

Enhanced surveillance for enterovirus-associated neurological disease in children.

Report 8 – Includes surveillance data for the fortnight ending 23 June 2013, and historical data since 1 January 2013.

Background

Enhanced surveillance to monitor neurological complications associated with enterovirus infections in children commenced in mid-April 2013 following reports of children from Northern and Eastern Sydney hospitalised with severe neurological complications of enterovirus infections, isolation of enterovirus 71 (EV71) from some of these cases, and following an expert panel discussion.

We continue to report in relation to the enhanced surveillance objectives: to better describe the state-wide picture of the outbreak for the benefit of public and clinician updates, and; to better describe the contribution of EV71 relative to other enteroviruses in the development of neurological complications in children with enterovirus infections.

In summary we report:

- Paediatric admissions from ED for meningitis/encephalitis remained above the yearly average for this time period.
- ED presentations (all ages) for meningitis/encephalitis remained at the upper end of the usual range for this time of year.
- Hand foot and mouth disease (HFMD) presentations to ED remained well above usual levels but below the peak seen in January 2013.
- Since 1 January 2013 there have been 123 cases which have met the surveillance case definition; 102 were enterovirus positive and so far 30 have had EV71 detected.

Emergency Department surveillance (PHREDSS)

Surveillance focuses on patients less than 10 years of age admitted to one of the 59 NSW Emergency Departments (EDs) under PHREDSS surveillance and assigned a diagnosis of “meningitis” or “encephalitis” or “hand, foot and mouth disease”. The surveillance period is to 24 June 2013.

The number of ED presentations diagnosed as meningitis or encephalitis remains at the upper end of the usual range this time of year but well below the peak level of around 70 presentations at the beginning of the year (Figure 1). Presentations in children under 10 years remained above the historical average for this time of year at around 8 in recent weeks compared with around 4 in previous years, and with counts as high as 14 over recent months (Figure 2). All presenting cases in recent weeks were admitted (Figure 3).

The total number of hand, foot and mouth disease (HFMD) presentations increased following a decline during May. The number was well above usual levels, but below the peak of around 70

presentations in the last week of March. In the week ending 23 June 2013, all 59 HFMD presentations were in children aged under 10 years. This compares with an average of eight in that age group during the same week in recent years (Figure 4).

HFMD can be caused by a number of viruses and it is rare for testing to be undertaken in individual cases. Thus HFMD is an indicator of enterovirus infection activity, however not all cases will be due to enterovirus infection, and even less due to EV71.

Figure 1. Total weekly counts of Emergency Department presentations for meningitis or encephalitis, for 2013 (black line), compared with each of the 5 previous years (coloured lines), persons of all ages, for 59 NSW hospitals.

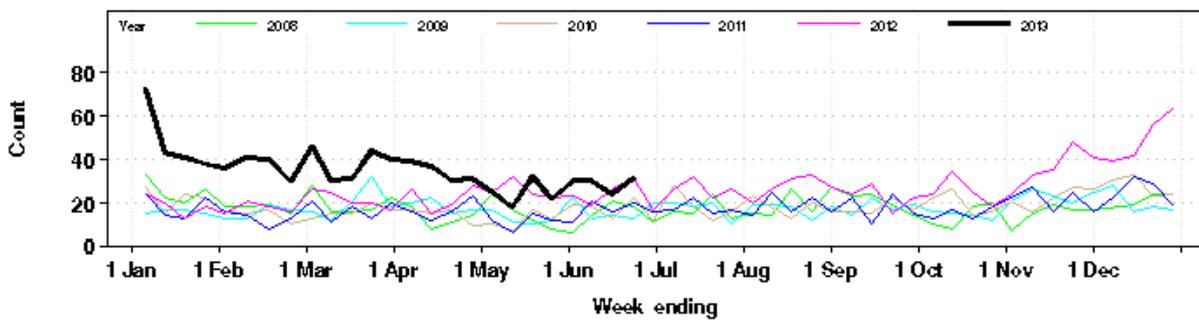


Figure 2. Total weekly counts of Emergency Department presentations for meningitis or encephalitis, for 2013 (black line), compared with each of the 5 previous years (coloured lines), children aged under 10 years, for 59 NSW hospitals.

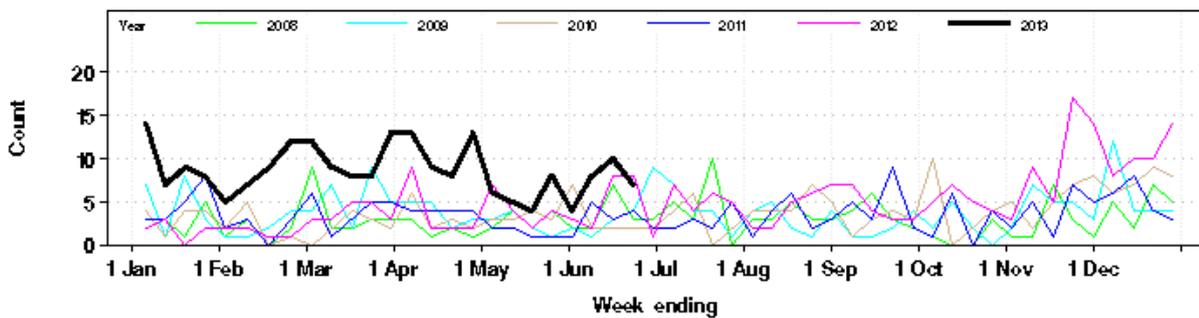


Figure 3. Total weekly counts of Emergency Department presentations for meningitis or encephalitis that were admitted, for 2013 (black line), compared with each of the 5 previous years (coloured lines), children aged under 10 years, for 59 NSW hospitals.

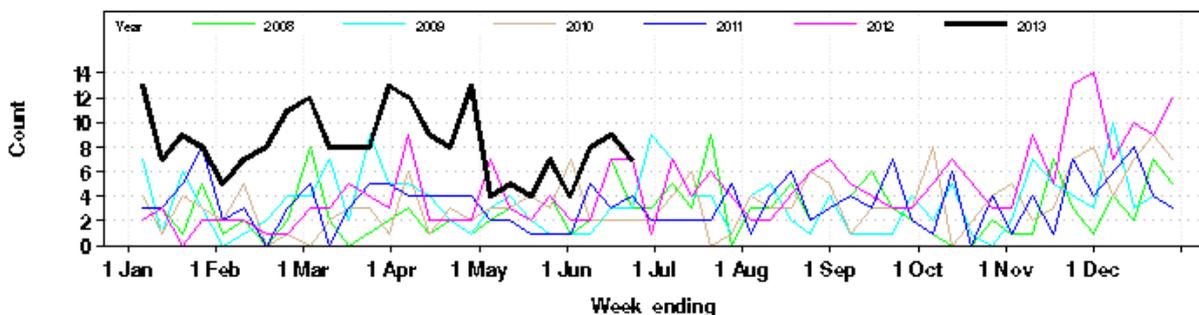
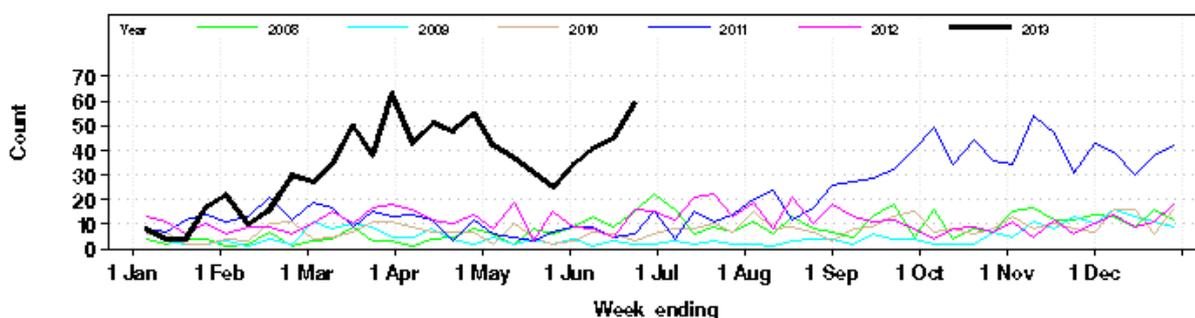


Figure 4. Total weekly counts of Emergency Department presentations for hand, foot and mouth disease, for 2013 (black line), compared with each of the 5 previous years (coloured lines), children aged under 10 years, for 59 NSW hospitals.



Laboratory surveillance of all 2013 cases

Of the 123 cases meeting the enhanced surveillance case definition since 1 January 2013, 102 had laboratory-confirmed enterovirus infections, six were enterovirus negative, 13 had missing laboratory results, and two have lab results pending. Thirty are confirmed EV71. It should be noted that prior to the enhanced surveillance system further typing of enterovirus results was not routine practice. Therefore, most of the typed results are from cases admitted since the beginning of enhanced surveillance on 14 April 2013.

Fatal cases

NSW Health is aware of one child who died during June 2013 and who had tested positive for enterovirus in a stool sample. However, the enterovirus identification may be an incidental finding as bacterial sepsis was suspected clinically and on cultures. The case has been referred to the State Coroner's Office.

EV71 infections have been linked to three other young children who have died since December 2012. The children were all aged under two years. The first death occurred in late December 2012 and was followed by deaths in early January 2013 and in early April 2013. EV71 infection was considered to be the cause of death in two of the cases, while the cause of death for the third case remains under investigation.