.0	0.0	2.4	0.0	2.4
Unknown	0	0	0	0	-	-	-	-	-	-	-
Total	210	9	23	76	318	100.0	4.1	0.2	0.4	1.5	6.2
% Total	66.0	2.8	7.2	23.9	100.0	100.0					

Note: Census 2022 data was used to calculate rates

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

Further information available on HPSC website:

<https://www.hpsc.ie/a-z/respiratory/viralmeningitis/>

Case definition: <https://www.hpsc.ie/a-z/vaccinepreventable/viralmeningitis/casedefinitions/>

HPSC National ID Hub: <https://infectious-diseases-hpscireland.hub.arcgis.com/>

Fact sheet: <https://www.hpsc.ie/a-z/vaccinepreventable/viralmeningitis/factsheet/>

FACTSHEET

Factsheet

Surveillance Reports

Case Definitions

Publications

Links

Find a Topic

Search our website

Find a Topic

Topics A - Z

PUBLICATIONS

Measles in Ireland - epidemiological summary report 02 September 2024

Mycoplasma investigation form Case 1 30 August 2024

Surveillance of mpox clade 1 30 August 2024

Weekly Evidence Surveillance Digest 30 August 2024

NEWS

Mycoplasma outbreak in Democratic Republic of the Congo 26 August 2024

Cases of mpox in Ireland remain low 21 August 2024

Legionnaires' disease outbreak in Italy (Milan area) 19 August 2024

World Hepatitis Day 28 July 29 July 2024

HOME / A-Z / VACCINE PREVENTABLE / VIRAL MENINGITIS / FACTSHEET

Viral Meningitis

What is viral meningitis?
There are two main types of meningitis: viral and bacterial. Viral meningitis, also known as 'aseptic meningitis', is the commonest type and is most frequently seen in children. It is a milder disease than bacterial meningitis and is rarely fatal. People with viral meningitis may have severe symptoms but they usually recover completely. There is no specific drug treatment for viral meningitis. Bacterial meningitis, on the other hand, is usually more severe, can be fatal and requires prompt treatment with antibiotics.

What are the symptoms of viral meningitis?
The symptoms of viral meningitis may include:

- High temperature
- Severe headache
- Stiff neck
- Bright lights hurt the eyes
- Drowsiness
- Confusion
- Nausea and vomiting

The symptoms in young babies may be more difficult to identify and include high temperature, irritability, difficulty in waking the baby from sleep and refusing to eat. The symptoms of bacterial meningitis may be identical, particularly in the early stages of the disease. For this reason it is important that if you think that your child may have meningitis you should contact your doctor as soon as possible.

How is viral meningitis spread?
The viruses that cause viral meningitis are contagious and can be easily spread from person to person. However most people who get infected with these viruses do not become ill, or else just develop a mild cold or rash with a slight fever. Less than 1 in 1000 people infected with these viruses develop viral meningitis.

What are the most common bugs causing viral meningitis?
Viral meningitis can be caused by many different viruses. The most common cause is an enterovirus infection (either an echovirus or coxsackie virus).

Less commonly reported (or very rare nowadays) viruses include the following: poliovirus, mumps virus, herpes simplex type 2 virus, herpes zoster, influenza types A or B, adenovirus, rubella, Epstein Barr virus.

How is viral meningitis diagnosed?
Viral meningitis is usually diagnosed following laboratory tests on the fluid surrounding the brain (cerebrospinal fluid, also known as CSF), by detection of virus in the stool of the patient, from throat swabs or blood samples.

How can I protect myself from infection?
Although the risk of acquiring viral meningitis is small it is sensible to take precautions to protect yourself and your family against this infection. The most important protection against the viruses that cause viral meningitis is hand washing to protect against the enteroviruses.

- You should wash your hands with soap and water after any contact with someone who has viral meningitis or a similar illness.
- You should also wash your hands after using the toilet and before preparing or eating food.
- Because babies frequently carry the viruses that cause viral meningitis it is particularly important to wash