



Disease WAtch

the Western Australian Communicable Diseases Bulletin

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From the Director's Desk

Welcome to the first exclusively online edition of *Disease WAtch*. To coincide with our move to an electronic-only format, we've also acquired a more user-friendly web address – www.health.wa.gov.au/diseasewatch – making *Disease WAtch* easier to access than ever. Ensure you and your colleagues stay abreast of the latest communicable disease news by becoming a subscriber and having *Disease WAtch* delivered straight to your inbox.

In this issue:

Just over a decade after invasive pneumococcal disease (IPD) became notifiable in Western Australia, *Disease WAtch* takes a look back at trends in infection over the past 10 years.

Our report highlights the impact our vaccine programs have had on the prevalence of IPD across both Aboriginal and non-Aboriginal communities and how the emergence of serotype replacement disease makes continual monitoring vital to ensuring the ongoing effectiveness of vaccine strategies.

We'll also update you on the current influenza season, give you details on the most recent addition to WA's immunisation schedule and take a look at a new sexual health clinic for men.

Dr Paul Armstrong

Director

Communicable Disease Control Directorate

Vaccine upgrade to widen pneumococcal protection

The WA Department of Health has replaced Prevenar, the current pneumococcal vaccine, with Prevenar 13 on the WA Immunisation schedule.

The change is in line with other jurisdictions around Australia and commenced on 1 July 2011.

Prevenar, provided protection against 7 pneumococcal serotypes. Prevenar 13 protects against an additional 6 pneumococcal serotypes and, like its predecessor, is given at 2, 4 and 6 months of age .

Prevenar 13 is listed on the Pharmaceutical Benefits Scheme and is also on the Australian Childhood Immunisation Register.

Actions required by providers

Healthcare providers should familiarise themselves with information about Prevenar 13, available at

www.racgp.org.au/cmi/wycprevn.pdf

Prevenar 13 orders can be placed via the **WA Department of Health's vaccine ordering mailbox:**

vaccineorders@health.wa.gov.au

New booklet helps parents to talk about sex

A new booklet to help parents educate their children about sexual health has been produced by the WA Department of Health.

Talk soon. Talk often. encourages parents to talk a little but often as a means of promoting positive sexual health and relationships.

The user-friendly booklet was developed in partnership with the Australian Research Centre in Sex, Health and Society following a Department of Health-funded youth consultation in 2007.

The consultation found that although young people looked to their families for advice and education, there was a dearth of parent-friendly resources to support families in this role.

An important role of *Talk soon. Talk often.* is that it forms part of a comprehensive approach to the prevention and control of chlamydia and other sexually transmitted diseases among young people. Other WA Health-funded interventions include the provision of comprehensive school-based sexual health education curriculum support materials, teacher training in sexual health education, social marketing and GP-focused resources to support the testing and treatment of sexually transmitted infections in primary health care settings.

***Talk soon. Talk often.* has been widely distributed to schools throughout Western Australia. Free copies of the booklet can be ordered by contacting Miriam Venosa, at the Sexual Health and Blood-borne Virus Program, by telephone on 9388 4841 or email SHBBVP.GVH@health.wa.gov.au**



Register now for immunisation updates

Immunisation providers can now have immunisation alerts and updates delivered straight to their inboxes.

The Communicable Disease Control Directorate is urging providers to register their details to receive important vaccine updates.

Providers should email their names and email addresses to:

vaccineupdates@health.wa.gov.au Provider details will be kept in accordance with Department of Health protocols and used solely to distribute immunisation advice.

Clinic for men reaching high-risk group

In 2010 the WA AIDS Council was provided funding to set up a community-based sexual health clinic for men who have sex with men.

Funding came from WA Health's Sexual Health and Blood-borne Virus Program which had wanted to establish an outreach service in the Perth metropolitan area to improve access to testing, treatment, counselling, contact tracing, health hardware and health education for sexually-transmitted infections.

As a result the M Clinic (M for 'Men's') was formed. The clinic works in partnership with other clinical providers. It also integrates peer education with social marketing to gay men and men who have sex with men, to highlight messages including:

- the need for HIV/STI testing
- the importance of condom use
- the risks associated with having multiple partners and unprotected sex overseas.

Since July 2010, more than 750 patients have attended the clinic and about 65 per cent returned for follow-up appointments. In the same period, the clinic diagnosed approximately 25 per cent of new HIV-positive cases in men who have sex with men in WA. Anecdotal reports from clinicians indicate high-risk men are attending the clinic.

The M-Clinic, in partnership with the Kirby Institute (formerly the National Centre for Epidemiology and HIV Clinical Research, UNSW), is evaluating the service model. This evaluation will include an online health consumer survey.

The WA Aids Council continues to provide an outreach sauna clinic at Steamworks every Monday night. The Sauna Clinic also offers anonymous testing for clients.

The M Clinic is located at 4/24 McCourt Street, West Leederville. It is a walk-in clinic with appointments required only if clients have symptoms. Medicare cards are needed for pathology requests. For more information call 9380 4922 or go to:

www.waids.com.au/Gay-and-other-Men-who-have-Sex-with-Men/testing-services.html

Update on influenza season

Now is the time to vaccinate your patients against influenza. Influenza immunity takes about 2 weeks to develop after influenza vaccination so it is important to recall patients for their annual shot well before the influenza season peaks, usually mid to late winter.

In 2011, eligibility for federal government-procured seasonal influenza under the National Immunisation Program includes:

- all individuals aged 65 years and over
- all Aboriginal people 15 years and over
- pregnant women
- individuals from the age of 6 months with medical conditions that predispose them to severe influenza (See Table 1).

Table 1 – Medical conditions associated with an increased risk of complications from influenza infection

| Medical condition | Examples |
|---|---|
| Cardiac disease | Cyanotic congenital heart disease Congestive heart failure Coronary artery disease Down syndrome (whether cardiac involvement or not) |
| Chronic respiratory disease | Severe asthma (for which frequent hospitalisation is required) Cystic fibrosis Bronchiectasis Suppurative lung disease COPD |
| Diabetes and other metabolic disorders | Type 1 diabetes Type 2 diabetes Chronic metabolic disorders |
| Renal disease | Chronic renal failure |
| Chronic neurological disease | Hereditary and degenerative CNS diseases (including cerebral palsy) Seizure disorders Spinal cord injuries Neuromuscular disorders |
| Immune impairment | Immunosuppressive therapy due to disease or treatment (including leukaemia, cancer or transplantation) Asplenia or splenic dysfunction HIV infection |
| Haematological disorders | Haemoglobinopathies |
| Long-term aspirin therapy in children between the ages of 6 months and 10 years | These children are at increased risk of Reye syndrome following influenza infection |

Update on influenza season (continued)

In Western Australia, healthy children younger than 5 years of age are also eligible to receive state-procured influenza vaccine.

The Australian Childhood Immunisation Register shows that as of 16 Jun 2011 more than 6,000 doses of influenza vaccine had been administered to children under the age of 5 years in Western Australia.

Based on available data, there appears to be no safety signal for either Vaxigrip or Influvac influenza vaccines in young children in 2011.

So far this year, the WA Vaccine Safety Surveillance system (WAVSS) has recorded 6 potential adverse events following administration of influenza vaccine to children under 5 years of age. Three were reported as having fever less than 40°C; 2 were reported episodes of gastroenteritis; and 1, with a concurrent upper respiratory tract infection, had a febrile convulsion 4 days after vaccination.

Last year, more than 95 per cent of the febrile convulsions in young children that followed vaccination with CSL Biotherapies Fluvax in WA occurred within 12 hours of the vaccine being given.

Though a causal association with vaccination cannot be excluded for the febrile convulsion reported in 2011, the convulsion was likely to have been the result of an intercurrent illness temporally associated with vaccination.

An estimated 13,000 children under the age of 5 years have a medical condition that places them at increased risk of influenza complications. The Australian Technical Advisory Group on Immunisation recommends strongly that these children be immunised.

The group also recommends 2011 Vaxigrip or Influvac seasonal influenza vaccine for children – including those aged 6 months to less than 10 years – whose parents/guardians wish them to be protected against influenza.

More information for providers and consent materials for parents are available in the influenza section of our immunisation website:

www.public.health.wa.gov.au/3/473/2/provider_information__immunisation.pm

In WA, suspected adverse events following vaccination can be reported online at www.wavss.health.wa.gov.au, 24 hours a day, or by telephone (08) 9321 1312, from 8.30am to 4.30pm Monday to Friday.

Invasive pneumococcal disease trends in Western Australia, 2001-2010

Background

Streptococcus pneumoniae causes significant morbidity and mortality worldwide, including invasive (e.g. bacteraemia, pneumonia, meningitis) and non-invasive (e.g. otitis media, sinusitis) disease.

Invasive pneumococcal disease (IPD) has been notifiable in Western Australia (WA) since 2001. Positive diagnoses are reported by pathology laboratories and clinicians to the Department of Health, at which time further information (e.g. vaccination status, clinical presentation and risk factors) is sought by public health staff.

Two pneumococcal vaccines are currently included in the immunisation schedule – the 7-valent pneumococcal conjugate vaccine Prevenar (PCV-7) and the 23-valent polysaccharide vaccine Pneumovax (23-PPV).

PCV-7 contains serotypes: 4, 6B, 9V, 14, 18C, 19F, 23F, while 23-PPV contains the PCV-7 serotypes plus 1, 2, 3, 5, 7F, 8, 9N, 10A, 11A, 12F, 15B, 17F, 19A, 20, 22F and 33F.

PCV-7 was included in the national childhood immunisation schedule (2, 4 and 6 months of age) in late 2001 for Aboriginal children and in 2005 for all children. Aboriginal children also receive a 23-PPV at 18 months of age. 23-PPV has been funded for Aboriginal adults aged 50 years and over since 1999 and for all non-Aboriginal adults 65 years and over since 2005.

The introduction of PCV-7 vaccine programs led to a substantial reduction in IPD rates. This occurred not only among vaccinated children but also among other unvaccinated age groups, as a result of herd immunity. However, it has also resulted in the emergence of IPD caused by non-vaccine serotypes (e.g. 1 and 19A) – ‘serotype replacement’.

Recently 2 new-generation conjugate vaccines were licensed in Australia: a 10-valent vaccine (PCV-10) that contains the PCV-7 serotypes plus serotypes 1, 5, 7F; and a 13-valent vaccine (PCV-13) that contains serotypes 3, 6A, 19A in addition to those in PCV-10 (See article on page 1).

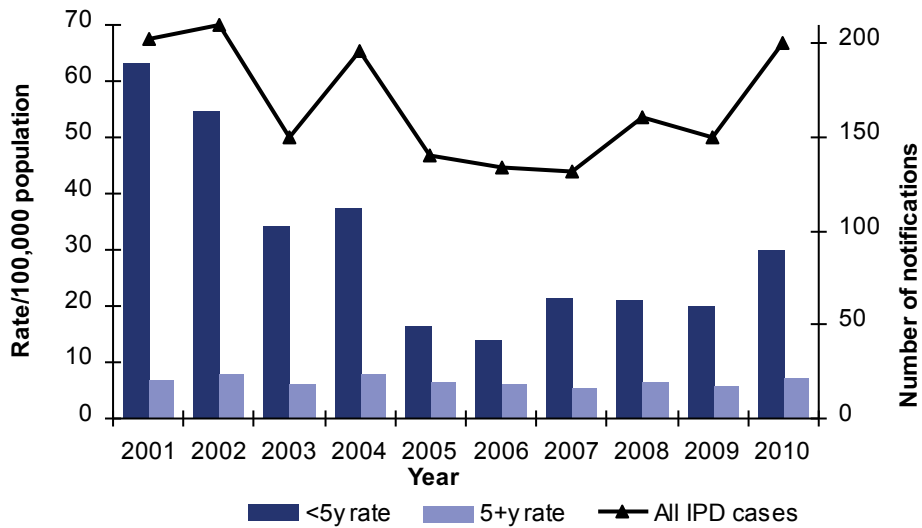
Trends

Following the introduction of the PCV-7 vaccine, the overall number and rate of IPD cases in WA declined from a peak of 210 cases (11 per 100,000 population) in 2002 to a nadir of 132 cases (6 per 100,000) in 2007. Over the following 3 years, the number and rate increased, reaching 200 cases (9 per 100,000) in 2010 (Figure 1).

Among children younger than 5 years, the number and rate of IPD notifications dropped by 78 per cent from 63 per 100,000 population (n=80) in 2001 to 14 per 100,000 (n=18) in 2006. However, from 2007, the rate began increasing again and by 2010 had doubled to 30 per 100,000 (n=46).

There was also a small decline in IPD rates in the age group 5 years and older, from 8 per 100,000 to 5 per 100,000 population between 2004 and 2007, after which the rate rose again to 7 per 100,000 population in 2010 (Figure 1).

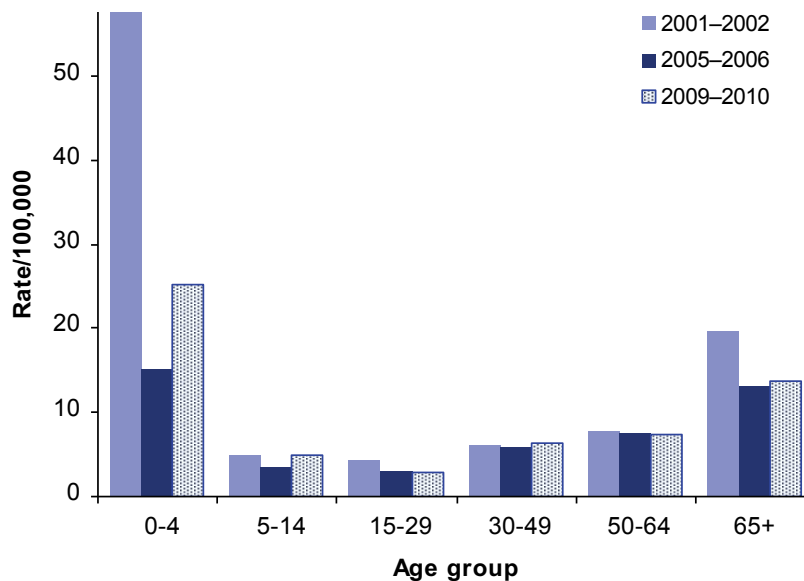
Figure 1 – Total number of IPD notifications and notification rate by age group and year, WA, 2001–2010.



Age distribution

IPD notification rates are highest in children younger than 5 years of age and adults 65 years and over. In both these age groups, IPD notification rates have decreased significantly since the 2001–2002 period, as shown in Figure 2.

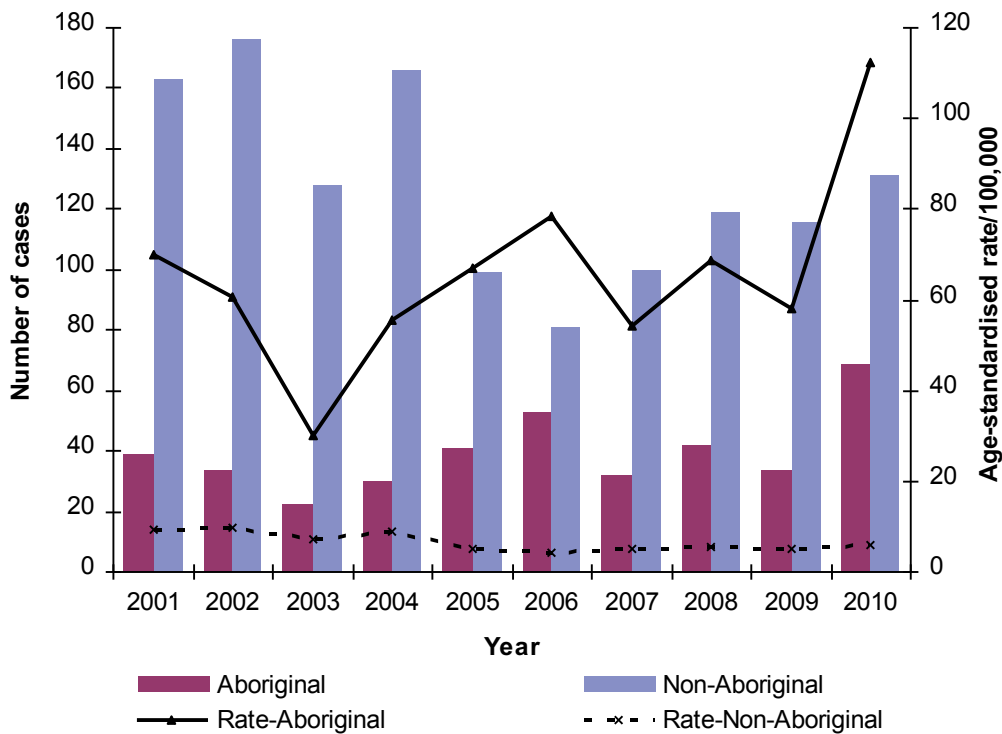
Figure 2 – IPD notification rates by age group and 2-year periods, WA, 2001–2010.



Aboriginal status

Aboriginal people comprise between 15 per cent and 40 per cent of notified cases annually and notification rates are 6 to 14 times higher than in non-Aboriginal Western Australians. Aboriginal IPD rates declined to their lowest level of 30 per 100,000 population (n=22) in 2003, but increased thereafter, reaching a record high of 112 per 100,000 population (n=69) in 2010 (Figure 3).

Figure 3 – IPD notifications and rates by Aboriginal status, WA 2001–2010.



Serotypes and potential coverage by new conjugate vaccines in children younger than 5 years

The distribution of disease-causing serotypes has changed over time. Among children younger than 5 years of age, IPD caused by PCV-7 serotypes decreased dramatically from 65 cases (88 per cent of all cases) in 2001 to just 3 cases (7 per cent of all cases) in 2010. Conversely, the number of cases caused by the non-PCV-7 serotypes increased from 9 to 45 cases over this period.

Of the 45 IPD cases notified in 2010, more than half were caused by serotypes not covered by the PCV-7 vaccine. Six cases were caused by serotype 1, and 17 cases by serotype 19A. Serotype 1 occurred only in the Aboriginal cases and emerged after having been reported just once previously. Serotype 19A occurred almost exclusively among non-Aboriginal cases, and had been increasing in frequency since 2007.

IPD serotype 1 would be covered by both the new PCV-10 and PCV-13 vaccines, while serotype 19A would only be covered by PCV-13. Table 1 shows the potential coverage of IPD strains notified in children younger than 5 years by the 3 conjugate vaccines.

Table 1 – Proportion (%) of IPD covered by vaccine type in children younger than 5 years in 2001 and 2010.

| Vaccine Type | Year | |
|--------------|----------------------|----------------------|
| | 2001 <i>n</i> =74 | 2010 <i>n</i> =45 |
| PCV-7 | 88% | 7% |
| PCV-10 | 89% | 20% |
| PCV-13 | 93% | 67% |

Deaths

Since IPD became notifiable, the annual case fatality rate has fluctuated between 5 per cent and 17 per cent (mean: 9 per cent) with an average of 15 deaths per year. Overall, the greatest proportion of deaths occurs in the 65 years and over age group (26 per cent), followed by those aged 30 to 49 years (19 per cent) and less than 15 years (16 per cent). In 2010, there were 17 deaths, 7 of them children under 15 years of age.

Conclusion

The introduction of the childhood pneumococcal vaccine program resulted in an almost 80 per cent decline in the notification rate of IPD among children younger than 5 years, primarily reflecting the decline in PCV-7 disease serotypes. Additionally, rates decreased in other age groups, principally in those aged 65 years and over, as a result of herd immunity. More recently, there has been an increase in the number of IPD cases caused by non-PCV-7 serotypes and the emergence of serotype replacement disease, particularly due to serotype 19A (especially in non-Aboriginal people) and serotype 1 (especially in Aboriginal people). A substantial proportion of these and other emerging serotypes could potentially be prevented by the new-generation 13-valent pneumococcal vaccine.

It is essential to continue surveillance of IPD in Western Australia to monitor the impact and effectiveness of vaccine programs, particularly with introduction of the new 13-valent conjugate vaccine imminent.

Acknowledgements

The Communicable Disease Control Directorate gratefully acknowledges the contribution of laboratories and healthcare professionals, including public health nurses, to the surveillance of IPD.

Disease Watch is the newsletter of the Communicable Disease Control Directorate.

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