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Rotavirus vaccine programme in Hawke's Bay

Rotavirus infection is the most common cause of severe diarrhoeal disease in infants and children worldwide and more than 90% of children in New Zealand are infected by 3 years of age. Babies and young children are most at risk of severe illness from rotavirus because they are the most vulnerable to dehydration from the loss of body fluid from diarrhoea and vomiting. Severe dehydration can require treatment in hospital and if untreated can cause death.

Rotavirus infection is the leading cause of admission to hospital for gastroenteritis in New Zealand children especially those under 2 years of age with on average 12 children treated for rotavirus every day in hospitals in NZ.

The virus is highly contagious with the main route of infection from contamination of hands, utensils and other objects with the faeces from an infected person. The virus can survive for a long time on surfaces like taps, bench tops and toys. It can be passed on from an infected person about 2 days before the symptoms arrive and for a number of weeks after the diarrhoea and vomiting have stopped, meaning that other family members and close contacts may become infected during that time.

There is no specific treatment for rotavirus infection – the most important thing is to prevent dehydration by replacing the fluid lost through diarrhoea and vomiting. Dehydrated children may need to be admitted to hospital for intravenous fluids with severe dehydrating gastroenteritis predominantly occurring in the 4-23 month age group.

The only available data on gastroenteritis and rotavirus infection are hospital admission data. The true prevalence of this infection in the community will be much higher and many children are managed at home without any need for healthcare intervention. Peak infection rates occur in late winter and early spring. The most significant risk factor for gastroenteritis is contact with another person with gastroenteritis.

In Hawke's Bay, on average over the 5 years from 2007-2011, there were 132 admissions per year for gastroenteritis for children 0-4 years, (87% of these were amongst under 2yrs). Forty-two per cent of these 0-4 year olds children were Maori and 7% Pacific Islander. 45% of admissions in this age group were from the most deprived areas in Hawke's Bay (deciles 9-10). By contrast only 8% of admissions were from decile areas 1-2.

Public Health Advice is available by email

If you prefer to receive this bulletin by email in PDF format, instead of hard copy, please let us know by email to lester.calder@hbdhb.govt.nz.

The bulletin is also available on the Hawke's Bay District Health Board website:
<http://www.hawkesbay.health.nz/page/pageid/2145871321>

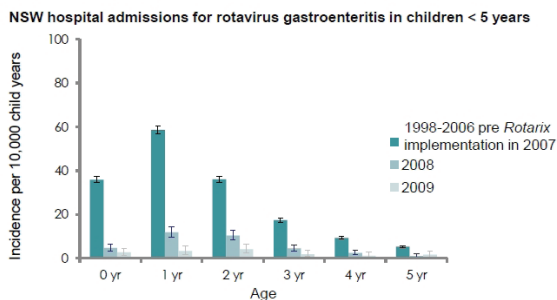
On average at least 35% of these admissions for gastroenteritis were confirmed rotavirus infection.

Strategy to prevent disease and hospital admissions

A review of rotavirus infection by the World Health Organization found that rates of rotavirus infection are similar in developed and less developed countries and that hygienic measures are unlikely to decrease infections because of the ubiquity of the virus and the ease with which it is transmitted. Almost all children worldwide by the age of 3-5 years have been infected.

Vaccination has been shown to be effective at reducing severe disease and at reducing hospitalisations due to gastroenteritis, not just amongst those vaccinated but across all age groups. This suggests that vaccination of infants also has a herd immunity effect.

Rotarix reduces hospitalisations in vaccinated & unvaccinated children¹



Reduction in incidence of hospital admissions in 2009* compared with baseline (98-06)

Rotavirus gastroenteritis

90%

All gastroenteritis

52%

*In 2009 data were only available between January - June. Thus hospitalisations for 2009 were estimated, rather than actual.

1. Galic et al., *The European Society for Paediatric Infectious Diseases (ESPID)*, The Hague, 7-11 June 2011

The WHO recommends that rotavirus vaccine be included in all national immunisation programmes. However rotavirus vaccine is not currently funded in New Zealand although it remains high on the priority list for future funded vaccines in New Zealand.

Hawke's Bay Programme

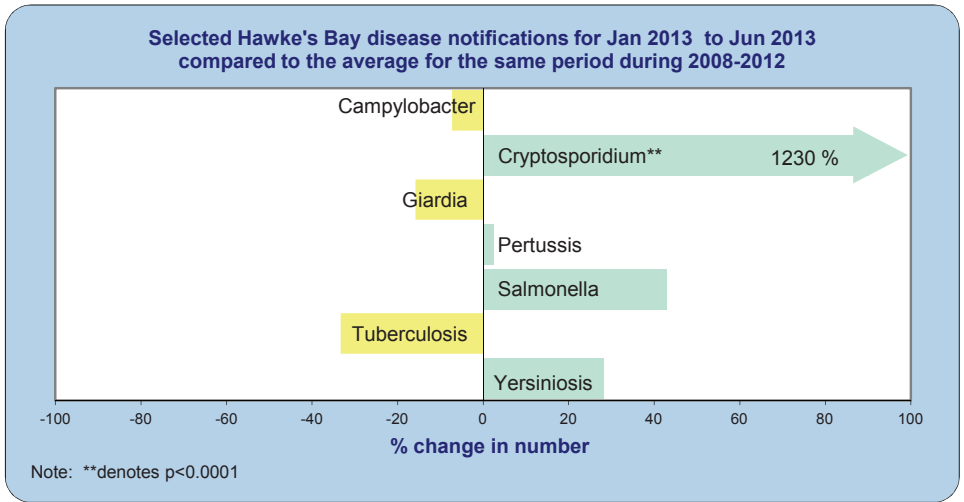
A targeted rotavirus vaccination programme aimed at selected high needs practices was introduced in 2012 for all enrolled infants in those practices born after 1 July 2012 using "Rotarix" vaccine, manufactured by GSK. Rotarix is an oral vaccine that is given in two doses - the first dose must be given before 14 weeks of age; the second dose must be given before 24 weeks of age. Best practice is to administer the doses with the 6 week and 3 month scheduled vaccines.

Practices in the programme include all Wairoa practices, Maraenui Medical, Hauora Heretaunga and Totara Health. GSK and the DHB immunisation team provided training, resources and support to these practices for the introduction of the programme but a big thank you must be given to the practice nurses for the extra work involved.

Parents are usually enthusiastic for their babies to receive the Rotarix vaccine especially as it is given orally. Together with Health Hawke's Bay PHO and a Paediatric registrar we are

evaluating the impact of this programme locally, collecting data on practice coverage and on hospital admissions for rotavirus gastroenteritis before and during the programme. We also are investigating how to best collect data on GP presentations.

Other primary care providers can purchase Rotarix vaccine for their patients -the price of the vaccine was reduced by GSK last year and is still \$100.00 for the 2 doses. Please contact the Immunisation team (834 1815) if you have any queries about rotavirus vaccine.



Selected notifications July 2012 to June 2013

Disease	Hawke's Bay		New Zealand	
	Cases	rate*	Cases	rate*
Campylobacter	267	172.3	6217	140.2
Chlamydia	1489	960.6	24509	561.2
Cryptosporidium	155	100.0	1350	30.5
Giardia	61	39.4	1654	37.3
Gonorrhoea	270	174.2	3317	75.3
Invasive pneumococcal disease	24	15.5	487	11.0
Latent Tuberculosis Infection	71	45.8	405	9.1
Lead absorption	3	1.9	240	5.4
Legionella	2	1.3	134	3.0
Leptospirosis	12	7.7	92	2.1
Listeriosis	0	0.0	22	0.5
Meningococcal disease	1	0.7	82	1.8
Pertussis	70	45.2	5413	122.1
Rheumatic Fever	3	1.9	144	3.2
Salmonellosis	35	22.6	1120	25.3
Tuberculosis - New Case	14	9.0	279	6.3
VTEC/STEC Infection	1	0.7	218	4.9
Yersinia	12	7.7	471	10.6

* Annualised crude rate per 100,000 population calculated from 2012 mid-year estimates.
 Note: The figures for Chlamydia & Gonorrhoea are for the 12 months ending Dec 2012.

Immunisation Issues

Coming event: Vaccinators Training Course Dates 30 & 31 October 2013

Venue: Cornwall Park Cricket Pavilion Cost \$120.

ALIJAH'S STORY: THE IMPORTANCE OF IMMUNISATION

Believing myths about vaccines is not the same as getting the facts

Ian Williams never expected he'd be sitting next to his son's hospital bed holding his son's hand. Alijah's back arching at such extremes that he felt the muscles could break his bones at any second. Worse, his heart could stop. For three weeks, Ian watched his son's seven year old body violently and painfully, convulsing as tetanus attacked his nervous system.

Alijah was lying in hospital suffering from a preventable disease – something he should have been immunised against, but which Ian and his wife Linda had decided not to do.

"You have no idea how it feels to watch blood dripping from your child's mouth, Alijah saying 'save me daddy'", said Ian. "I did feel powerless but it was something I could have prevented. I could have made a simple decision, based on evidence, to immunise Alijah."

"Parents like us make the decision to not vaccinate on very little factual information about the actual consequences of the diseases. We fall for the myths and conspiracies that exist on the internet. We had underestimated the diseases and we have overestimated the adverse reactions (to vaccines)," he added.

After Alijah's tetanus diagnosis, Ian and Linda were told he had a 1 in 10 chance of dying versus the very rare chance of having a serious reaction to the vaccination, such as painful nerve inflammation, to the tetanus vaccine.

Alijah spent 26 days in hospital, and faced months of recovery, including having to learn to eat and walk again.

Since Alijah's diagnosis the Williams' have immunized their other children and written to Alijah's school to warn other parents of the risks of choosing not to vaccinate.

Ian suggests that parents wondering if they should immunise their children do two things. "The first is to question what percentage of GPs and paediatricians are pro-vaccination? Then ask yourself why almost all doctors are pro-vaccination. These are people who are smart and they have compassion," he says.

Ian also suggests that for those who still aren't sure then they should "dive into the diseases. Learn everything you can and do it accurately. You can also find a video of a child suffering tetanus or whooping cough and then make your decision based on what could happen if you didn't immunise."

Ian did not realise the severity of tetanus until his son went through it.

"We're sharing our story and journey with Alijah for one reason – to prevent any other kids and parents going through what we have gone through."

From "Immunisation Health Report" Pfizer and The Meningitis Foundation.

<http://www.meningitis.org.nz/vdb/document/87>