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SPECIAL EDITION

12th National Immunisation Conference

This year, the 12th National Immunisation Conference was held in Adelaide, South Australia. The Public Health Association of Australia Inc (PHAA) provides a forum for the exchange of ideas, knowledge and information on public health. The Association is also involved in advocacy for public health policy, development, research and training. Over 30 NCIRS staff members attended the conference and participated in presentations or poster displays. It was a successful event and well over 500 people from around the country from various health and medical backgrounds attended.

NCIRS Invited Speakers

This year, four NCIRS staff members were invited speakers at the conference - Professor Peter McIntyre, Dr Kristine Macartney, Professor Robert Booy and Dr Julie Leask.

Professor Peter McIntyre, Director of NCIRS, provided a progress report on pertussis.

Dr Kristine Macartney, Deputy Director, Policy Support, provided an update on rotavirus vaccines in Australia.

Professor Robert Booy, Head of Clinical Research at NCIRS, contributed to an engaging presentation on "Influenza vaccines: new and old".

Dr Julie Leask, Social Research Manager, participated in the well attended conference debate: "That we are too soft on the anti-vaccination lobby". Julie won the debate arguing that we should play the ball not the opponent in disease control. On the opposing side was Dr Paul Effler who believed that Australia was indeed "too soft" on the group. The debate was informative and entertaining.

Furthermore, Dr Kristine Macartney and Dr Julie Leask were members and Professor Peter McIntyre was the chair of the conference organising committee.

In addition, Dr Julie Leask, along with Dr Greg Rowles, assisted greatly with the pre-conference seminar day, successfully organised by the ADGP. Dr Jane Jeffs, Brynley Hull, Dr Kristine Macartney and Professor Peter McIntyre were invited speakers to this pre-conference seminar. The topics they presented were:

- What's new since the 9th edition of the Handbook? (Dr Kristine Macartney)
- Coverage data and ACIR - background and current arrangements (Brynley Hull)
- The perfect immunisation encounter (Dr Julie Leask and others)
- Hot topics now and for the future (Professor Peter McIntyre and Dr Jane Jeffs)



12th National Immunisation Conference

Several other NCIRS staff made presentations from the 17th -19th August. They included:

Rotavirus vaccine coverage and the impact of the vaccine on the timeliness of other NIP vaccines recommended at the same age

By Brynley Hull

Long term immunity of birth and one month old acellular pertussis (PA) vaccine

and

Ten year clinic experience of adverse events following immunisation at The Children's Hospital, at Westmead

and

Does substance use influence the long term immunity to hepatitis B?

By Dr Nick Wood

Impact of the national adolescent dTPa immunisation program

and

Impact of removal of the 18 month DTPa dose on pertussis vaccine effectiveness

By Dr Helen Quinn

Protecting infants from pertussis by immunising parents – a literature review

and

Awareness and attitudes toward adult pertussis vaccination recommendations in parents and carers of four and five year old children

By Kerrie Wiley

The impact of varicella vaccination three years into a publicly funded program

By Dr Anita Heywood

Congenital and neonatal varicella: impact of National Varicella Vaccination Program in Australia

By Dr Gulam Khandaker

Human papillomavirus vaccine: how effective is the uptake in Indigenous Australian females?

By Telphia Joseph

Implementation of the national childhood pneumococcal immunisation program: stakeholder perspectives

By Dr Aditi Dey

Hospitalisation rates of seasonal influenza in non-Indigenous and Aboriginal and Torres Strait Islander children

By Dr Clayton Chiu

The impact of hepatitis A vaccination of Indigenous Australian children

and

Hib disease in Indigenous Australian children, 1993–2008

By Dr Rob Menzies

The adolescent's experience of school-based HPV vaccination

By Dr Spring Cooper

Caregivers' intentions regarding seasonal influenza and H1N1 vaccines for their children

By Maria Chow

Parents of children attending childcare – beliefs about seasonal and H1N1 influenza

By Catherine King

Trends in surveillance of adverse events following immunisation in Australia 2000–2009

By Dr Deepika Mahajan

Decennial administration of a reduced-antigen-content dTpa vaccine (Boostrix™) in adults

and

Immunogenicity and safety of the combined Hib-MenC-TT vaccine in Hib-primed/MenC-unprimed toddlers

By Professor Robert Booy

Implementation of a state-wide policy directive for mandatory immunisation of healthcare workers

by Dr Julie Leask

Several summaries from these presentations are available in this special edition newsletter.

Other staff who attended the conference must also be acknowledged for their hard work in producing showbags, collecting surveys and managing the stall so professionally. These staff members are: Karyn Phillips, Lyn Benfield, Donna Armstrong, Dr Alexa Dierig, Brynley Hull, Danielle Grant, Dr Jane Ho, Kirsten Ward, Han Wang, Dr Aditi Dey, Dr Deepika Mahajan, Dr Gulam Khandaker, Dr Melina Georgousakis, Dr Jane Jelfs, Dr Helen Quinn, Kerrie Wiley, Telphia Joseph, Dr Rob Menzies, Dr Julie Leask, Dr Leon Heron, Rose Joyce, Catherine King, Edwina Jacobs, Dr Anita Heywood, Maria Chow.



SUMMARIES OF PRESENTATIONS FROM PHAA

In this special edition, our staff who participated and presented their topics at the conference have summarised their presentations for your interest.

Parents of children attending childcare – beliefs about seasonal and H1N1 influenza



Authors: Catherine King (presenter), Julie Leask

Influenza, both seasonal and in the recent H1N1 pandemic form, continues to disproportionately affect those under the age of 5 years. Children that attend childcare centres are at a greater risk of contracting influenza than those cared for in the home. Annual influenza vaccination is recommended in *The Australian Immunisation Handbook* 9th edition for all persons above 6 months of age. Parental acceptance remains an important factor in the success of childhood vaccination programs. Vaccination against influenza which requires two initial doses and yearly subsequent vaccinations may present more of a challenge to gaining parental acceptance than other recommended childhood vaccines.

Beliefs and attitudes of parents about influenza and influenza vaccination are being sought as part of the Paediatric Influenza Vaccine Outcomes Trial (PIVOT). To date, 26 in-depth interviews have been conducted with parents of children attending childcare centres in the Sydney metropolitan area. Interviews and analysis are ongoing. Preliminary findings indicate that, despite the intense media coverage of pandemic influenza H1N1, there is a great need for further education of parents about the severity of influenza and influenza vaccination of children. As the study is specifically gathering in-depth data on parents' perceptions, information use practices and information needs, it is hoped that very targeted and useful resources can be developed to address the range of needs thus identified.

Rotavirus vaccine coverage and the impact of the vaccine on the timeliness of other NIP vaccines recommended at the same age

Authors: Brynley Hull (presenter), Kristine Macartney, Rob Menzies

Both rotavirus vaccines available in Australia are subject to upper age limits for the first and final doses in the course. This is the first time that such strict upper age cut-offs for infant vaccines have applied. Australia is in a unique position to assess the coverage and timeliness of rotavirus vaccination, and to determine if an impact on the timeliness of other NIP vaccines recommended at the same ages has occurred.

Using data from the Australian Childhood Immunisation Register, the study aimed to examine coverage and timeliness of rotavirus vaccine delivery and the impact it may have had on the timeliness of other vaccines given at the same age. Coverage and the timeliness of administration of two or three doses of rotavirus vaccine were assessed, depending on jurisdiction. Timeliness of administration of vaccines due at the same time as rotavirus vaccine was also assessed and a comparison made between three cohorts (one born before rotavirus was introduced onto the NIP schedule and the other two after it was introduced) to assess whether the introduction of rotavirus vaccine had any effect.

High rotavirus vaccine coverage has been achieved rapidly in Australia with estimated national coverage by June 2010 of 82% for two or three doses of vaccine received by 12 months of age. Timeliness of the third dose of DTP vaccine at 7 months of age improved 3 percentage points from pre to post introduction of rotavirus vaccine. A similar improvement was seen for the third dose of 7vPCV vaccine with a 3 percentage point improvement. The improvement in timeliness did not differ by provider type. Overall vaccination delay of greater than 6 months for Indigenous children decreased substantially from the pre to the post rotavirus introduction period.

Implementation of a state-wide policy directive for mandatory immunisation of healthcare workers



Authors: Charles Helms, Julie Leask (presenter), Spring Cooper, Maria Chow, Peter McIntyre

Immunisation rates of healthcare workers (HCWs) are sub-optimal worldwide. Voluntary methods to increase coverage have met with limited success. Mandates have gained recent attention as a way to address the problem. In New South Wales, a policy directive for HCWs was implemented on 1 February 2007 requiring employees to be vaccinated against a range of diseases.

This study aimed to examine the barriers and facilitators to policy implementation 2 years after the directive was specified. It was led by Professor Charles Helms who undertook the study with NCIRS as part of a Fulbright Foundation Senior Scholarship.

Professor Helms undertook semi-structured interviews with 58 staff from four key groups involved in policy development and/or implementation. The groups included the NSW Department of Health, NSW public hospitals, professional associations, and university liaison groups. Thematic analysis of interview transcripts identified major elements facilitating and hindering implementation.

The most important factors identified for successful implementation included existence of staff health services; capacity to record and capture immunisation status of staff; committed leadership; and good inter-departmental coordination and communication. These factors varied widely according to hospital size and institutional 'culture'. Implementing the policy involved significant resources and coordination. Therefore, a natural division occurred whereby hospitals tended to focus on ensuring new recruits were vaccinated then would address existing staff. Despite the varied success in implementation between areas and institutions, there was overall participant support for the spirit of the policy.

Those considering future policy implementation should address key issues of: ensuring capacity for recording and tracking staff immunisation status; resourcing of vaccine and the surge in workforce required by institutions to assess/vaccinate a large number of staff; ensuring good feedback mechanisms and in-built evaluation; providing clear leadership support for staff involved in enforcing requirements; and mobilisation of institutional leaders to champion such a policy.



Protecting babies from whooping cough

New vaccine trial in Immunisation Research at The Children's Hospital at Westmead

The aim of this study is to see if giving babies the pertussis vaccine (Pa vaccine) earlier than 6 weeks old means that they are better protected and have less risk of hospitalisation or death from pertussis.

Participants for this study should be in good health and less than 5 days of age. For those interested in participating in this vaccine trial please call:

Professor Peter McIntyre, Dr Nicholas Wood or Dr Jane Ho on 02 9845 1433

This study has been approved by The Children's Hospital at Westmead Ethics Committee. If you have any concerns about the conduct of this study, please do not hesitate to contact the Secretary of Ethics Committee (telephone: 02 9845 3017).



Impact of the national adolescent dTpa immunisation program



Authors: Helen Quinn (presenter), Rob Menzies, Peter McIntyre

The national adolescent dTpa immunisation program commenced in January 2004. Funds were made available to the states and territories and vaccine delivered to a single adolescent age cohort each year.

Routine national surveillance data and information from states and territories were analysed to estimate dTpa coverage and adverse events rates, and the impact of the program on age-specific rates of pertussis to 31 December 2008.

Overall coverage during the period 2004–2009 was estimated to be 62%. However, this varied between jurisdictions and grades.

The national notification data showed a reduction in pertussis incidence in the adolescent age group by 2007. During the recent 2008/2009 epidemic, the rate of pertussis in the 12–19 year age group did increase; however, it remained lower than historical peaks during epidemics before the immunisation program was implemented. Lower notification rates in immunised cohorts in 2008/2009 were observed, when compared with unimmunised cohorts. The analysis provides some evidence to suggest that differences in the way programs were delivered (catch-up, ongoing single cohort etc) between jurisdictions may be influencing the disease patterns that are seen later. Catch-up programs can rapidly reduce pertussis incidence across a broad age range within a cohort; however, ongoing programs targeting a single age group may be important for reducing disease susceptibility across the entire cohort in the long term. The observed consistently higher notification rates in younger adolescents also supports implementation of the program at a younger age.

The Australian national adolescent dTpa immunisation program achieved a coverage that was consistent with the rates obtained through other school-based immunisation programs. The evaluation showed that a whole of high school mass immunisation program with subsequent single age cohort annual vaccination had the greatest impact on disease burden.

Researchers awarded funding to study vaccine uptake in pregnant women



NCIRS staff were recently awarded a grant from the Financial Markets Foundation for Children to initiate a new study examining attitudes towards vaccination during pregnancy.

This study will look at what women think, feel and do about influenza vaccination during pregnancy and pertussis booster vaccination after giving birth. This will include a survey across three antenatal clinics and in-depth interviews. Using these findings and a review of the available evidence on safety and efficacy of the vaccines, we will develop an educational tool for women. The aim is to help them make informed decisions about these vaccines.

The project commenced in July this year and will be lead by Julie Leask, Spring Cooper and Nick Wood. Kerrie Wiley (pictured right) will be undertaking her PhD research based on this study.



Kerrie Wiley

HPV vaccination: the adolescent perspective

By Dr Spring Cooper PhD



Conducting research with adolescents is exciting. Their enthusiasm is infectious and they LOVE to talk. I'm passionate about the research that I do, and I'm excited to share adolescents' thoughts and opinions with the world. At PHAA this year, I presented "HPV vaccination: the adolescent perspective."

Australia has implemented a nation-wide program providing HPV vaccination to girls at school. However, there are few published studies that explore vaccination from an adolescent perspective. We conducted focus groups at nine schools across Sydney. We chose schools that had high and low HPV vaccine coverage; Catholic, independent, and government schools; and we included participants who had been vaccinated as well as those who hadn't. We ended up speaking with 130 adolescent girls and attended three vaccination days to observe the processes.

Three distinct areas were salient to the adolescents' experience: 1) lack of understanding about HPV and HPV vaccination; 2) adolescent involvement in decision-making about HPV vaccination; and 3) fear of HPV vaccination. Girls' lack of understanding included lack of knowledge of HPV and HPV vaccination, and confusion was perpetuated by myths and rumours. Despite limited understanding, adolescents often participated in decision-making with parents: mostly with agreement, but sometimes disagreement. Most girls described their desire to be more involved in the consent process. A universal experience among adolescents was fear of vaccination; this fear was often intense. In some cases, this led to refusal of vaccination on the day. Fear was influenced by delivery factors, reactions of peers and misinformation.

Strikingly low levels of understanding about HPV vaccination among adolescents have implications for their future sexual behaviour and cervical screening. Adolescents' understanding and involvement in consent must be further promoted for ethical, health and procedural reasons. Furthermore, the impact of fear experienced by adolescents vaccinated in this setting is significant and can be addressed.

Our team is now working on a multi-level and multi-component intervention for adolescents that will be linked to schools. We hope to increase adolescents' understanding of HPV and HPV vaccination, support the development of adolescents' autonomy, increase adolescents' health literacy and decision-making, and improve adolescents' experiences of vaccination.

And the winner is...

Congratulations to staff from NCIRS on their recent achievements:

Spring Cooper received an Early Career award for one of the best presentations at the PHAA Immunisation conference (see above)

Catherine King received the Discipline of Paediatrics & Child Health Prize for her presentation at the recent University of Sydney Postgraduate Research Student Conference.

NCIRS PhD student Dr Gulam Khandaker was awarded a competitive scholarship to attend and present his research findings at the Australasian Society for Infectious Diseases (ASID) annual scientific meeting in Darwin in May (see page 8)

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Join the NCIRS Australian Immunisation Professionals email discussion group. The group was created to facilitate communication among Australian immunisation practitioners, policy makers and researchers. You'll find news items, meetings of interest, questions and feedback, media controversies, discussions and more.

To subscribe, go to:

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Recent Journal Club presentations

Pertussis disease burden in the household: how to protect young infants

de Greeff SC, Mooi FR, Westerhof A, et al. *Clinical Infectious Diseases* 2010;50(10):1339–45
Abstract available at - <http://www.ncbi.nlm.nih.gov/pubmed/20370464?dopt=Abstract>

A strength of this study is the high number of identified household contacts who underwent laboratory diagnostic testing for pertussis (723 of 738, 98%), a figure much higher than many previous studies.

The results of this study are in agreement with many of the recently published pertussis source of infection studies which identify the mother as a prominent source of infection of infant pertussis cases. A point of difference of this study is the identification of siblings as being the most likely source of infection in this case. This finding concurs with a small number of Australian source of infection studies, including study populations of both hospitalised and non-hospitalised infant pertussis cases, which also found siblings to be a likely source of infection.

When considering the generalisability of these results, one should be mindful that the Dutch immunisation schedule was changed from a whole-cell vaccine (Dutch DTP-IPV-Hib) to an acellular vaccine in 2005 (Infanrix-IPV-Hib [GSK-Belgium] and later Pediacel [Sanofi PasteurMSD-Canada]). The results of this study demonstrated that children vaccinated with the whole cell vaccine were more likely to acquire pertussis infection than those vaccinated with the acellular vaccine, which may explain the higher prominence of siblings as a source of infection in this study.

These results support the rationale behind a 'cocooning' strategy – the immunisation of household contacts of newborn infants – to protect this vulnerable group against pertussis.

Presented by Kerrie Wiley, Research Assistant, NCIRS

Assessing cross-protection from 2009 pandemic H1N1 influenza through absenteeism of school teachers including comparison with 2007 experience (Summary of a study by Kevin Yin and Robert Booy, NCIRS)

Background and aims

The 2009 pandemic influenza A (H1N1) virus has been 'necessarily' novel, at least to those of pre-retirement age. To assess possible cross-protection to 2009 pandemic H1N1 influenza, a study was conducted in secondary school teachers. A similar study was undertaken in 2007. The study end point was staff absenteeism.

Methods

We performed a retrospective cohort study in a Queensland school. Data were obtained on a total of 122 junior and senior staff in 2007 and 99 in 2009. Seventy-two staff in 2007 and 58 in 2009 received seasonal trivalent inactivated influenza vaccine before the influenza seasons. Cross-protection was determined by comparing absenteeism (all causes) in staff who were vaccinated with those not vaccinated. The school routinely closes in mid-year for a 3-week holiday which allowed an assessment of absenteeism before and after the holiday.

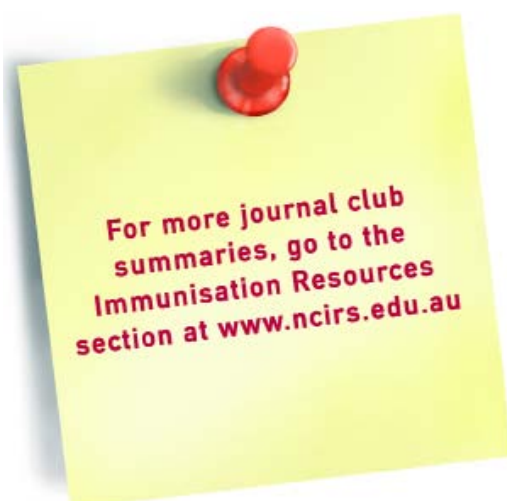
Results

No significant difference in absenteeism (all causes) was detected between vaccinated and non-vaccinated groups in 2009 when the novel influenza A (H1N1) was circulating. However, those given seasonal influenza vaccine in 2007 had much lower absenteeism in 2007 than those not vaccinated (0.5% compared with 3.7%, $p < 0.001$) during the peak month for absenteeism when two background rates of influenza were also peaking. Absenteeism in other months was identical. Furthermore, the difference was still significant when the absenteeism during the whole of winter was taken into account (1.5 vs 2.2%, $p = 0.05$). School closure (mid-year holiday) did not obviously reduce teacher absentee rates in 2007 or 2009.

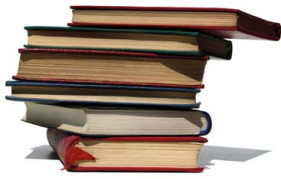
Conclusions

We found no evidence that vaccination with 2009 seasonal inactivated influenza vaccine induced cross-protection to pandemic H1N1 influenza among teaching staff as measured by absenteeism, whereas this was clearly evident in 2007 when the seasonal vaccine was matched to season strains.

Presented by Jiehui (Kevin) Yin, Research Officer, NCIRS



Some recent publications



Leask J, Chapman S, Cooper SC. "All manner of ills": the features of serious diseases attributed to vaccination. *Vaccine* 2010;28:3066-70.

Webster RI, Hazelton B, Suleiman J, Macartney K, Kesson A, Dale RC. Severe encephalopathy with swine origin influenza A H1N1 infection in childhood: case reports. *Neurology* 2010;74:1077-8.

Seale H, Ward K, Zwar N, Van D, Leask J, MacIntyre CR. Examining the knowledge of and attitudes to pandemic influenza among general practice staff. *Medical Journal of Australia* 2010;192:378-80.

Seale H, Heywood AE, McLaws ML, Ward KF, Lowbridge CP, Van D, MacIntyre CR. Why do I need it? I am not at risk! Public perceptions towards the pandemic (H1N1) 2009 vaccine. *BMC Infectious Diseases* 2010;10:99.

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Mahajan D, Menzies R, Roomiani I, Lawrence G. Supplementary report: surveillance of adverse events following immunisation among children aged less than seven years in Australia, 1 January to 30 June 2009. *Communicable Diseases Intelligence* 2010;34:49-53.

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Rosewell A, Chiu C, Lindley R, Dwyer DE, Moffatt CR, Shineberg C, Clarke E, Booy R, MacIntyre CR. Surveillance for outbreaks of influenza-like illness in the institutionalized elderly. *Epidemiology and Infection* 2010;138:1126-34.

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Heywood AE, Watkins RE, Pattanasin S, Iamsirithaworn S, Nilvarangkul K, MacIntyre CR. Self-reported symptoms of infection among travelers departing from Sydney and Bangkok airports. *Journal of Travel Medicine* 2010;17:243-9.

Leask J, Booy R, McIntyre PB. MMR, Wakefield and *The Lancet* [editorial]. *Medical Journal of Australia* 2010;193:5-7.

Brotherton J, Leask J, Jackson C, McCaffery K, Trevena L. National survey of general practitioners' experience of delivering the National Human Papillomavirus Vaccination Program. *Sexual Health* 2010;7:291-8.

Gold MS, Buttery J, McIntyre P. Human papillomavirus vaccine safety in Australia: experience to date and issues for surveillance. *Sexual Health* 2010;7:320-4.

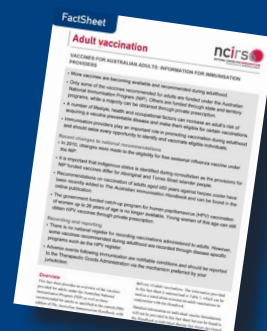
Leask J, Hooker C, King C. Media coverage of health issues and how to work more effectively with journalists: a qualitative study. *BMC Public Health* 2010;10:535.

Complete list available at www.ncirs.edu.au

COMING SOON

Fact sheet for immunisation providers: Adult vaccination

A number of vaccines are available for adults; however, the recommendations for their use as well as the provisions for NIP funding of adult vaccines can be unclear. NCIRS is developing a fact sheet that summarises the vaccines recommended during adulthood and the circumstances in which an adult patient may require them, with the aim of assisting immunisation providers to carry out adult vaccinations. We are currently seeking feedback from users to ensure this fact sheet becomes a valuable resource. It is expected to be available on the website in the next few weeks so be sure to check out the "Immunisation resources" page on the NCIRS website: www.ncirs.edu.au.



NCIRS NEWS

PhD student awarded scholarship to present recent influenza findings



NCIRS PhD student Dr Gulam Khandaker was awarded a competitive scholarship to attend and present his research findings at the Australasian Society for Infectious Diseases (ASID) annual scientific meeting in Darwin in May.

As a member of the NCIRS clinical research team, Dr Khandaker is involved in multiple projects researching the control and management of influenza. The competitive scholarship provided by the ASID council allowed Dr Khandaker to present results from three independent influenza studies.

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