

# ImmNuZ

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- Handbook 2006 – Now online

## Conjugate Pneumococcal Vaccine for Children

- Prevenar® now funded for very high-risk children
- Invasive pneumococcal disease is relatively common in NZ
- Prevenar® provides a very high level of protection

The 2006 Schedule recommends that funded pneumococcal conjugate vaccine (Prevenar®) be given to a small group of children at very high risk of invasive pneumococcal disease.<sup>1</sup> Does this herald universal childhood immunisation with this vaccine at a later date?

Pneumococcal disease is relatively common in this country. Estimates suggest that the rate of invasive pneumococcal disease, (e.g. meningitis, bacteraemia, septic arthritis), for children <2 yrs is around 80 per 100,000, with about a fifth of that meningitis.<sup>2</sup> Invasive disease is less common in older children and adults, but is a significant cause of morbidity and mortality in the elderly. Pneumonia is relatively common in NZ children and otitis media very common. *S. pneumoniae* is an important bacterial cause of these presentations, particularly those at the more severe end of the clinical spectrum.

International licensure of the vaccine was based on an efficacy study of 37,830 infants which demonstrated that Prevenar® provided 97% efficacy against invasive disease caused by the 7 vaccine serotypes.<sup>3</sup> The efficacy against disease caused by all strains of pneumococci was 89%. In addition, fewer episodes of clinical pneumonia and otitis media were diagnosed amongst vaccinated children.

Pneumococcal vaccination also has an impact on reducing carriage and reducing penicillin-resistant pneumococcal disease. Penicillin resistance is mainly confined to five of the serotypes which are included in the vaccine. A sustained reduction in carriage of vaccine serotypes in vaccinated children, and within their families, has been observed. Siblings of vaccinated children are less likely to carry antibiotic-resistant pneumococci than siblings of unvaccinated children.<sup>4</sup> Since February 2000, a seven-valent pneumococcal vaccine (Prevenar®) has been one of the routinely administered childhood vaccines in the USA for all infants. It is estimated that the serotypes in the vaccine would have covered around 85% of the invasive isolates from NZ children under age five in 2002.<sup>5</sup> Three doses, at least 4 weeks apart, beginning at six weeks of age are recommended with a booster dose in the second year of life with Prevenar®<sup>8</sup> across all age groups.

In 2005, CDC Atlanta reported on the effects of routine vaccination of children with Prevenar®.<sup>6</sup> There was a 94% decline in the incidence of vaccine-type invasive pneumococcal disease in children aged <5 years in 2003 compared with 1998-9. Furthermore, there was a decline in invasive pneumococcal disease in all other age groups, which did not have the vaccine, with the greatest reduction occurring in those 65 years and older. CDC estimated that of the total of 29,599 cases prevented nationally in 2003, 9140 cases were directly prevented by vaccination whilst indirect vaccine effects prevented 20,459 cases across all age groups.

It seems therefore that conjugate pneumococcal vaccination of children provides a

very high level of protection against invasive disease to those who receive the vaccine and furthermore, via its herd immunity effects, it significantly reduces invasive pneumococcal disease in the community with a considerable benefit to the population aged 65 and older. A third gain is the reduction in the incidence of invasive disease caused by resistant pneumococci. A reduction in pneumonia or otitis media in vaccinees has not yet been reported other than in the clinical trials.

The direct and indirect effects should both be considered when universal infant vaccination with a pneumococcal vaccine is debated. It appears to IMAC that the case for the introduction of routine pneumococcal conjugate vaccination to the childhood immunisation schedule is persuasive and that New Zealand should consider following other countries which have introduced the vaccine, such as the UK and Australia.

The full article by Dr Stewart Reid and references are available at [www.immune.org.nz](http://www.immune.org.nz)

1. New Zealand Immunisation Handbook, Ministry of Health Wellington 2006 [www.moh.govt.nz](http://www.moh.govt.nz)
2. Milne RJ, Lennon D, Grant C, Nua M. The epidemiology and acute costs of paediatric pneumococcal infection in New Zealand. Unpublished report to Ministry of Health 2003.
3. Black S, Shinefield H, Fireman B et al. Efficacy, safety and immunogenicity of heptavalent pneumococcal conjugate vaccine in children. *Pediatr Infect Dis J* 2000;19:187-95.
4. Data sheet – Prevenar <http://www.medsafe.govt.nz/profs/datasheet/p/prevenarinj.htm>
5. CDC. Preventing pneumococcal disease among infants and children. *MMWR* 2000;49(RR-9):1-35
6. CDC. Direct and indirect effects of routine vaccination of children with 7-valent pneumococcal conjugate vaccine on incidence of invasive pneumococcal disease – United States, 1998 - 2003. *MMWR* 2005;54(36):893-897.



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From the phones...

## Adult Patients Post Splenectomy

### SCENARIO

A search of the practice database has revealed a 25 year-old patient who had a splenectomy 6 years ago. The discharge letter does not mention any immunisation given pre or post splenectomy. No further note on file indicates they have received any vaccines and the patient is no longer under specialist care. Which immunisations is the patient eligible for?

### RESPONSE

It is recommended that the vaccines are administered pre-splenectomy, however when that has not occurred the patient is eligible for:

Immunisation: Adults Post-splenectomy				
Funded immunisations for splenectomised adults (over 16 years of age <sup>1</sup> )-from February 2006				
Vaccine	Trade Name	Primary course	Booster	Route
<b>Meningococcal ACYW-135</b>	Menomune™ ACYW-135	One dose	For special conditions only <sup>2</sup>	S/C
<b>Meningococcal B</b>	MeNZB™	Three doses given 6 weeks apart	No booster required	IM
<b>Hib</b>	Hiberix™	One dose	No booster required	IM
<b>Pneumococcal 23 PPV</b>	Pneumovax® 23	One dose	5 yearly booster	IM or S/C

<sup>1</sup>These vaccines are all inactivated and can be administered concurrently or at any time interval with other vaccines.

1. The recommended primary courses for children <16 years of age, pre or post splenectomy, varies by age and prior immunisation status. Details can be found in the Immunisation Handbook 2006.

2. There is little information available on the need for or timing of revaccination for older children and adults, although post immunisation antibody concentrations rapidly decrease over 2-3 years. Revaccination after 2-5 years may be indicated for people at continued high risk for disease (eg, people traveling in areas where the disease is epidemic), and patients with complement deficiencies.

### FUNDING

These vaccines and the immunisation benefit are funded for all pre and post-splenectomy patients regardless of when the splenectomy was performed. Claims are made via the Ministry of Health payment system.

### SECONDARY SPECIALIST RECOMMENDATION

Secondary care specialist recommendation is required for the vaccines pre-and post splenectomy immunisation programme for individuals at any age for the primary course, but not for the 5-yearly booster of Pneumovax 23. The recommendation can usually be gained by telephone and it is not intended that patients attend an additional specialist consultation.

(Note: Children age 0-16 years with functional asplenia or other specific risk conditions also require secondary specialist recommendation to be eligible for funded pneumococcal vaccines.)

### RECORDING

Immunisation information for the pre and post-splenectomy immunisation programme will be recorded on the NIR. To date only the MedTech and Houston PMS systems have been updated to collect this information on the NIR. All other practices will have to continue to use the manual NIR3P form until they have been notified by their PMS vendor that their software has been updated.

### VACCINE ORDERING AND DELIVERY

The funded vaccines are all available from regional ProPharma stores.

## MeNZB™ - Brief update

May 2006 – the Ministry of Health announces there was new operational funding for the Meningococcal B Immunisation programme to continue until the end of 2006.

December 2006 – People aged 5-19 years old now have until the end of the year to complete their full immunisation course. All three doses of MeNZB continue to be funded for this age group.

2007-2009 MeNZB continues to be recommended for newborns (4 doses) and under 5's until 2009 or until new medical information warrants earlier cessation.

## Latest VPD Cases New Zealand

**Tetanus in Waikato:** A 10 year-old unimmunised Cambridge schoolgirl was hospitalised and severely ill in Starship Hospital in March with tetanus. Advisors from 0800 IMMUNE have reported more requests for information on catch-up immunisations for children, who did not have tetanus cover, since this case.

**Pertussis in Porirua:** Police College spokeswoman, Toni Barlow reported four people had been diagnosed with whooping cough and 34 more recruits were put into isolation and were taking antibiotics as a precaution in March 2006.

## International

**Measles in Fiji:** A mid-February outbreak has now been brought under control by a mass vaccination campaign and effective communication, according to Fiji's National Programme Manager, Dr Samulea. At May 12th 2006, the total measles cases in the country were 125. The highest incidence of measles cases was in children between the ages of one and four, while geographically, the most number of cases was found in the Western parts of Fiji, which reported 112 cases, of which 55 were in Nadroga.

### Mumps in Iowa:

Two infected airline passengers may have helped spread mumps from Iowa to several other Midwestern states in the USA, according to health officials. Iowa reported 1487 confirmed and suspected cases to May 2006. At least 1110 other cases are under investigation in Nebraska, Kansas, Wisconsin, Minnesota, Missouri, Pennsylvania, South Dakota and Illinois. Most of the cases are college students.

## Pneumococcal Vaccine



## Thiomersal and Autism Revisited

- No NZ childhood vaccines have thiomersal as a preservative
- Most autism has a genetic basis.
- Mercury poisoning does not give rise to autism or autistic-like symptoms.
- The accumulated evidence from multiple types of studies does not support a causal relationship between thiomersal and autism
- There is no scientific debate on this subject
- It is not clear whether autistic children have problems eliminating heavy metals from their bodies.

Media attention in the USA has again stirred public controversy over the preservative thiomersal and purported links with autism, in particular, a theory that some children may be predisposed to toxic effects from only a tiny amount of thiomersal. We again review the key evidence in this discussion.

### What is thiomersal?

Thiomersal (also known as thimerosal) is a mercury-based preservative used in some vaccines and other pharmaceutical products, such as antiseptics.

### Is this concerning?

No, firstly because extensive research has shown that thiomersal in vaccines is safe and secondly, because there is no thiomersal in the routine schedule childhood vaccines given in New Zealand to children since 2002.

Some influenza vaccines contain thiomersal, (but not the 2006 funded vaccines). There has never been thiomersal in MMR vaccine.

### Experience with mercury

- Iraq had one of the worst single-source mercury poisonings in history when 6500 people were hospitalized and 450 died. Pregnant women delivered babies with epilepsy and mental retardation. However, they did not deliver babies with an increased risk of autism.<sup>1</sup>
- Several excellent studies comparing the risk of autism in children who received vaccines containing thiomersal to those who did not, consistently found the incidence of autism the same in both groups.<sup>2,3</sup>
- Studies of the head size, speech patterns, vision, coordination and sensitisation of children poisoned by mercury show that the symptoms of mercury poisoning are clearly different from the symptoms of autism.

### Causes of Autism

Autism clearly has a genetic basis. When one identical twin has autism, the chance that the other twin has autism is about 90%. However, for fraternal twins, the chance is less than 10%.

There are also environmental causes of autism. For example mothers who took thalidomide early in pregnancy had an increased risk of having babies with autism. Also, babies of mothers infected with rubella early in pregnancy are at increased risk of autism. However babies infected with the virus after birth do not develop autism. There are clearly windows, early in development, for viruses or drugs to cause autism, although the window appears closed later in pregnancy or after birth.

In contrast, women in the USA were occasionally exposed to mercury when they were given a product called RhoGam. The product RhoGam contained thiomersal as a preservative. Babies exposed to RhoGam did not have a higher risk for autism than babies who never received RhoGam.

In summary, autism is a known complication of some vaccine-preventable diseases. While the community discussion may be complex, the risk/benefit evidence is clear that children with a family history of autism are advised to be fully immunised with the national schedule vaccines.

Excerpt from *Thiomersal and Vaccines*, IMAC, May 2006. [www.immune.org.nz](http://www.immune.org.nz)

1. Marsh DO, Clarkson TW, Cox C, Myers GJ, Amin-Zaki L, Al-Tikriti S. Fetal methylmercury poisoning. Relationship between concentration in single strands of maternal hair and child effects. *Arch Neurol*. 1987 Oct;44(10):1017-22.

2. Heron J, Golding J, and ALSPAC Study Team. Thimerosal Exposure in Infants and Developmental Disorders: A Prospective Cohort Study in the United Kingdom Does Not Support a Causal Association. *Pediatrics* 2004;114(3):577-583 Link <http://pediatrics.aappublications.org/cgi/reprint/114/3/577> (accessed April 18 2006)

3. Heron J, Golding J, and ALSPAC Study Team. Thimerosal Exposure in Infants and Developmental Disorders: A Prospective Cohort Study in the United Kingdom Does Not Support a Causal Association. *Pediatrics* 2004;114(3):577-583 Link <http://pediatrics.aappublications.org/cgi/reprint/114/3/577> (accessed April 18 2006)

## Influenza immunisation proves popular this season

The National Influenza Strategy Group chair Michelle Kapinga reports that vaccinators are doing a great job keeping up with an upsurge in the number of New Zealanders getting influenza immunisation this season. Latest figures and report state we have surpassed last year's total already

Six weeks into the National Influenza Strategy Group's (NSIG) four-month campaign, surgeries and clinics had received more than 557,280 doses of influenza vaccine, which is more than three quarters of all doses distributed in the entire 2005 season, according to distribution figures from Healthcare Logistics.

"These figures indicate vaccinators have, to date, experienced a higher level of demand and have made sure they have sufficient stocks on hand," says Michelle. Michelle says the Influenza immunisation campaign has gone very smoothly this season with the vaccine and Influenza Kits arriving on time and supplies being distributed efficiently to surgeries and clinics.

"While the impending threat of pandemic influenza has undoubtedly heightened awareness among the public, we believe some of the increased demand has been generated by the recommendations of health professionals to their patients," says Michelle.

NSIG's previous research has shown that a recommendation from a health professional is still one of the keys to increasing influenza immunisation rates. Based on research completed after the 2005 influenza promotional season, NISG has chosen to continue its advertising campaign this year - "You're never too fit to get hit".

"Our research showed the campaign was effective and had relevance to all target groups," adds Michelle.

### Looking Back to Influenza 2005

#### Summary:

During the 2005 influenza season, 3929 consultations for influenza-like illness (ILI) were reported from a national sentinel network of 87 general practices. It is estimated that ILI resulting in a visit to a general practitioner affected over 47 108 New Zealanders (1.3% of the total population) during the season, compared with an estimated 35 186 in 2004. The national level of ILI in 2005 was relatively high compared with the 1997-2004 period. The highest rates were reported from the Eastern Bay of Plenty and Otago Health Districts. In 2005, 86.9% of influenza isolates were influenza B, and 13.1% were influenza A. Among all typed and subtyped isolates, influenza B/Hong Kong/330/2001 – like viruses were predominant at 71.0%.

#### 2006 Vaccine

The recommended influenza vaccine formulation for New Zealand in 2006 is:

- A(H1N1) an A/New Caledonia/20/1999-like strain
- A(H3N2) an A/California/7/2004-like strain
- B a B/Malaysia/2506/2004-like strain



Influenza in New Zealand 2005 ESR Report for Ministry of Health, May 2006

## Latest Resources

### Immunisation Handbook 2006 ONLINE

*The Immunisation Handbook 2006* (Handbook) is now available as a PDF document for download from the Ministry of Health website <http://www.moh.govt.nz/immunisation>. Because the Handbook is a large document, it has also been split into a series of smaller PDFs relating to each section or chapter.

Printed copies of the Handbook will be mailed to the immunisation sector from mid-May. The Handbook has been updated to include:

- Information to explain the changes to the 2006 National Immunisation Schedule, including the two new immunisation programmes for high-risk individuals effective from 1 February 2006.
- Updated NZ epidemiology on vaccine-preventable diseases since 2001.
- Information on the National Immunisation Register.
- The addition of a chapter on new vaccines (Chapter 19) that protect against infection with human papillomavirus and rotavirus.
- Some results from the National Immunisation Coverage Survey 2005.
- A key points section for each of the chapters that focuses on each particular disease.
- The protocol for New Zealand authorisation as an Independent Vaccinator.



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## E-Learning

### Pandemic Influenza Education

A web - based learning programme on Pandemic Influenza preparedness for Primary Health Care staff is now available directly via [www.icomet.org.nz](http://www.icomet.org.nz), or via the IMAC website [www.immune.org.nz](http://www.immune.org.nz)

This course aims to provide the best possible information for Influenza Pandemic Planning in New Zealand and to equip practitioners with a firm platform of knowledge. This has been funded and approved by the Ministry of Health.

#### KEY COURSE OBJECTIVES

- Participants can identify the key issues needed to plan for pandemics
- Participants can understand the importance of pandemic planning

#### LEARNING OUTCOMES

- Identify the actions that you need to take to prepare your practice for a pandemic in the context of the NZ national plan and local plans in your area
- Understand the relation between seasonal, avian and pandemic influenza and the possible scenarios for the next pandemic
- Be familiar with the key communication messages for the primary health care team and the community
- Know where to access further information

The Royal New Zealand College of General Practitioners (RNZCGP) has approved this learning module for up to two education hours (up to 4 credits for Advanced Vocational Education (AVE) – and Maintenance of Professional Standards (MOPS) purposes).

A power point presentation covering the same material is available on CD. This can be downloaded from the IMAC website <http://www.immune.org.nz> or can be obtained via request from the Immunisation Advisory Centre office on 09 3737599 extn 86191 or [imac@auckland.ac.nz](mailto:imac@auckland.ac.nz). There will be a charge of \$10 to cover the cost of production and delivery.

## Latest Research

Hak E, Buskens E, Nichol KL, Verheij TJM. *Do recommended high-risk adults benefit from a first influenza vaccination?* *Vaccine* 2006;24(15):2799-2802.

**Aim:** To establish the effectiveness of influenza vaccination in preventing clinical outcomes in influenza seasons with epidemic activity in adults at high risk from complications from influenza, (including asthma, diabetes, heart disease chronic infection etc)

**Method:** Secondary analysis using the Dutch Prevention of Influenza, Surveillance and Management (PRISMA) Nested Case Control study. Risk of hospitalization and mortality during the 1999-2000 influenza A epidemic after first, and repeat, influenza vaccination in high-risk adults under 65 years of age was assessed.

**Results:** After adjustments, 69% of hospitalizations for acute respiratory, CVD or death were prevented in first-time vaccinees. In previously vaccinated persons, this was 85%.

**Conclusion:** Adult persons with high-risk medical conditions can substantially benefit from a first, and repeat, influenza vaccination prior to an epidemic.

## WellChild Week 2006

WellChild/Tamariki Ora week is here again - this year we are getting back to basics for the week and focusing on the WellChild/Tamariki Ora book and the 12 free checks available to all New Zealand children between the ages of 0 and 5 years.

The book is a record to be shared by parents and professionals and contains useful information for parents and caregivers to help them assist their children to grow and thrive, be fit and healthy and ready to learn when they start school at 5.

We are also attempting to have 4 quarterly themes for a WellChild/Tamariki Ora year and this quarter would like to join IMAC in promoting immunisations for all Tamariki as part of keeping them healthy.

For more information on WellChild/Tamariki Ora contact Dr. Marguerite Dalton on 09 373 7599 ext 84666 or visit [www.wellchild.org.nz](http://www.wellchild.org.nz).

### Bouquet of Excellence

*Congratulations to: Anne Burton,*

*Practice Nurse at Katikati Medical Centre. Her Practice colleagues say "She is knowledgeable and passionate about all aspects of immunisation and has increased the coverage rates with her work on recalls and 'hard-to-reach' children. She is a mentor and resource person to the new practice nurses and is hugely respected and loved by the Katikati community"*

*Each quarter, IMAC sends a bouquet of flowers to the practice nurse who best fits the values of high quality, people-centred practice in immunisation. Send your nominations to Colleen Courtenay, fax: 09 373 7030, email: [c.courtenay@auckland.ac.nz](mailto:c.courtenay@auckland.ac.nz)*

