

## Febrile convulsion in young children and the influenza vaccine 2010: Key messages for Health Professionals.

29/4/10

### Background

- Fevers are known to occur after flu vaccines, and febrile convulsions are a recognised complication of fever.
- Western Australia has noted a high rate of febrile convulsions reported to their passive reporting system.
  - This reporting is unsolicited, passive reporting of events following immunisation therefore it is currently unknown if the febrile convulsions directly attributable to the vaccine or an unrelated febrile illness.
- The vaccine predominantly used in Australia in 2010 has been Fluvax® but other vaccines are used as well.
- It has been proposed that there may be increased reactogenicity with Fluvax® over other vaccines however there is no clinical data to support or refute this.
  - While there is no data either way on this – these influenza vaccines are all very similar in terms of formulation. None of these influenza vaccines contain adjuvant.
- Australia has decided to temporarily suspend its immunisation programme for all children under 5 years of age while they further consider their data.

### NZ Situation

- Up until Friday last week (23/4/10) The Centre for Adverse Reaction Monitoring (CARM) had received reports for five febrile convulsions following influenza vaccination– one following Celvapan®, three following Fluvax® and the other unknown.
- CARM does not feel this is an unusual or atypical response rate.
- NZ broadened its subsidised influenza vaccination strategy to more at risk children this year so there are likely to be increased numbers of children immunised.
- With the publicity since the Australia news it is likely that notification rates will increase dramatically. **This does not mean there is a new concern – passive databases always get higher notifications with increased awareness.**

### Influenza infection in children

- Children are at relatively high risk of influenza: Data for Pandemic H1N1 associated morbidity and mortality last year showed:
  - Over 200 hospitalisations.
  - Three deaths in children under five years
- This is likely to be a significant underestimate of the burden of disease as many hospitalisation occur as a result of complications from influenza such as pneumonia and therefore are not coded as influenza.
- Risk of severe complications from influenza are particularly high in younger children (under 1 years in particular) and in the identified high risk groups.

## Influenza vaccine and fever

- The actual percentage of children who have fever post - influenza vaccine varies between clinical trials. Data indicates that younger children get more reactions (hence the use of the lower dose) and in children under 3 years around a quarter to a third of children may get a fever. As these trials do not include a placebo it is not possible to know which fevers solely attributable to the vaccine and not an inter-current illness.
- Based on World Health Organization recommendations influenza vaccine is not retested every year for reactogenicity as it is the same formulation each year with different strain antigens added. There is no reactogenicity data on this year's trivalent vaccines therefore it is not known if the profile of febrile reactions is higher than normal.
- Monovalent pandemic H1N1 vaccines were used widely in Europe during their influenza season with no reports of increased reactogenicity.

## Febrile convulsions/antipyretics

- Approximately 2- 4% of all children have a febrile convulsion at some stage in their life
- Paracetamol or other antipyretics are not effective at reducing febrile convulsions (the convulsion occurs because of the rise in fever, not the actual fever).
- Antipyretics can be used to reduce pain or discomfort, not specifically fever.
- A child who has a febrile convulsion needs to be checked for the underlying cause of fever, **do not just assume it is caused by the influenza vaccine**. It is important not to miss any underlying important medical issue behind the fever.

## General considerations

- Fever is a known side effect of influenza vaccines, particularly in children under 3 years of age.
- It is very difficult to know if there is an increased incidence of fever with this year's influenza vaccine over previous years at this stage.
- A child at high risk of complications of influenza should still be offered influenza vaccine as the risk of the vaccine is likely to be **considerably lower** than the risks associated with influenza.
- A child at lower risk of complications of influenza can be considered on a case by case basis, knowing the history of the child, how they respond to illnesses, their likelihood of exposure to influenza etc.
- Children who are due their second dose and have had had a severe febrile reaction to their first influenza vaccine also need to be considered on a case by case basis. For those that are at high risk of complications from influenza it is worth considering administering the second dose, whereas those in lower risk groups may prefer not to go ahead with a second dose: We assume that a vigorous response to the vaccine means a good immune response which therefore suggests the child is likely to have developed protective immunity after a single dose.

This information was current as of 29<sup>th</sup> April 2010. For updates please refer to:

[www.influenza.org.nz](http://www.influenza.org.nz)

[www.immune.org.nz](http://www.immune.org.nz) or 0800 IMMUNE (466863)

or your local Immunisation Coordinator or District Immunisation Facilitator.