

New Zealand's whooping cough admission rates cut by a fifth

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Research from The University of Auckland, published in this month's issue of *The Australian and New Zealand Journal of Public Health*, shows a 20 percent reduction in the New Zealand hospital admission rates for whooping cough (pertussis) in the 2000s compared with the 1990s.

Associate Professor Cameron Grant from the University's Department of Paediatrics, Growing Up in New Zealand and Starship Children's Hospital says the 2000s was the first decade since the 1960s that the whooping cough hospitalization rate had decreased rather than increased.

"The reduction coincides with a clear and focused national strategy to raise immunisation coverage levels in babies and young children," he says. "Improving immunisation coverage has been one of the National Health Targets since these were first introduced in 2007. The reduction in hospitalisation rates affirms the value of this strategy and gives all of those working in the area of vaccine delivery confidence, knowing that what they are doing is proving effective in reducing the number of little babies in hospital with this horrible disease."

"Young babies are exquisitely vulnerable to this disease", says Dr Grant. "Most who die from whooping cough are under two months old."

A child who catches whooping cough when less than one year old has a 60 percent chance of requiring hospital admission. Of those infants admitted to hospital with whooping cough, one in ten will need intensive

care. Each of those infants in intensive care has a one-in-six chance of dying or being left with permanent brain or lung damage as a direct result of whooping cough.

Incomplete immunisation has been the main reason for New Zealand's excessive whooping cough disease burden. The whooping cough hospitalisation rate is now three times higher than that for Australia or the United States. In the 1990s it was six times higher than in the United States.

For the first 15 years after 1945, when pertussis vaccine was introduced into New Zealand, the whooping cough hospitalisation rate fell. However in the following decades, hospital admissions increased steadily with the hospital admission rate in the 1990s being more than twice as high as it had been in the 1960s. A national immunisation survey in 1992 showed that only 60 percent of children had received all of their scheduled immunisations by age two years.

The immunisation coverage targets that were set were for 85 percent of two-year-olds to be fully immunised by July 2010; 90 percent by July 2011; and 95 percent by July 2012. As of June 2012 93 percent of New Zealand children had received all of their scheduled doses of whooping cough vaccine.

The reduced rate of hospitalisation is very exciting, says Dr Grant. However, to further reduce the burden of this severe disease, immunisation coverage will need to be sustained at high levels over many years. Until that is achieved we will continue to experience epidemics of whooping cough such as the one currently gripping the country.

Also the immunisations need to be delivered on time. At present one in four New Zealand infants are at increased risk of ending up in hospital with whooping cough because their six week, three month or five month

immunisations are delayed.

Whooping cough is a highly infectious disease, he explains, with every case causing more than 15 others. It is more than twice as infectious as influenza. Babies acquire very little protection through antibody crossover from the placenta or from breast milk. Those who get [whooping cough](#) do not necessarily acquire immunity through having the disease. Many people have it more than once in their lives.

“Having shown that we can improve immunisation coverage we must now shift our focus to delivering immunisations on time” say Dr. Grant. Understanding how best to do this is one of the areas of focus of Growing Up in New Zealand, New Zealand’s new birth cohort study.

“Immunisation decision-making by both mothers and fathers starts during pregnancy. Getting immunisations on time requires good relationships between families and health care providers.”

“Growing Up in New Zealand is ideally placed to help us know how to make further improvements in immunisation delivery. Of studies in New Zealand it is unique in that it has enrolled both parents, started during the pregnancy, and has maintained contact with 95 percent of the 6,846 children enrolled. Because Growing Up in New Zealand was able to enrol a socioeconomically and ethnically diverse sample it will be able to find answers to this and other important child health questions for children and families from all walks of life.”

Provided by University of Auckland

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