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## Key points regarding rotavirus, the rotavirus vaccine and intussusception

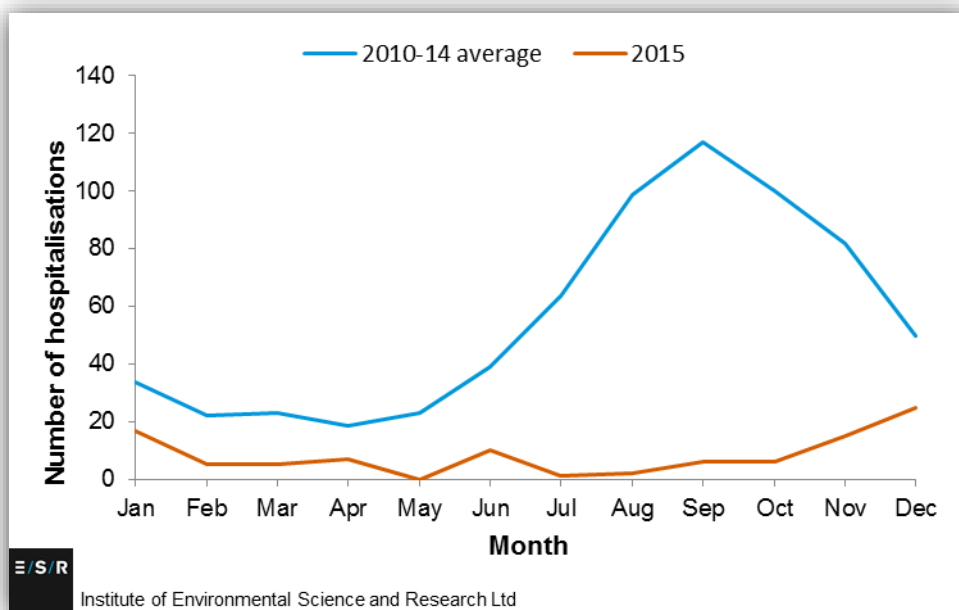
Last week a Facebook post was brought to our attention regarding a 12 week old baby hospitalised and diagnosed with intussusception, in the week after their first immunisations- including the rotavirus immunisation. (immunisations were delayed 6 weeks).

We felt it timely to summarise some of the information regarding rotavirus, the rotavirus vaccine and the incidence of intussusception.

### Rotavirus

Rotavirus is an infection that causes gastroenteritis (diarrhoea and vomiting). Before the rotavirus vaccine was introduced in NZ, each year approximately one in 52 children under 3 were hospitalised with this infection.

Since the introduction of the rotavirus vaccine in 2014, the incidence of rotavirus disease is dramatically lower and consequently, hospitalisation for severe rotavirus gastroenteritis is now uncommon.



### Intussusception

Intussusception is a very rare condition where the bowel telescopes in on itself. This is usually a medical emergency that is treated in hospital. In NZ there is approximately 50 cases per year and most cases happen in infants under the age of 1 year and typically after the age of 6 months.

There are some known triggers of intussusception, such as gastroenteritis, and more cases were seen during the winter months when rotavirus infection was most common. Other causes are unknown.

Intussusception occurred in NZ before we had rotavirus vaccine, and both vaccinated and unvaccinated children can get intussusception.

## The rotavirus vaccine

In the 1990s there was a rotavirus vaccine that increased the risk of intussusception. This was used only in the USA and was immediately withdrawn from the market.

Research outcomes vary regarding the rate of intussusception when the new, current vaccines were introduced. Some countries have seen a very slight increase in intussusception cases, (e.g. in the UK the attributable risk of intussusception after rotavirus vaccine is 1.91 per 100,000 doses after dose one and 1.49 per 100,000 doses for dose two). Other countries, like Canada, found no increase in cases after the introduction of the vaccine.

Using case-control studies from Australia, it was estimated that NZ would expect to see an extra 3 cases of intussusception per year. At this stage it is unclear if there is an overall increase in cases or not.

It is not yet known what causes intussusception in some children. Some children who are prone to intussusception could potentially get it following vaccination where they previously might have been triggered by rotavirus infection – that is why they may get it at younger age after vaccination.

Most cases of intussusception that occur after rotavirus vaccination will be by coincidence.

Balanced against this possible increase in intussusception is the fact that the rotavirus vaccine has prevented hundreds of children from being hospitalised with severe gastroenteritis and dehydration in New Zealand.

It is important to help parents understand that whilst the risk of intussusception may increase very slightly, the complications of rotavirus infection are potentially very serious.

## Main points

Intussusception is rare. The rotavirus vaccine protects against hospitalisation due to gastroenteritis, which causes severe dehydration. Rotavirus gastroenteritis is also associated with seizures and may also be linked with intussusception.

There is a very small possibility that a baby may develop intussusception within a week after the first dose of the vaccine in particular – it is very rare but very serious so parents need to be aware of the symptoms and seek immediate medical help if concerned.

The symptoms are intermittent crying or screaming, pulling up their knees, abdominal distension, vomiting or seeing pink or red jelly like (mucousy) stool in the nappies.

If the vaccine increases the rare occurrences of intussusception, this is most likely to occur within the first week after the first dose. It may be seen up to 3 weeks after rotavirus vaccination. Intussusception, although rare, occurs in older infants, therefore, it is very important to give the vaccine at the correct ages of 6 weeks and 3 months, prior to the high risk period.