

Enhanced surveillance for enterovirus-associated neurological disease in children.

Report 4 – Includes surveillance data for the week ending 19 May 2013.

Background

Enhanced surveillance to monitor neurological complications associated with enterovirus infections in children commenced in mid-April 2012 following reports of children from Northern and Eastern Sydney hospitalised with severe neurological complications of enterovirus infections, isolations of EV71 from some of these cases, and following an expert panel discussion.

The aims of the enhanced surveillance are: (1) to better describe the state-wide picture of the outbreak for the benefit of public and clinician updates; (2) to better describe the clinical presentation and progression of paediatric cases for the benefit of clinicians and to aid best practice in the early management of cases (including warning signs of severe disease and when to transfer patients), and; (3) 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 remain stable and above the yearly average for this time period.
- ED presentations (all ages) for meningitis/encephalitis stayed stable but remained above historical average
- Sydney Children’s Hospitals Network surveillance showed a slight increase in EV neurological disease admissions, with 9 admitted cases, compared to 6 in the week prior.
 - 1 ICU admission; no deaths; no neurogenic pulmonary oedema
 - 7/9 Enterovirus positive (1 pending, 1 negative); all results are pending typing

Reports will be issued on a weekly basis. As time permits, data will be added retrospectively to 1 January 2013.

Emergency Department surveillance (PHREDSS)

Surveillance focuses on patients less than 10 years of age admitted to one of the 59 NSW EDs under PHREDSS surveillance and assigned a diagnosis of “meningitis or encephalitis”.

The total number of presentations assigned a diagnosis of meningitis or encephalitis increased to 30 (from 17 the week before), and was at the upper end of the usual range for this time of year (Figure 1).

There were 4 meningitis/encephalitis presentations in children aged under 10 years (same as last week), compared with an average of 2 for the same period in previous years (Figure 2).

All 4 meningitis/encephalitis presentations in under 10 year-olds were admitted, compared with an average of 2 for the same period in previous years (Figure 3).

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.

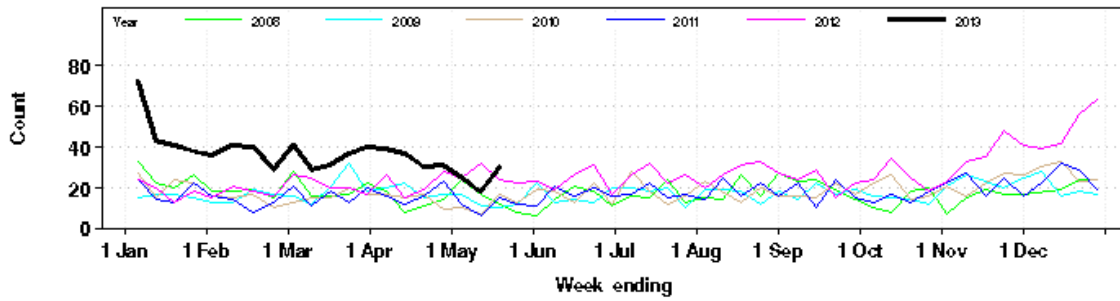


Figure 2. Total weekly counts of Emergency Department presentations for meningitis or encephalitis, for 2013 (black line), compared with each of the 5 previous years (coloured lines), children aged under 10 years, for 59 NSW hospitals.

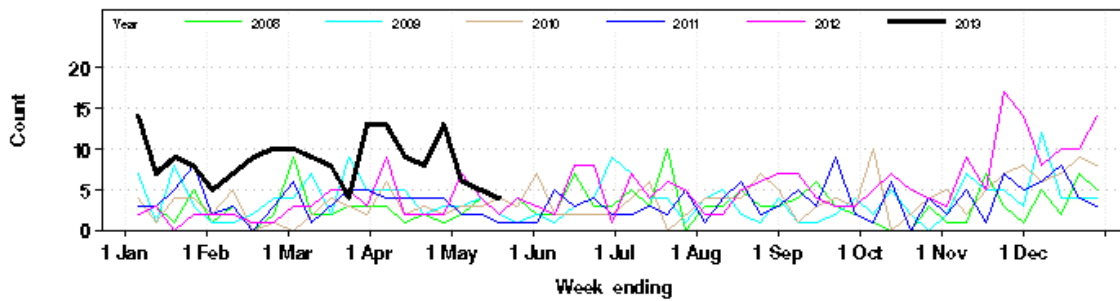
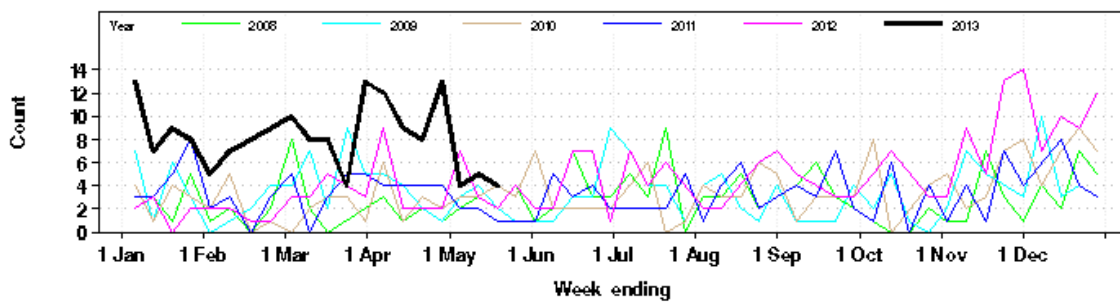


Figure 3. Total weekly counts of Emergency Department presentations for meningitis or encephalitis that were admitted, for 2013 (black line), compared with each of the 5 previous years (coloured lines), children aged under 10 years, for 59 NSW hospitals.



Enhanced clinical surveillance - Sydney Children's Hospitals Network

Sites: Sydney Children's Hospital Randwick, The Children's Hospital Westmead

Surveillance focuses on daily review for patients less than 10 years admitted with a diagnosis of meningitis/encephalitis/meningoencephalitis OR acute flaccid paralysis/transverse myelitis due to a suspected or confirmed enterovirus infection.

Nine cases were reported in the week ending 19 May, up from six cases the previous week (Figure 4). Table 1 provides a summary of demographic, testing and treatment information. The most common clinical features this week were fever (9 cases), lethargy (5 cases), myoclonic jerks (4 cases), encephalopathy (4 cases), oral ulcers (4 cases) and skin rash (4 cases). Clinical features for all cases reported since the beginning of active surveillance are shown in Figure 5.

Figure 4. Paediatric admissions to Sydney Children's Hospitals Network with severe neurological complications suspected enterovirus 71

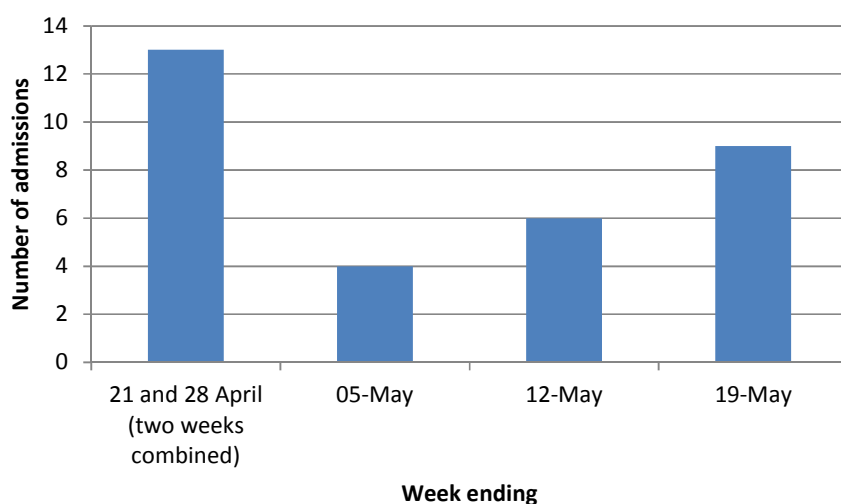
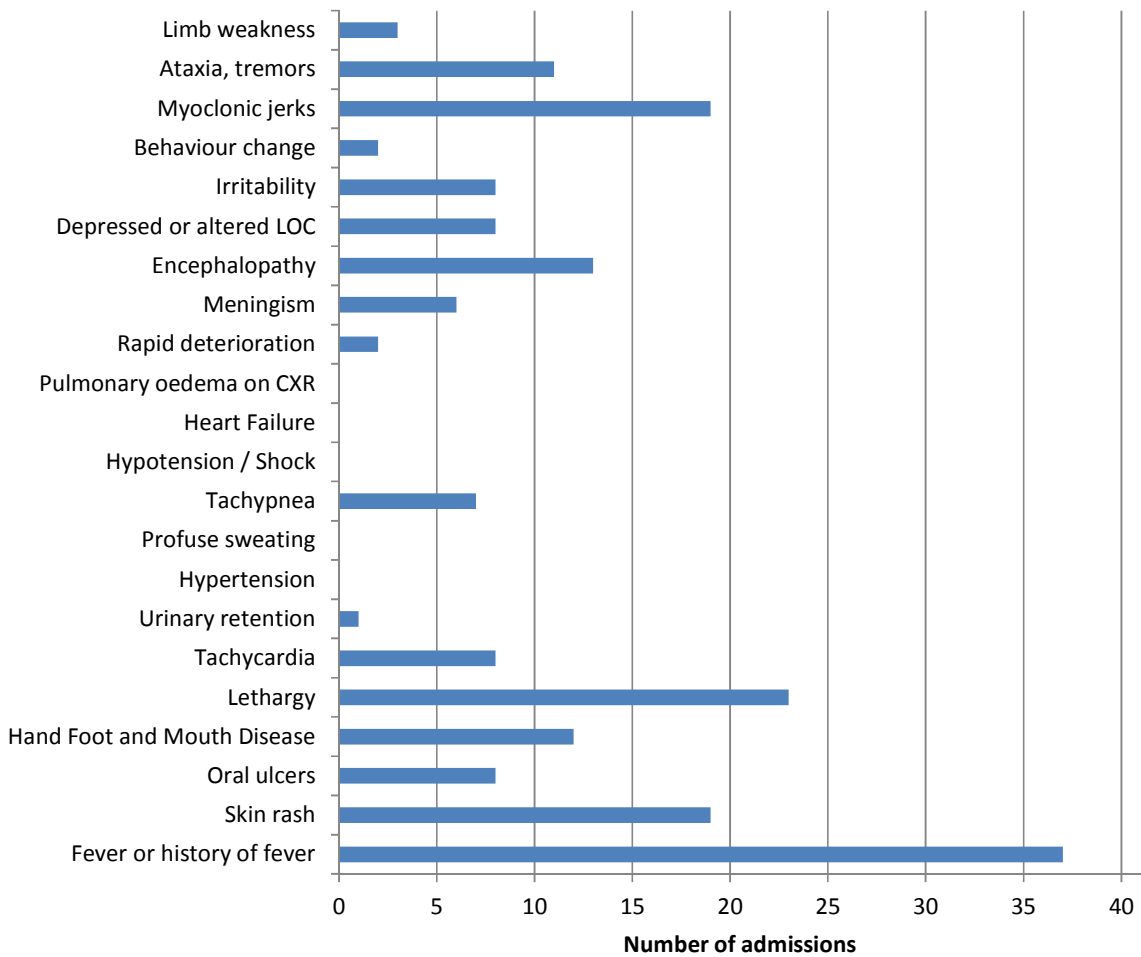


Table 1. Summary of the demographic features, laboratory results and treatment outcomes for cases admitted week ending 19 May and cumulative since 14 April 2013.

	Week ending 19 May 2013	Cumulative 14 April - 19 May 2013
Facility	SCH -4 cases; CHW – 5 cases	SCH -21 cases; CHW – 20 cases
Gender	3/9 Female (33%)	17/41 Female (41%)
Average age	22 months (range 3-58 months)	25 months (median 16 months, range 0-129 months)
Enterovirus testing	7 enterovirus positive*, 1 pending, 1 negative (5 throat, 3 faeces, 4 CSF) [*some positive at multiple sites] All pending typing	36/41 enterovirus positive, 2 pending, 3 negative All pending typing
ICU Admission	1/9	5/41 (average stay 2.5 days, 3 intubated)
IVIG treatment	1/9	2/41
Other treatment	1/9 corticosteroids	7/41 corticosteroids
Outcomes (to date)	0 deaths Average LOS: 1.6 days* *four cases still admitted	0 deaths Average LOS: 3.8 days (5 unrecorded)
LHD of residence	3 x Western Sydney LHD 2 x South Western Sydney LHD 2 x South Eastern Sydney LHD 1 x Western NSW LHD 1 x Hunter New England LHD	12 x Western Sydney LHD 11 x South Eastern Sydney LHD 8 x Northern Sydney LHD 4 x South Western Sydney LHD 3 x Sydney LHD 1 x Nepean Blue Mountains LHD 1 x Western NSW LHD 1 x Hunter New England LHD

Figure 5. Reported clinical features for 41 cases admitted 14 April - 19 May 2013



Laboratory surveillance – Enterovirus 71

Samples from all 36 enterovirus-positive cases have been referred for reference laboratory testing for the EV71 strain. All results are pending.