### Influenza Vaccines



#### FREQUENTLY ASKED QUESTIONS

This fact sheet provides responses to common questions about influenza viruses and seasonal influenza vaccines. More detailed information about influenza viruses and the available influenza vaccines can be found in the NCIRS factsheet Influenza vaccines for Australians: information for vaccination providers.

#### Questions about influenza virus and influenza vaccines

- · Q1. What's the difference between influenza and a common cold?
- · Q2. Is it worth getting the influenza vaccine? I'm a healthy person and have heard that influenza isn't serious.
- · Q3. If the influenza vaccine is recommended for everyone then why can only certain people get it for free?
- Q4. I heard that there's a new type of influenza vaccine that gives you more protection. Should I get this new one or the one that's been around for years?
- · Q5. I'm travelling to the northern hemisphere and its influenza season at my destination. How do I protect myself from influenza while travelling?
- · Q6. Does the influenza vaccine work? I've had the vaccine before and I still got sick that year.

#### Questions about the safety of influenza vaccines

- · Q7. I've heard one of the side effects after having the vaccine is getting sick with influenza. Is that true?
- · Q8. I've heard influenza vaccine causes seizures or convulsions in young children. Is that true?
- · Q9. What is being done in Australia to make sure vaccines are safe to give to the public?
- · Q10. I've been told to get the influenza vaccine when pregnant to protect me and my baby. Is this safe?
- · Q11. Can I get the influenza vaccine if I have an egg allergy?
- · Q12. Are there any rare side effects that have been associated with the influenza vaccine?

#### Questions about influenza virus and influenza vaccines

### Q1. What's the difference between influenza and the common cold?

Influenza is a respiratory illness that occurs following an infection with influenza viruses. Influenza is often referred to as 'the flu'. Sometimes the term 'the flu' is used incorrectly to describe the common cold, other respiratory viruses, or even gastrointestinal illnesses. This is because their symptoms can be similar to those caused by influenza. There are many different viruses and some bacteria that can cause these symptoms. The influenza vaccine will only protect you from the influenza virus.

The following table compares symptoms from the common cold and influenza and shows on average how frequently the symptoms affect people. Usually influenza is severe and lasts longer than cold or other viral respiratory illnesses.

Cold	Symptom	Influenza
8	Fever	888
8	Headache	888
88	General aches and pains	888
88	Tired and weak	888
8	Extreme fatigue	888
888	Runny, stuffy nose	88
888	Sneezing	88
888	Sore throat	888
88	Chest discomfort, coughing	888

rarely = 8; sometimes = 88; often = 88

#### References

Immunize Canada, 2010. Is it a cold or influenza? FactSheet.http://immunize.ca/uploads/posters/flu2010/isitacold\_2010\_e.pdf. Table adapted from Immunize Canada

Eccles R. Understanding the symptoms of the common cold and influenza. *The Lancet infectious diseases* 2005;5:718-25.

Nichol KL, Lind A, Margolis KL, et al. The effectiveness of vaccination against influenza in healthy, working adults. *New England Journal of Medicine* 1995;333:889-93.

# Q2. Is it worth getting the influenza vaccine? I'm a healthy person and have heard that influenza isn't serious.

Most Australians who get influenza are quite sick for a few days with fever, aches and pains, and sore throat, and then recover without lasting effects (*see* O1). However, influenza can be very serious in some people, causing hospitalisation or even death. Each year approximately 85 deaths and 4000 hospitalisations due to influenza are reported. These figures are an underestimate as many cases don't get identified and the true impact of influenza is much greater.

Even if a person does not get severely ill from influenza, it's still a big inconvenience to their lives. For example, influenza can cause people to miss time from school, daycare or work either because they are too sick to attend or have to take time off to care for a sick child. They may need to buy medications, visit the doctor or even the hospital. One study has shown that parents of children younger than 3 years of age missed an average of 3 days of work to stay home and care for their sick child. The estimated cost to the Australian healthcare system for GP visits and hospitalisations was \$115 million per year for each year between April 2000 and March 2006.

In addition to protecting the person who is vaccinated from influenza, getting the influenza vaccine each year also protects people around them. If you don't catch influenza then you cannot spread the infection. It is particularly important to protect vulnerable groups who cannot receive the vaccine themselves like young babies less than 6 months old or those who have low immunity.

Think of the influenza vaccine as a seatbelt. When used properly, a seatbelt reduces the likelihood that you'd be injured in a car accident. Seatbelts aren't perfect, however, and they won't prevent all injuries. No seatbelt in the world will save your life if the crash is severe enough but seatbelts reduce serious crash-related injuries and deaths. Like a seatbelt, the influenza vaccine isn't perfect because the flu type that is circulating needs to match the one chosen to be in the vaccine for that year however, it will reduce your chances of getting influenza, experiencing complications and potentially dying.

#### References

Heikkinen T, Silvennoinen H, Peltola V, et al. Burden of influenza in children in the community. *Journal of Infectious Diseases* 2004;190:1369-73.

Mertz D, Kim TH, Johnstone J, et al. Populations at risk for severe or complicated influenza illness: systematic review and meta-analysis. 2013.

Naidu L, Chiu C, Habig A, et al. Vaccine preventable diseases and vaccination coverage in Aboriginal and Torres Strait Islander people, Australia 2006-2010. *Communicable diseases intelligence quarterly report* 2012;37:S1-95.

Newall AT, Scuffham PA. Influenza-related disease: the cost to the Australian healthcare system. *Vaccine* 2008;26:6818-23.

Rasmussen SA, Jamieson DJ, Uyeki TM. Effects of influenza on pregnant women and infants. *American Journal of Obstetrics and Gynecology* 2012;207:S3-S8.

# Q3. If the influenza vaccine is recommended for everyone then why can only certain people get it for free?

The influenza vaccine is available free of charge via the Government funded Australian National Immunisation Program (NIP) for certain groups of people who are at greatest risk of severe influenza. These groups of people who are more likely to get severely ill from influenza than the general population, such as the elderly, Aboriginal and Torres Strait Islander Australians, pregnant women and people with certain underlying medical conditions.

Since 2005, decisions on what vaccines are provided for free, and for whom, are made following a process that involves the Pharmaceutical Benefits Advisory Committee which ensures any government spending on a health intervention is cost-effective. This is important as there is a limited amount of money that is available

for healthcare in Australia and these funds need to be used to bring about the greatest benefit for the population.

However, individuals who are not eligible for influenza vaccine on the NIP will still benefit from vaccination. (*see* Q2) The Australian Immunisation Handbook, the national clinical guideline advising on the safest and most effective use of vaccines in Australia recommends the influenza vaccine from 6 months of age. Influenza vaccines can be purchased for around \$10-20 each.

#### References

Australian Technical Advisory Group on Immunisation (ATAGI). *The Australian immunisation handbook*. 10th ed (2015 update). Canberra: Australian Government Department of Health; 2015.

Australian Government Department of Health, Immunise Australia Program. Influenza (flu). 2016. Available from: www.health.gov.au/internet/immunise/publishing.nsf/Content/immunise-influenza (Accessed March 2016).

Nolan TM. The Australian model of immunization advice and vaccine funding. *Vaccine* 2010;28:A76-A83.

# Q4. I heard that there's a new type of influenza vaccine that gives you greater protection? Should I get this one or the one that's been around for years?

Two types of influenza vaccine are now available in Australia. Trivalent influenza vaccines (TIVs), (the type that has been around for many years), that protect against three influenza virus strains and the newer quadrivalent influenza vaccines, (QIVs), that protect against four strains. These vaccines are made the same way, however, the influenza strains included in the seasonal influenza vaccine change from year to year to match that season's circulating strains. The only difference between them is that the OIVs contain the same three influenza viruses in the TIV plus one additional influenza strain (an influenza type B strain). That means if that extra influenza B virus is circulating during the influenza season, people who receive the QIV will be better protected against it than people who received TIV. However, if any of the other 3 influenza A or B virus strains are circulating, people who received either TIV or QIV will have the same level of protection.

People who are eligible to receive free influenza vaccine via the NIP (see Q3) will be provided with a QIV. On the private market both QIV and TIV are available, and which vaccine a person chooses may depend on a number of factors such as availability or cost (as QIV is on average a few dollars more expensive than TIV). If both vaccine types are available, QIV is preferred over TIV because it has the potential to protect against one more influenza virus strain. However, if QIV is not available or its cost is a barrier, the TIVs will still offer you protection against three influenza viruses and is much better than getting no vaccine at all.

There are a number of different brands of both QIV and TIV that are each registered for use in different age groups, so it is important to check a person receives the most appropriate brand for their age.

#### References

Barr IG, Jelley LL. The coming era of quadrivalent human influenza vaccines. *Drugs* 2012;72:2177-85.

Domachowske JB, Pankow-Culot H, Bautista M, et al. A randomized trial of candidate inactivated quadrivalent influenza vaccine versus trivalent influenza vaccines in children aged 3–17 years. *Journal of Infectious Diseases* 2013:jit091.

Greenberg DP, Robertson CA, Landolfi VA, et al. Safety and immunogenicity of an inactivated quadrivalent influenza vaccine in children 6 months through 8 years of age. *The Pediatric infectious disease journal* 2014;33:630-6.

Kieninger D, Sheldon E, Lin W-Y, et al. Immunogenicity, reactogenicity and safety of an inactivated quadrivalent influenza vaccine candidate versus inactivated trivalent influenza vaccine: a phase III, randomized trial in adults aged≥ 18 years. BMC Infectious Diseases 2013; 13:1.

# Q5. I'm travelling to the northern hemisphere and its influenza season at my destination. How do I protect myself from influenza while travelling?

Depending on the time of year and destination, travellers may be exposed to the influenza virus at any time throughout the year. The influenza season is mostly during the months of April to September while in the Northern hemisphere, influenza activity occurs during October to April. Influenza activity has been reported throughout the year in the tropics.

Travellers may be exposed to the influenza virus while travelling regardless of their destination. Travelers in large tourist groups, especially those including older people and/or those at greatest risk of complications from influenza (see Q3), and/or those who are likely to be in confined circumstances for days to weeks such as on cruise ship, are at particular risk of influenza, either acquired before departure or from travel to areas of the world where influenza is currently circulating.

Everyone who wants to be protected from influenza should get a flu vaccine during the spring prior to the start of the season according to their age and risk. There is no additional advice for those travelling.

#### References

Camps M, Vilella A, Marcos M, et al. Incidence of respiratory viruses among travelers with a febrile syndrome returning from tropical and subtropical areas. *Journal of Medical Virology* 2008;80:711-5.

Marti F, Steffen R, Mutsch M. Influenza vaccine: a travelers' vaccine? *Expert review of vaccines* 2008;7:679-87.

Steffen R. Influenza in travelers: epidemiology, risk, prevention, and control issues. *Current Infectious Disease Reports* 2010;12:181-5.

### Q6. Does the influenza vaccine work? I've had the vaccine before and I still got sick that year.

There have been many research studies that have shown the effectiveness of the influenza vaccine. It takes two weeks for the vaccine to become effective and for immunity to develop after vaccination. However, how well the influenza vaccine works can vary between different people and in different years, as it depends on a number of factors.

For example, the age and health status of the person receiving the influenza vaccine can impact how effective it is. Influenza vaccination can prevent illness in about 60% of healthy adults under the age of 65. A growing amount of evidence suggests similar levels of protection in young children. However, people with an underlying medical condition, such as low immunity or who are elderly, do not respond as well to the influenza vaccine as healthy adults and so the level of protection they get from the vaccine can be less. In adults who are over the age of 65 the influenza vaccine is estimated to prevent illness in about 43% of those vaccinated and in nursing homes the vaccine prevents most people from hospitalisation due to influenza or pneumonia. Even though the level of protection from the vaccine varies

from year to year, it is still important that the elderly are vaccinated because they are at a higher risk of severe influenza so any protection is better than none.

Because the vaccine is not 100% effective, it means a small proportion of people may catch the virus after getting the vaccine. However, in many instances, people may think they have caught influenza after being vaccinated but that is not the case. For example, often people catch influenza before getting the influenza vaccine but their symptoms don't appear until shortly after being vaccinated, making them think the vaccine didn't work, or even (mistakenly) that the vaccine made them sick (see Q6).

Similarly, a person who is vaccinated against influenza may catch a different virus that is mistaken for the influenza (*see Q1*). For instance, respiratory syncytial virus (RSV) is a virus that causes symptoms similar to influenza, spreads in the community at the same time influenza does, and can cause severe illness and complications just like influenza.

#### References

Blyth CC, Jacoby P, Effler PV, et al. Effectiveness of trivalent flu vaccine in healthy young children. *Pediatrics* 2014;133:e1218-e25.

Jefferson T, Di Pietrantonj C, Al-Ansary L, et al. Vaccines for preventing influenza in the elderly (Review). *Cochrane Database Syst Rev* 2010;2.Osterholm MT,

Kelley NS, Sommer A, Belongia EA. Efficacy and effectiveness of influenza vaccines: a systematic review and meta-analysis. *The Lancet infectious diseases* 2012;12:36-44.Plotkin SA. Correlates of vaccine-induced immunity. *Clinical Infectious Diseases* 2008;47:401-9

Zambon M, Stockton J, Clewley J, Fleming D. Contribution of influenza and respiratory syncytial virus to community cases of influenza-like illness: an observational study. *The Lancet* 2001;358:1410-6.

#### **Questions about vaccine safety**

# Q7. I've heard one of the side effects after having the vaccine is getting sick with influenza. Is that true?

It is not possible for the influenza vaccine to give you influenza. This is because all influenza vaccines in use in Australia are 'inactivated' which means the vaccine is only made with the outside 'shell' of the influenza virus, and it is not alive or functioning like a whole virus. Think of it as like the outside shell of a car without the motor – it looks like a car but doesn't actually run.

Sometimes the normal responses the body has to getting the vaccine (side-effects) is similar to the early signs of influenza which can make people think they have gotten influenza from the vaccine. For example, the expected side effects of the vaccine are swelling, redness and pain at the injection site but also fever, tiredness and muscle aches which also occur when you get influenza ( $see\ Q1$ ). However, these side effects are a sign that the vaccine is triggering an immune response, which is what it is designed to do. The symptoms can start within a few hours of being vaccinated and sometimes last 1-2 days but then go away on their own once your body has successfully made an immune response to the vaccine which will protect you from influenza virus.

#### References

Gross PA, Ennis FA, Gaerlan PF, et al. A controlled double-blind comparison of reactogenicity, immunogenicity, and protective efficacy of whole-virus and split-product influenza vaccines in children. *Journal of Infectious Diseases* 1977;136:623-32.

Nichol KL, Margolis KL, Lind A, et al. Side effects associated with influenza vaccination in healthy working adults: a randomized, placebo-controlled trial. *Archives of Internal Medicine* 1996;156:1546-50.

# Q8. I've heard influenza vaccine causes seizures or convulsions in young children. Is that true?

Seizures in young children, also called convulsions, can be triggered by fever of any cause and are known as febrile (fever) seizures. Fever as a result of being ill with influenza can be a cause of febrile seizures. Febrile seizures related to influenza vaccination are uncommon and occur in less than 1 in every 1,000 children who receive the vaccine. The seizures themselves usually last around one or two minutes and loss of consciousness is possible. Nearly all children who have a febrile seizure, independent of the cause, will recover quickly without any ongoing effects or permanent neurological (brain) damage.

In Australia in 2010, higher than expected numbers of fever and febrile convulsions following influenza vaccination were detected in children aged less than 5 years, particularly children aged less than 3 years. Upon investigation, the reports were linked to only one manufacturer's influenza vaccine (Seqirus [previously bioCSL] Fluvax and Fluvax Junior). The use of this vaccine in Australia was suspended while further investigations by Therapeutic Goods Administration (TGA) were undertaken. The investigations revealed that it was likely due to the manufacturing process used by BioCSL that particular season that caused the issue. This vaccine is no longer registered by the TGA for use in children <5 years and the Australian Technical Advisory Group on Immunisation (ATAGI) recommends the use of alternative influenza vaccine brands in children up to 9 years. The vaccine manufacturer has added 'warning labels' to the vaccine box and for vaccine refrigerators as a safety precaution to ensure it isn't inadvertently administered.

Enhanced safety monitoring systems for influenza vaccines introduced in recent years, such as *AusVaxSafety*, have confirmed that influenza vaccine is safe in children <5 years of age, with low rates of fever and medical attendance reported after vaccination.

#### References

Armstrong P, Dowse G, Effler P, et al. Epidemiological study of severe febrile reactions in young children in Western Australia caused by a 2010 trivalent inactivated influenza vaccine. *BMJ open* 2011;1:e000016.

Pillsbury A, Cashman P, Leeb A, et al. Real-time safety surveillance of seasonal influenza vaccines in children, Australia, 2015. Euro surveillance: bulletin Europeen sur les maladies transmissibles= European communicable disease bulletin 2015;20.

Executive-PMA T. *Investigation into febrile reactions* in young children following 2010 seasonal trivalent influenza vaccination. 2010.

### Q9. What systems are in place in Australia to ensure vaccines are safe to give to the public?

Reviewing and monitoring the safety of vaccines is included at all stages of the vaccine development process, from initial lab based research, vaccine registration with authorities for use, recommendations on their use and then ongoing surveillance once used in the population.

The TGA is responsible for registering vaccines for use in Australia by evaluating them to ensure safety and efficacy using the most up to date research and testing information available. Once registered and in use, the TGA continues to monitor the safety and effectiveness of vaccines through a national monitoring system that includes reports of adverse events from health authorities, immunisation providers, doctors, consumers, and vaccine manufacturers. If the TGA receives information that there are safety concerns with a vaccine, it is investigated immediately. TGA seeks vaccine safety advice from independent experts who make up the Advisory Committee on the Safety of Vaccines (ACSOV) as part of the investigation.

Another important body is the Australian Technical Advisory Group on Immunisation (ATAGI). This group advises the government on existing, new and emerging vaccines in relation to their effectiveness and use in Australian populations. The group produces The Australian Immunisation Handbook, the national clinical guideline advising on the safest and most effective use of vaccines in Australia. The ATAGI and ACSOV work together with other bodies on matters relating to the implementation of immunisation policies, procedures and vaccine safety.

#### References

Immunise Australia Program – Australian Technical Advisory Group on Immunisation www.immunise.health.gov.au/internet/immunise/publishing.nsf/Content/atagi (accessed Apr. 2016)

Immunise Australia Program – Safety of Vaccines. www.immunise.health.gov.au/internet/immunise/publishing.nsf/Content/safety-of-vaccines (accessed Apr. 2016).

Therapeutic Goods Administration (TGA) - Advisory Committee on the Safety of Vaccines (ACSOV) www.tga.gov.au/committee/advisory-committee-safety-vaccines-acsov (accessed Apr. 2016)

# Q10. I've been told to get the flu shot when pregnant to protect me and my baby once it is born. Is this safe?

Influenza can cause severe disease in pregnant women and young babies. Getting sick with influenza while pregnant can lead to complications such as premature delivery and even neonatal and perinatal death. Young children, especially those less than 6 months old, are more likely to be hospitalised or die from influenza than older children.

Influenza vaccine is safe and recommended with every pregnancy to protect the mother and her unborn child against complications from influenza. Babies born to women vaccinated against influenza while pregnant are less likely to be born prematurely or have a low birth weight.

Influenza vaccination during pregnancy prevents influenza hospitalisations in 9 out of 10 babies before they reach 6 months of age – the age when they can start to receive the vaccine themselves. This is due to the transfer of protective antibodies from the pregnant woman to the baby.

Expected adverse events after vaccination, like injection site reactions, do not occur any more frequently in pregnant women compared with non-pregnant women.

#### References

Benowitz I, Esposito DB, Gracey KD, Shapiro ED, Vázquez M. Influenza vaccine given to pregnant women reduces hospitalization due to influenza in their infants. *Clinical Infectious Diseases* 2010;51:1355-61.

Fell DB, Dodds L, MacDonald NE, Allen VM, McNeil S. Influenza vaccination and fetal and neonatal outcomes. *Expert review of vaccines* 2013;12:1417-30.

Legge A, Dodds L, MacDonald NE, Scott J, McNeil S. Rates and determinants of seasonal influenza vaccination in pregnancy and association with neonatal outcomes. *Canadian Medical Association Journal* 2014:186:E157-E64.

Rasmussen SA, Jamieson DJ, Bresee JS. Pandemic influenza and pregnant women. *Emerging Infectious Diseases* 2008;14:95-100.

Zaman K, Roy E, Arifeen SE, et al. Effectiveness of maternal influenza immunization in mothers and infants. *New England Journal of Medicine* 2008;359:1555-64.

## Q11. Can I get the flu shot if I have an egg allergy?

Reactions such as hives, angioedema (a skin reaction with swelling similar to hives), or anaphylaxis (severe allergic reaction) are overall, rare side effects following vaccination for influenza. They can be due to an allergic response to something in the vaccines, such as egg protein.

Although influenza vaccines in Australia are grown in eggs, due to new vaccine manufacturing methods, the amount of material from the egg in the influenza

vaccine is small (usually less than 1 microgram of egg protein per dose) Recent studies have shown that people with egg allergy, including egg-induced anaphylaxis, have safely received the influenza vaccine. Even though the risk of anaphylaxis or an adverse event is very low, persons with this type of allergy should be vaccinated by healthcare providers experienced in recognising and treating anaphylaxis.

The Australasian Society of Clinical Immunology and Allergy (ASCIA) guidelines should be referred to for additional information on influenza vaccination of individuals with an allergy to eggs, including risk, dosage and observation period.

#### References

Australasian Society of Clinical Immunology and Allergy (ASCIA). *Guidelines for medical practitioners: Influenza vaccination of the egg-allergic individual.* September 2010. Available from: www.allergy.org.au/health-professionals/papers/influenza-vaccination-of-the-egg-allergic-individual (Accessed Apr.2016).

Des Roches A, Paradis L, Gagnon R, et al. Egg-allergic patients can be safely vaccinated against influenza. *Journal of Allergy and Clinical Immunology* 2012; 130:1213-6 e1.

Greenhawt MJ, Li JT, Bernstein DI, et al. Administering influenza vaccine to egg allergic recipients: a focused practice parameter update. *Annals* of Allergy, Asthma & Immunology 2011;106:11-6.

### Q12. Are there any rare side effects that have been associated with the influenza vaccine?

Guillain-Barré syndrome (GBS) is a rare disorder that involves the immune system by damaging nerve cells, causing muscle weakness and sometimes paralysis. The symptoms usually last for a few weeks followed by a full recovery. In very rare cases people have died of GBS. The risk of the syndrome increases with age and is greatest for those aged 50 years or older. Diagnosis of GBS is complex and must be made by a doctor.

A small increased risk of GBS was found in people that had a specific influenza vaccine in the United States in 1976. Since then, close monitoring has shown that GBS has occurred at a very low rate of less than 1 in 1 million doses of influenza vaccine. Studies suggest that a person is more likely to get GBS from infection with the influenza virus rather than from the influenza vaccine.

Someone who has a history of GBS has an increased likelihood in general of developing GBS again, and the chance of them coincidentally developing the syndrome following influenza vaccination may be higher than in persons with no history of GBS.

#### References

Burwen DR, Ball R, Bryan WW, et al. Evaluation of Guillain-Barré syndrome among recipients of influenza vaccine in 2000 and 2001. *American Journal of Preventive Medicine* 2010;39:296-304.

Haber P, Sejvar J, Mikaeloff Y, DeStefano F. Vaccines and guillain-barre syndrome. *Drug Safety* 2009;32:309-23.

Kwong JC, Vasa PP, Campitelli MA, et al. Risk of Guillain-Barré syndrome after seasonal influenza vaccination and influenza health-care encounters: a self-controlled study. *The Lancet infectious diseases* 2013;13:769-76.

Nelson KE. Invited Commentary: Influenza Vaccine and Guillain-Barré Syndrome—Is There a Risk? *American Journal of Epidemiology* 2012;175:1129-32.

#### For more information:

- National Centre for Immunisation Research and Surveillance (NCIRS) FactSheet
   <a href="http://www.ncirs.edu.au/assets/provider-resources/fact-sheets/influenza-fact-sheet.pdf">http://www.ncirs.edu.au/assets/provider-resources/fact-sheets/influenza-fact-sheet.pdf</a>
- Australian Technical Advisory Group on Immunisation (ATAGI) advice for immunisation providers regarding the
  administration of seasonal influenza vaccines in 2016
   www.immunise.health.gov.au/internet/immunise/publishing.nsf/Content/ATAGI-advice-influenza-vaccines-providers
- · Consumer advice for individuals and families on the influenza vaccines available in 2016 from the Australian Technical Advisory Group on Immunisation (ATAGI) <a href="https://www.immunise.health.gov.au/internet/immunise/publishing.nsf/Content/atagi-information-influenza-public">www.immunise.health.gov.au/internet/immunise/publishing.nsf/Content/atagi-information-influenza-public</a>
- · Immunise Australia website www.immunise.health.gov.au
- $\cdot \ National \ Immunisation \ Program \ schedule \\ \underline{www.immunise.health.gov.au/internet/immunise/publishing.nsf/Content/national-immunisation-program-schedule}$