



# Cocoon strategy in action across Australia.

## Preventing adult-to-child transmission of pertussis

Pertussis, or whooping cough, is a highly contagious, acute respiratory infection caused by the bacteria *Bordetella pertussis*. Pertussis is on the rise in Australia, with most cases now diagnosed in adolescents and adults where the disease is commonly atypical. Several recent studies indicate that adults—mothers in particular—are a frequent source of pertussis infection to unvaccinated or incompletely vaccinated infants. Pertussis infection in newborns can be severe, resulting in prolonged hospital admission, extensive multi-system disease, brain damage and even death.

Vaccinating all persons in close contact with the newborn to prevent adult-to-child transmission of pertussis, known as the 'cocoon strategy' reduces the risk of transmission. This approach is recommended by the National Health and Medical Research Council (NHMRC). The Global Pertussis Initiative (GPI), which consists of 37 experts in the field of pertussis from 17 countries, also recommends the implementation of the cocoon strategy.

**According to Professor Kevin Forsyth (Steering Committee member of the GPI), "with education, parents and families of neonates, as well as childcare workers may accept the rationale for adult pertussis vaccination more quickly than the general population. Regarding healthcare workers, there is a moral imperative to protect themselves and hence those in their care."**

This document identifies a number of local best practice initiatives promoting the cocoon strategy in general practice, hospitals and local councils.





# Seeking every opportunity to vaccinate adults in general practice drives dTpa uptake

## Targeting women planning a pregnancy and parents with young children

GPs are at the forefront of education about the prevention of pertussis infection and are in a unique position to screen every patient who walks through the surgery doors as potential candidates for vaccination.

Dr Greg Rowles, a general practitioner in country Victoria, has implemented a system of offering opportunistic vaccination for pertussis in his practice.

“With every consultation, there is the opportunity to review a patient’s vaccination status, and consider their susceptibility to vaccine preventable diseases. This may often involve discussion of the dangers of pertussis and the benefits of the dTpa vaccine with patients,” said Dr Rowles.

Good immunisation coverage in children means that adults are now the most frequent source of pertussis infection. In 2006, adults over 20 years of age accounted for 90 percent of the 11,000 pertussis notifications,<sup>1</sup> so encouraging acceptance of vaccination with all adults is essential.

**“Recently married couples, parents with young children and people over 50 are the key targets,” he added.**

The practice has found that mothers are often interested in receiving the pertussis booster when the risks of them passing the infection on to their unprotected infants are

explained. The cost of the vaccine for this group is often not an issue; however, uptake among people older than age 50 is much lower. The expense of a non-subsidised vaccine (dTpa) vs free ADT (funded free at age 50 in Victoria) can be a barrier, especially for those on a pension or healthcare card.

According to Dr Rowles, “establishing a good relationship with our local pharmacist has helped to keep the vaccine as affordable as possible through bulk purchasing.”

“Older adults and grandparents generally appreciate that they play an important role in caring for their grandchildren, and are often motivated to receive the once-only pertussis booster injection to lessen the risk of them being the source of this highly infectious disease,” he said.

## Vaccinating new mothers at post-natal visits

During the first couple of months after the birth of an infant, mothers are in frequent contact with the health care system. This provides practitioners with ideal opportunities to educate parents about adult pertussis.

According to Dr Craven at the Capalaba Medical Centre in Queensland, “the six week post-natal check-up or when the newborn is scheduled for their immunisations at two months of age are important opportunities to educate new mothers about how they can safeguard their babies against pertussis through adult booster vaccination. Local private obstetricians and paediatricians are also spreading the word, so we are seeing more and more referrals from them.”

**“Although we don’t often see women in the pre-pregnancy planning stages, if a patient comes in to have their rubella levels checked, this is a flag for us to offer her a pertussis booster,” he said.**

In one Australian study, mothers were found to be the primary source of whooping cough infection in hospitalised infants, accounting for 42 percent of cases.<sup>2</sup> “These statistics really strike a chord with our patients and reinforce the need to vaccinate this group. They are surprised that they could be the one putting their baby at risk,” said Dr Craven.

“Encouraging mothers to receive the vaccine at these scheduled visits is critical to driving vaccination coverage by leveraging need with convenience, as mothers are unlikely to return for a separate appointment at a later date,” he added.

## GP practice: a multitude of opportunities to boost pertussis levels

Dr Brian Morton at the Willoughby Medical Practice in Sydney said that, “a new baby, mention of a holiday or a patient who presents with a tetanus-prone injury are all situations where there is the opportunity to vaccinate with dTpa in place of just tetanus (and diphtheria).”

Dr Morton has seen first hand a number of adult pertussis cases, which reinforces the need to boost this group. “Pertussis should be explored in the differential diagnosis of a chronic cough,” he said.



"We advise mums, grandparents and adults planning a holiday to consider vaccination against diphtheria, tetanus and pertussis when updating their immunisation status," says Dr Morton. **"It just comes down to remembering to offer it. Set up a prompt as it can be easily forgotten when the opportunity arises," he said.**

Practice Nurses are also important in educating mums about the need for a pertussis booster as they administer most children's vaccines and therefore have a lot of contact with the mums. "New mums in particular and grandparents want to be proactive," he commented.

### **Travellers: a way to help stop pertussis in its tracks**

According to Dr John McDade, Medical Director of TMVC Brisbane, "the incidence of pertussis in adults is much higher than tetanus. We see people seeking vaccination prior to overseas travel as ideal candidates for dTpa, which helps to improve vaccination coverage in the community and boost herd immunity. Respiratory illnesses such as pertussis can be easily picked up abroad too."

**"We find that alerting patients of the potential benefits of having a pertussis booster, then giving them the choice of ADT or dTpa is the best way to go. They can then make an informed decision," he said.**

They've had a positive response from young adults, as most would expect to have a family in the not too distant future. "We now use five times more dTpa than ADT," said Dr McDade.

### **Councils cocooning the community**

Achieving optimal vaccination coverage within the region requires the commitment of the broader community. Brisbane City Council has taken a novel approach to improving vaccination coverage by vaccinating mothers against pertussis at infant immunisation clinics.

During 2005-2006, there was a 200 percent increase in the incidence of pertussis in Queensland with almost 4,000 cases reported.<sup>1</sup>

Brisbane City Council Chair for Families and Community Services Geraldine Knapp said the program was a community service that aimed to reach parents who may not otherwise have had access to the whooping cough booster. "Through this service we want to reduce cases of whooping cough in infants," Cr Knapp said.

The council operates fifteen infant immunisation clinics across Brisbane in convenient locations for people. These infant clinics are conducted at community centres, libraries, church and community halls. Meeting rooms at Brisbane City Council libraries located in shopping centres have been extremely successful in the delivery of this initiative.

**Cr Knapp said that "the infant clinics also offer adult booster vaccination for whooping cough to mums, dads, grandparents and any adults coming into close contact with infants."**

"We find that an infant immunisation clinic is a great setting for educating mums on the adult whooping cough booster because they are already a captive audience committed to protecting and creating a safe environment for their newborns. Although the clinics are busy, it doesn't take much time to offer and administer the booster," she said.

Effective promotion of the service has been essential to driving people to the clinics, and this has been achieved using targeted marketing strategies including posters and leaflets in hospitals, Pregnancy and Baby Expo, and community events, combined with broader advertising in local community newspapers.

### **Council kindy clinics a winner in South Australia**

Port Adelaide Enfield Council has a strong focus on opportunistic vaccination. Initially the council started kindy and childcare clinics to increase uptake in four year olds, then realised it had a captive audience of parents, teachers and childcare workers. It now offers the adult pertussis booster at the same time as it gives the boosters to the 4 year olds.

**"For teachers and childcare workers there is the issue of duty of care and preventing passing on pertussis to their own baby (or planned baby) as many workers in these fields are young women," said Karyn Fromene, Immunisation Coordinator.**

Vaccination takes place on-site, freeing parents (teachers and childcare workers) of the need to go out of their way to get vaccinated. The clinics run from 11:30-1pm, when the parents come to collect their child after a half day of kindy. According to Karyn, "this works well for a number of reasons. Parents can sign the consent form at the time of vaccination plus the parent can also bring in the child's immunisation book for updating."

The program has been highly successful with requests from child care centres that the clinic return the following year. The council also plans to extend its efforts to include other adults, including its own volunteers working for the council as well as those clients who are vaccinated at workplace flu clinics. The workplace program also caters to the target group of new parents.





## Blocking the spread of pertussis among people in high risk occupations

In addition to women planning a pregnancy, new parents and other adult household members coming into close contact with infants, the NHMRC recommends that people in high risk occupations, such as health and childcare workers, receive the adult booster for pertussis.<sup>3</sup>

The Kallangur Clinic in Brisbane has taken a proactive approach to preventing transmission of pertussis to/from health care workers. The clinic offers adult pertussis boosters to all new staff from GPs and nurses right through to receptionists.

"We have a very positive and proactive culture in the surgery," said Dr Ian Baker. **"All our staff are made aware of the dangers of pertussis infection and are genuinely enthusiastic about protecting themselves and their patients from this highly infectious disease."**

They are aware of the risks to staff due to their close contact with patients. "Kids come in and cough all over you. Our staff who are mostly 30-60 years of age are a reservoir of infection, so we don't want them passing it on to patients either," he said.

## Pertussis vaccination in a hospital setting

At the Royal Perth Hospital (RPH) in Western Australia, all new starters are offered a pertussis booster in line with the NHMRC recommendation. Berri Morrison, Occupational Health Co-ordinator at RPH, took an innovative approach to promoting the vaccination clinic with a bridge display. "The walkway above Wellington St which joins the two buildings has a lot of traffic from the hospital. We felt this was an ideal place to highlight the pertussis vaccination clinic to our workers," she said. Word of mouth was also found to be very powerful in generating awareness of the pertussis booster.

**"We need to take every opportunity that comes before us to offer dTpa,"** said Berrie. If a Healthcare worker presents with a tetanus prone wound, the RPH offers the pertussis booster (dTpa) in place of ADT.

## Tips for a successful pertussis vaccination program:

- Educate the community on the dangers of pertussis and the ease at which protection can be achieved
- Avoid repeat visits and encourage on-the-spot vaccination where possible
- Establish reminders for all practice staff involved and see every consultation as an opportunity to vaccinate
- Make vaccination easily and broadly accessible to the local community



Do you have an innovative or interesting example of how you have implemented the cocoon strategy? If so, please share this with us by emailing [adacel@sanofipasteur.com](mailto:adacel@sanofipasteur.com)

# ADACEL®

Pertussis Vaccine Acellular Combined with Diphtheria and Tetanus Toxoids (adsorbed)

## sanofi pasteur

The vaccines division of sanofi-aventis Group

sanofi pasteur. Locked Bag 2227 North Ryde Business Centre NSW 1670  
Customer Service Enquiries 1800 829 468  
Sanofi Pasteur Pty Ltd ACN 085 258 797 ABN 79 085 258 797

References: 1. Communicable Disease Network Australia. National Notifiable Diseases Surveillance System. Number of notifications of pertussis in Australia 1991-2006. Accessed on 14th May, 2008 at <http://www9.health.gov.au/cda/Source/CDA-index.cfm>. 2. Pichichero ME, et al. *Expert Rev Vaccines* 2006; 5(2):175-187. 3. Australian Government, Department of Health and Ageing. Australian Immunisation Handbook 9th Edition 2008. Accessed on 14th May, 2008 at [http://www.immunise.health.gov.au/internet/immunise/publishing.nsf/Content/5335A7AB925D3E39CA25742100194409/\\$File/part3.pdf](http://www.immunise.health.gov.au/internet/immunise/publishing.nsf/Content/5335A7AB925D3E39CA25742100194409/$File/part3.pdf).

