Meningococcal disease in New Zealand

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Over the last two decades, New Zealanders have become very familiar with the devastating effects of meningococcal disease, specifically the meningococcal serogroup B epidemic.

Over the 15-year period from 1991 to 2006, almost 250 New Zealanders (80% younger than 20 years) lost their lives. We became familiar with Charlotte Lucy Cleverley-Bisman who survived the disease but with severe disabilities.

An effective public health tool, the “tailor-made” MeNZB vaccine, was developed to combat the deadly epidemic and an extensive campaign delivered the vaccine between 2004 and 2006. The vaccine effectiveness, based on two differing methodological approaches was subsequently shown to be 73% and 80% (consistent with the 70–87% effectiveness predicted based on other serogroup B vaccines in 2004).

Unvaccinated individuals were 3.7 to 6 times more likely to develop disease than vaccinated individuals. The good news was that the B epidemic came to an end. Yet despite the proven vaccine effectiveness, debate occurred as to whether the 200 million dollar vaccination campaign was money well spent. “Hindsight is always easier than the dreadful moment of decision” are words by the novelist Richelle Goodrich that remind us of the dilemma faced by health authorities in 2001 (which was subsequently shown to be the peak) as the epidemic continued to unfold.

2011 saw the Northland region of New Zealand face a smaller, but no less significant dilemma, this time caused by serogroup C meningococcal disease. During the winter of 2011, a significant number of cases of group C disease were reported in this region associated with three deaths.

The article by Mills and Penney in this edition of the NZMJ details the success of a rapidly implemented vaccination programme for cluster control of this mini-epidemic. The achievement of 34,000 vaccinated young people and an overall coverage of 73% in twelve weeks should be congratulated and shows what can be achieved with collaboration and focus. Fortunately, public health were able to call on a highly effective (estimated to be 97% in adolescents) vaccine already in existence to control this cluster.

This article is a timely reminder, even with the decline of the MeNZB epidemic, of the serious harm meningococcal disease can cause to affected individuals, families and communities. New Zealand rates, although more than five times less than the peak years, continue to be higher than other developed countries.

Meningococcal C has now overtaken serogroup B as the strain accounting for the majority of deaths in New Zealand (10 of the 13 deaths in 2011). Although public health units will continue to “fire-fight” when clusters of serogroup C disease reach predefined “threshold” levels, has the time come to now include meningococcal C
vaccine, a highly effective public health intervention, into NZ’s immunisation schedule? Cluster control by definition is more focused, but considerably more expensive per vaccinated person.

The introduction of such a vaccine into the routine immunisation schedule has been proven to be safe and effective with Australia introducing it into their schedule in 2003 following the highly successful experience of the UK in 1999. As a result they are both living with a much decreased burden of C disease than that which currently exists within New Zealand.

The clinical diagnosis of meningococcal disease is often fraught with difficulties as highlighted in the recent media reports surrounding the death of 4th year medical student Zachary Gravatt in 2009 from meningococcal C disease. Vaccine prevention is a pivotal part of the answer to prevent more lives being lost.

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