Issue 32 – December 2010

Sharp and to the Point

Quarterly newsletter produced by the Immunisation Section, SA Health

In this issue

This newsletter is produced quarterly by the Immunisation Section. If you have any feedback or comments on what you would like to see in future editions; or would like to receive further copies or have your name removed from our mailing list, please contact Sara Almond on phone (08) 8226 7177, fax (08) 8226 7197 or email sara.almond@health.sa.gov.au

Protect yourself. Protect your patients. Vaccinate!

Vaccination provides the best protection against all vaccine preventable diseases. Health care workers have a duty of care to reduce the risk of transmitting infections to susceptible patients, and if not adequately immunised, they are also at increased risk of getting a vaccine preventable disease from their patients or colleagues.

There are some transmissible infections, such as pertussis, where infants under the age of 6 months are too young to be fully immunised. Under these circumstances an infant's best defence is for all those around them, including their health care workers, to be fully immunised against pertussis.

SA Health encourages each and every Health Care Worker (HCW) to ensure the following vaccinations are up to date:

- Diphtheria/Tetanus
- Pertussis
- Hepatitis B
- Influenza
- Measles Mumps Rubella (MMR)
- Varicella

Additional vaccinations are also recommended for HCWs working in specific environments. For further information about health care worker immunisations please contact the Immunisation Section on (08) 8226 7177.

Government of South Australia
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The Blue Book Day – A pilot program to improve 4 year old vaccinations

South Australia currently has one of the lowest 4 year old immunisation coverage rates in Australia. According to the Australian Childhood Immunisation Register (ACIR) many South Australian children between 5 and 7 years of age are overdue for their 4 year old immunisations.

The Immunisation Section, together with the Department of Education and Children's Services (DECS), is about to embark on a new initiative, called the Blue Book Day as a part of the SA Health 4 year old strategy which aims to improve immunisation coverage rates in this age group.

The Blue Book Day will involve children in Kindy, Reception, and Year 1 from a number of metropolitan and regional kindergartens and primary schools in South Australia. On Blue Book Day children will be asked to bring their blue books (or other immunisation records) to school. Information entered into every child's blue book or immunisation record will be assessed and compared to data on the ACIR by a visiting immunisation nurse. The nurses will update immunisation information on the ACIR where a child has a record of receiving their 4 year old vaccinations in their blue book only.

Where there is no record of the 4 year old vaccinations, nurses will send an information package to the parents/guardians.The information package will contain a letter emphasising the importance of their child being up to date with their 4 year old vaccinations together with a Council timetable to inform parents about when and where their child can be vaccinated.

Rabies in Bali: an international perspective

Although rabies is a vaccine-preventable disease it remains a significant public health issue in many countries across the world, and particularly throughout Asia and Africa. According to the World Health Organisation (WHO) each year, across the globe, approximately 55,000 people die from rabies, with the majority of those deaths occurring in Africa and Asia.[1]

Humans most often become infected with rabies following a bite or scratch from a dog, cat, monkey, bat or other animal infected with the disease. Once the signs and symptoms of rabies start to appear, there is no treatment and the disease is almost always fatal.[1]

Bali, a popular Asian holiday destination for Australians, was historically free of rabies. In November 2008, the first fatal human case of rabies occurred in Bali and following an investigation an outbreak of rabies on the island was confirmed[2]. Since then, 93 people have reportedly died from suspected rabies spread from dog bites, and the number of dog bites sustained on the island continues to rise[3]. This has occurred despite the Indonesian Government's expenditure and effort to vaccinate pet dogs and eliminate stray animals[3].

The Australian Department of Foreign Affairs and Trade (DFAT) has issued warnings regarding travel to Bali[4] and it is important that health service providers are aware of these recommendations. DFAT advises visitors to avoid direct contact with dogs, cats, monkeys and other animals. They advise that if a bite or scratch is sustained from an animal, immediate medical attention must be sought and that post exposure rabies prophylaxis is undertaken. Post-exposure rabies prophylaxis may be limited in Bali, and bite victims may have to return to Australia (or travel to a third country) to receive recommended prophylaxis[4].

The recommendations for seeking rapid post-exposure treatment are echoed by the WHO, who state that when post-exposure treatment is initiated early, using rabies vaccine and immunoglobulin (where indicated by the recommendations), may be 100% effective in preventing death[1].

In South Australia, post-exposure prophylaxis advice for patients is available from the Immunisation Section, SA Health. If a patient presents reporting an animal bite or scratch in Bali (or other rabies endemic area), it is recommended that the Immunisation Section be immediately contacted in order to determine and initiate an appropriate course of action.

DFAT advises people planning to travel to Bali for prolonged periods to discuss pre-exposure rabies vaccination with their doctor or travel clinic[4].

For further information on the travel advice to Bali please visit: http://www.smartraveller.gov.au/zw-cgi/view/Advice/Indonesia

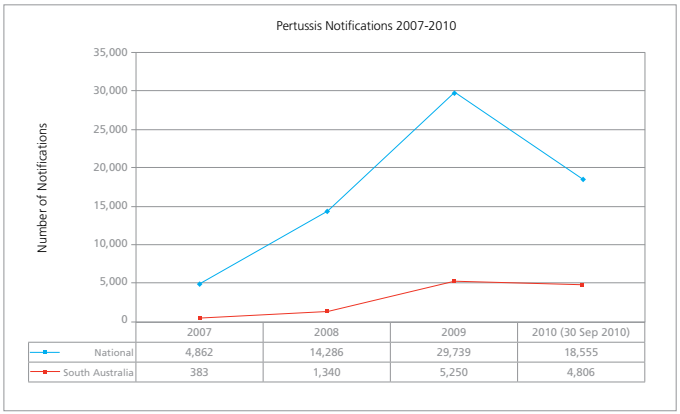
References

1. World Health Organisation 2010, *The World Health Organisation*, viewed 14 Sept 2010, <http://www.who.int/rabies/en/index.html>
2. Tallis G 2009, 'Rabies outbreak in Bali', *Communicable Disease Newsletter: WHO Regional Office for South-East Asia,* vol 6, issue 1, viewed 14 Sept 2010, <http://www.searo.who.int/LinkFiles/CDS_News_letter_vol-6_issue-1.pdf>
3. ProMED Mail 2010, *Rabies, Human – Indonesia,* viewed 14 Sept 2010, <http://www.promedmail.org/pls/otn/f?p=2400:1001:848939575668491::NO::F2400_P1001_BACK_PAGE,F2400_P1001>
4. Department of Foreign Affairs and Travel 2010 *Travel Advice: Indonesia,* viewed 14 Sept 2010, <http://www.smartraveller.gov.au/zw-cgi/view/Advice/Indonesia>

Focus on... Pertussis

Recommendations and rationale for adult pertussis vaccination

South Australia is currently experiencing its worst pertussis outbreak on record. Other States and Territories across Australia are also experiencing high numbers of pertussis notifications. Whilst it is common for there to be pertussis outbreaks every 3 to 4 years, pertussis notifications across Australia have increased considerably since 2007.
The graph below demonstrates the increase in pertussis notifications in South Australia and Australia.



	2007	2008	2009	2010 (30 Sep 2010)
National	4,862	14,286	29,739	18,555
South Australia	383	1,340	5,250	4,806

Health authorities have identified a number of factors contributing to the increase in pertussis notifications including:

- improvements in testing methods
- increased testing by GPs for pertussis infection
- waning immunity following primary course of vaccinations or natural infection
- only 87.2% of all 4 year old children in South Australia are fully vaccinated compared to 89.6% nationally *(ACIR Immunisation Coverage Rates as of 30 June 2010)*

Immunity from both vaccination and natural infection is not life long, with immunity in both instances lasting between 6 to 10 years. Evaluation of pertussis notifications shows there is an increase in the number of pertussis diagnoses in adults. This is likely to reflect waning immunity in the older age group making them more susceptible to pertussis infection.

A sustained pertussis outbreak, like the one SA is currently experiencing, places children under 6 months of age at risk of disease, complications or death as they are too young to be fully immunised. Family members are the main source for pertussis transmission in babies under the age of 12 months where a source of pertussis infection can be identified. The mother is the main source in 12-50% of pertussis infections in children under 12 months of age; the father in 10-24% of cases; a sibling in 16-25% of cases; and a grandparent in 4-6% of cases. *(Ref: Kristine Macartney review – PHAA Pre-conference Seminar Day, Effective Immunisation – its more than a jab! August 2010).*

Maintaining high vaccination coverage rates in children, and especially in the 4 year old group, will help to control the spread of pertussis in the community. 4 year old immunisations can now be given from the age of 3½ years as these children when vaccinated can reduce the risk of transmission to younger siblings.

Free pertussis vaccine for new parents and grandparents who hold Health Care Cards or Pensioner Concession Cards

In response to high numbers of pertussis notifications, free vaccine has been made available through public maternity hospitals, GPs and some local councils to parents and grandparents of children less than 6 months of age who hold a health care card or a pensioner concession card until 31 December 2010.

Parents and grandparents of children less than 6 months of age who do not hold these cards are encouraged to purchase the dTpa vaccine on prescription from their GP or local council immunisation clinic at a cost of approximately $40 to $50.

General Practitioners and other immunisation providers are strongly encouraged to promote the dTpa vaccination to the following groups:

- new parents
- grandparents with a newborn child in the family
- those planning a pregnancy
- those who work with young children e.g. Child Care Workers
- all health care workers and especially midwives and those who work with neonates; and
- any adult expressing an interest in receiving a diphtheria tetanus booster (for example at 50 years of age)

To increase awareness about pertussis the Immunisation Section has developed a brochure called **"Whooping Cough (Pertussis) - Who Should Be Vaccinated?"** This brochure can be viewed or downloaded at:

http://www.health.sa.gov.au/pehs/Immunisation/whoopingcoughdl-phcc-sahealth-1006.pdf and ordered from the Immunisation Section.

Did you know?

There is no minimum time interval between dTpa and other tetanus containing vaccines. This means the dTpa vaccine can be administered anytime after a previous ADT Booster® vaccine.

At this stage there is no recommendation for repeat doses of the dTpa vaccine – Boostrix® or Adacel®. The dTpa vaccine Boostrix® has been made available free to students in Year 9 since 2004. This means students who previously received Boostrix® through the school program should not receive another dose of Boostrix®.

For more information about pertussis please contact the Immunisation Section, SA Health Ph: (08) 8226 7177

Cold chain backup plan

The Immunisation Section recently conducted a study into cold chain breaches in General Practice. The study showed that the majority of vaccine losses occur as a result of heat exposure following power failures.

Having an alternate means of vaccine storage in the event of a power failure will help reduce vaccine losses and allow providers to continue to store vaccines between the recommended temperatures of 2ºC and 8ºC.

Do you have a back up plan and storage equipment if a power failure occurs.

Alternative vaccine storage in the event of a power failure may include any of the following:

1. **A back-up generator for the practice**
2. **A monitored fridge "off site"**

If you are planning to use a monitored fridge off site (e.g. local hospital) ensure an agreement has been put in place with the relevant organisation prior to the event. Also consider that this organisation may also be affected by a power failure.

3. **An esky or cooler**

If you plan to use an esky or cooler to store vaccines during a power failure the following equipment will be necessary:

- Appropriate size esky or cooler to accommodate all vaccines
- Ice packs or gels
- Insulating material e.g. polystyrene chips, bubble wrap, shredded paper
- Minimum/maximum thermometer (available from the Immunisation Section)
- Freeze sensitive monitor (available from the Immunisation Section)

Pack the esky/cooler according to the National Vaccine Storage Guidelines 'Strive for Five'.

Continue to closely monitor the temperature of vaccines whilst stored in the esky or cooler.

Once power has been restored ensure the fridge temperature has returned to between 2ºC – 8ºC prior to returning vaccines.

When to implement the backup plan

Domestic fridge

- During a power failure of 4 hours of less the fridge door should be kept closed and fridge temperatures closely monitored.
- For a power failure more than 4 hours vaccines are at risk and an alternative means of vaccine storage will need to be used.

Purpose-built vaccine fridge

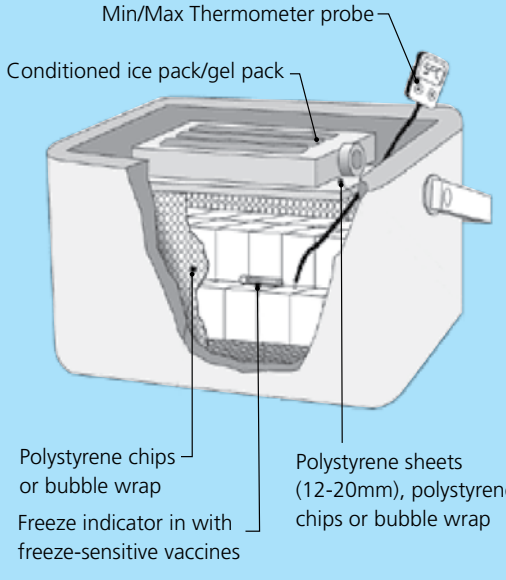
- Depending on the quality and design of your purpose-built vaccine fridge, it may warm quickly during a power failure. Providers may need to contact the fridge manufacturer to establish this time period.
- Monitor the temperature of your fridge. Please note that not all purpose-built fridges continue to display the current temperature during a power failure. Your fridge may not have a temperature monitoring battery back-up which can operate independently of the fridge.
- A separate battery operated minimum/maximum thermometer (available from the Immunisation Section) can assist in continually monitoring fridge temperatures during power failures.
- An auto-dialler alarm system can be installed in purpose-built vaccine fridges. This system sends an electronic alert to designated phone number/s outside business hours if the temperature moves outside 2ºC – 8ºC. The alerted staff member can take action and may prevent vaccine losses.
- If vaccines are at risk use alternative storage arrangements.

References

National Vaccine Storage Guidelines Strive for Five (2005) http://www.health.gov.au/internet/immunise/publishing.nsf/content/DF94731AD8CBF34ECA2575BD001C8129/$File/strive-4-five.pdf

Queensland Government KISS Guide to Vaccine Management 2007.

Example of a packed 10L cooler



Chain of Protection – a new and exciting website

Chain of Protection is a new website that provides both members of the public and health professionals with information about immunisation in an easy to understand format.

The website was developed by Professor Robert Booy, Infectious Diseases Specialist and Pediatrician, Head of Clinical Research, National Centre for Immunisation Research and Surveillance (NCIRS) in Australia.

The website features a number of short videos that discuss topics such as:

- herd immunity
- whooping cough
- meningococcal disease
- disease transmission
- disease prevention

Information presented in the videos are both interesting and informative, allowing the viewer to gain a broad but comprehensive understanding on each topic. These "fast fact" videos (each 1 – 3 minutes in duration) are designed for people with busy lives and are ideal for health professionals who wish to view alongside their clients.

The Chain of Protection web site includes interviews with parents who have lost a child to a vaccine preventable disease; visual demonstrations about how easily diseases can be spread and information about the protective value of a population with high vaccination coverage rates (herd immunity).

The website contains a variety of immunisation fact sheets, information on the Australian Immunisation Childhood Register, a link to the Immunisation Schedule, and references to other useful web sites.

View online at: www.chainofprotection.org

Customer ID stickers

The Immunisation Section allocates every immunisation provider in South Australia a Customer ID Number.

When immunisation providers submit a Vaccine Distribution Centre (VDC) Order form for vaccines the Customer ID number is entered in the top, left hand corner of the form. This number is also requested when providers report a cold chain breach to the Immunisation Section.

The Immunisation Section will be issuing all immunisation providers with a full page (A4 sheet) of stickers with the name of the organisation and Customer ID Number printed on them.

It is recommended these stickers are placed on fridges, phones, immunisation folders or any place where they can be easily sighted for entering on the VDC order forms or when speaking with staff from the Immunisation Section.

Requests for additional Customer ID Number stickers can be made by directing your enquiry to: Immunisation Section, Communicable Disease Control Branch, phone (08) 8226 7177.

Intensive immunisation education

In July this year the Communicable Disease Control Branch (CDCB) hosted a visit by Dr David Baxter from Stockport, England. Dr David Baxter is a Lecturer in Public Health Medicine at the University of Manchester and Consultant in Public Health Protection, Director of Infection Prevention and Control, Immunisation Coordinator and Major Incident Management Officer for the Stockport Primary Care Trust.

Dr Baxter has been involved in research and teaching with a focus in vaccine preventable infections and sexually transmitted diseases. Dr Baxter offers the "Stockport 3 Day Immunisation and Vaccination Workshop" to health professionals through the University of Manchester. Dr Baxter first developed this training course in 1991 in response to health professionals who expressed a need for more detailed information, knowledge and skills around immunisation.

Dr Baxter was invited to South Australia to facilitate a 3 day intensive immunisation training course for invited health professionals and staff from the CDCB. Dr Baxter modified the training to take into account the current context and learning needs of immunisation providers in South Australia.

Dr Baxter's relaxed presentation style, combined with his use of analogies and unique learning tools made this course relevant, informative and enjoyable for all those who attended.

The Immunisation Section is now in the process of developing a similar extensive Immunisation Course for all South Australian immunisation providers. It is anticipated that the course will provide participants with more detailed knowledge about general immunisation topics including but not limited to, microbiology, immunology, vaccines, vaccine components, cold chain and adverse events.

Information about immunisation education can be obtained from the Immunisation Index web pages at www.health.sa.gov.au/pehs/immunisation-index.htm

Will the Nanopatch be the future of vaccine delivery?

For over 10 years, needle-free delivery of vaccines has been a challenge for global health. There are several biotech companies world wide developing needle-free delivery systems. In recent years the most promising development for immunisation has been the transcutaneous delivery system.[1]

Though novel for vaccine delivery, medicines are being delivered transcutaneously through a patch on the skin to help quit smoking and deliver hormone replacement therapy. This is because the skin contains an abundance of the types of cells that are important in generating immune responses thereby making it a particularly attractive site for immunisation.[2]

Researchers at the Australian Institute for Bioengineering and Nanotechnology have demonstrated that an immune response, with similar protection to that of the traditional needle and syringe delivery, can be obtained for a vaccine delivered via a transcutaneous Nanopatch using 100 times less vaccine.[3]

The Nanopatch has the vaccine dry coated onto thousands of tightly packed projections covering less than the size of a postage stamp. When these projections pierce the skin they get wet and begin to dissolve, targeting the specific antigen presenting cells just beneath the skin.[3]

Another research team from the Georgia Institute of Technology has developed a patch using dissolving miro-needles. This patch works similar to the Nanopatch in that once the needles come in contact with the skin they begin to dissolve and carry the vaccine with them.[2]

The advantages of this novel delivery system include the following:

- no refrigeration and therefore no cold chain breaches
- no hypodermic needle and therefore no risk of needle stick injuries
- no risk of cross contamination as a consequence of re-using needles
- less vaccine used per patch, means a lower per unit cost for each vaccine, thus allowing greater access and affordability of vaccines for those in developing countries
- the postage stamp size of the vaccine will allow for much faster and more efficient vaccine distribution methods (vaccines can be posted or received over the counter)
- the vaccine can be self administered

With human trials the next stage for the Nanopatch we will await the outcome with great anticipation.

References

1.http://health worldnet.com/TheCuttingEdge/Needle-Free-Vaccines-Are-We-There-Yet/?C=6329

2.Georgia Institute of Technology Vaccine –delivery patch with dissolving micro needles boosts protection, http://www.gatech.edu/newsroom/release.html?nid=60096

3.Less is more! Nanopatch is 100 times better than needle and syringe, http://www.uq.edu.au/news/index.html?article=21034

Need just enough vaccine? Here's how to order

Immunisation providers in South Australia are able to order National Immunisation Program (NIP) funded vaccines from the VDC each fortnight (excluding 2 weeks over the Christmas period) according to a specific timetable (this timetable is sent to providers each year).

It is important that providers do not stockpile vaccine, to prevent losing high numbers of vaccines in the event of a power failure. Vaccines should only be ordered according to the previous fortnight's usage, plus 10%.

The following formula will assist to ensure that enough vaccine is ordered on a fortnightly basis to meet demand. Over time, the application of this formula will allow you to streamline the ordering process so that you will only order the amount of vaccine you will require.

Vaccine Delivery Date	Vaccine Ordering Date	Formula for ordering vaccine	Total amount to re-order
Document total stock numbers in the fridge (when vaccines are delivered and put away in the fridge)	Document the total stock used during the previous fortnight	Order the number of doses used in the previous fortnight plus 10%	Place order
Example Meningococcal C	*Meningococcal C*	*Meningococcal C*	*Meningococcal C*
Total 20 doses (in fridge)	*10 doses left in fridge. So 10 doses have been used.*	*10 doses (used) + 10% = 1 dose*	*Order 11 doses*

Innovation and best practice in immunisation

Congratulations to Mary Orr who was nominated by Val Fairbanks, Immunisation Coordinator, District Council of Mt Barker.

As a way of increasing immunisation coverage rates for 4 year olds living in the Adelaide Hills, Mary's initiative involved the development of a ***Kindy Card.***

Produced in partnership with the Hills Immunisation Network, ***Kindy Cards*** are bright, colourful cards that are personally written and posted to each child on their 4th birthday. They serve as a timely reminder to parents that their 4 year old child is now due for their booster shots.

Kindy Cards have been used for the past 12 months by Adelaide Hills GP practices and other immunisation providers. They act as a positive prompt to parents about the need for their child's timely vaccination and replaces the need for 'overdue' letters. As a result there has been an increase in immunisation coverage rates for this hard to reach group in the Adelaide Hills area.

Staff at the Adelaide Hills Division of General Practice and the Immunisation Section would like to congratulate Mary for her innovation in improving 4 year old immunisation rates with her colourful resource.

Each quarter the Immunisation Section will send a quality gift hamper to the provider who fits the values of innovation and best practice in immunisation. Please send nominations to Sara Almond at the Immunisation Section – (08) 8226 7177 or email Sara.Almond@health.sa.gov.au

AHDGP CEO Keven Wisdom-Hill (left) presenting Mary Orr (right) with the hamper from the Immunisation Section

Egg allergy and influenza immunisation

New research indicates that most egg allergic children may now safely receive influenza vaccine. Dr Ray Mullins, President of the Australasian Society of Clinical Immunology and Allergy (ASCIA) indicates that current evidence suggests a split dose schedule will result in safe vaccination.

The contra-indication for egg allergy and influenza vaccine in the current NHMRC recommendations is based on dated studies when the amount of egg protein previously contained in influenza vaccine was higher than current vaccines which use only about 1µg per dose, a minuscule amount compared to the 130µg likely to trigger an anaphylactic reaction if taken orally. Most reported cases of anaphylaxis in egg allergic patients after vaccination with influenza vaccine occurred over 20 years ago.

In a Canadian study of split dose H1N1 vaccination of 830 egg allergic children, nine developed rash and three developed bronchospasm, but none proceeded to anaphylaxis. Closer to home, in Western Australia 165 egg allergic children were vaccinated and one child developed mild facial urticaria.

British, Canadian, US and European consensus guidelines suggest most patients with egg allergy can safely receive seasonal influenza vaccine if they contain no more than 1µg/dose of egg ovalbumin.

The split dose schedule involves one tenth of the vaccine given first, then the remainder given 30 minutes later, followed by 30 minutes of observation.

The new guidelines can be found at www.allergy.org.au/content/view/27/8

Patients with past egg anaphylaxis or egg avoidance should be treated as a high risk group and seek specialist advice.

Documented cases of anaphylaxis to influenza vaccine remain a contraindication to further administration regardless of egg allergy status.

Reference:

"Influenza vaccination of the egg- allergic individual" Raymond J Mullins, Andrew Kemp and Michael Gold; MJE, volume 193 Number 5, 6th September 2010 Medical Observer, 10 September 2010

A christmas message for all of you, from all of us!

The Immunisation Section takes this opportunity to wish you all a very happy, safe and enjoyable festive season. We look forward to our continued and productive working relationship with you all in 2011.

Clinical trials underway for new rotavirus vaccine for newborns

Researchers from the Murdoch Children's Research Institute in Melbourne have developed a rotavirus vaccine for newborns. As this new vaccine can be administered at birth it has the potential to save thousands of lives, especially those in developing countries. The World Health Organisation estimates that globally, in 2004, there were 527,000 rotavirus deaths in children under the age of 5 years.

Recruitment is currently underway for a clinical trial involving the administration of a single oral dose. Further trials will commence in Indonesia and New Zealand.

It is hoped that the vaccine will be on the market within 5 years.

Reference: Murdoch Children's Research Institute, www.mcri.edu.au

Questions and Answers

Q What resources are available to providers who are faced with anti-immunisation arguments?

A *There are several excellent resources available to assist in answering these often complex and difficult questions. They are:*

1. Myths and Realities. Immunise Australia
   www.health.gov.au/internet/immunise/publishing.nsf/Content/uci-myths-guideprov
2. The National Centre for Immunisation Research (NCIRS)
   http://www.ncirs.edu.au/immunisation/fact-sheets/index.php

   This web site covers the following topics:

   - > Diabetes and vaccines
   - > Homoeopathy and vaccination
   - > Thiomersal
   - > Vaccine components
   - > Hepatitis B and multiple sclerosis
   - > MMR vaccine, inflammatory bowel disease and autism
   - > Vaccines, asthma and allergy
   - > Resources for addressing patient/parent concerns about immunisation

3. MMR Decision Aid
   http://www.ncirs.edu.au/immunisation/education/mmr-decision/index.php
4. The Centre for Disease Control (CDC) USA
   http://www.cdc.gov/vaccines/vac-gen/6mishome.htm#Givingachildmultiple

For more information please contact Immunisation Section on (08) 8226 7177 or by emailing Sara.Almond@health.sa.gov.au **www.health.sa.gov.au/pehs/immunisation-index.htm**

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