A VERY MERRY CHRISTMAS!
All the staff and students wish you and your families a safe and happy Christmas.

NCIRS Surveillance Manager, Dr Aditi Dey, visits China’s CDC.

Celebrating recent achievements by staff from NCIRS.

NCIRS scholar travels to Jordan for conference.

Concise summaries from a recent journal club presentation.
Dr Aditi Dey visits the Chinese Center for Disease Control and Prevention

A MEETING OF THE COLLABORATIVE PROJECT ‘DEVELOPMENT AND IMPLEMENTATION OF A POST-MARKET EVALUATION SYSTEM OF VACCINES AND DEVELOPING NATIONAL IMMUNIZATION STRATEGY FOR NEW VACCINES’ WAS HELD IN BEIJING FROM 25 TO 27 OCTOBER 2012.

Prepared by Dr Aditi Dey

This meeting was held to mark the completion of the collaborative project between NCIRS and the Chinese Center for Disease Control and Prevention (CDC); School of Population Health, University of Queensland (UQ); and the School of Public Health and Community Medicine, UNSW. The project duration was from May 2011 to October 2012. The research project was rolled out in seven provinces (Hebei, Heilongjiang, Jiangsu, Jiangxi, Guangdong, Shanghai and Gansu) that were selected as research districts for AEFI surveillance system evaluations and capacity building for the Chinese CDC. These provinces investigated Guillain-Barré syndrome (GBS) and acute disseminated encephalomyelitis (ADEM) in their AEFI surveillance systems. Training and exchange of the project achievements and experiences were shared with other provinces with weak AEFI surveillance systems.

This meeting in Beijing was attended by Dr Andrew Page (UQ), Biao Guo (UQ) and Dr Aditi Dey (NCIRS) from Australia and senior staff members from the Chinese CDC, immunisation program managers and representatives of provinces, prefectures and counties all across China. There were approximately 100 attendees at this meeting.

There were several presentations at the meeting including presentations on the immunisation program and AEFI surveillance in China (by Dr Huaqing Wang, Director of NIP); introduction of new vaccines (by Dr Jingshan Zheng, Director of Immunization Service Division of NIP); background incidence of GBS and ADEM in China (by Dr Liu Dawei, Director, Division of AEFI Surveillance, NIP); surveillance of AEFI and new developments in Australia (by Dr Aditi Dey, NCIRS); and systematic review of reporting rates of AEFI (by Biao Guo, UQ). Overall, this project was a great opportunity for sharing experiences and expertise between Chinese CDC and Australian collaborators. It is anticipated that there would be follow-up projects arising from this project that would further strengthen ties and increase collaborative efforts between us.
Changes in hospitalisations for acute gastroenteritis in Australia after the national rotavirus vaccination program
Recent paper published by NCIRS

Objective: To evaluate the impact of the Australian rotavirus vaccination program on both rotavirus and all-cause acute gastroenteritis (AGE) hospitalisations and to compare outcomes in Indigenous and non-Indigenous people.

Design and setting: Retrospective analysis of the Australian Institute of Health and Welfare National Hospital Morbidity database for hospitalisations coded as rotavirus and all-cause AGE, between 1 July 2001 and 30 June 2010.

Main outcome measures: Age-specific hospitalisation rates in Indigenous and non-Indigenous people, before and after the introduction of the vaccine program in July 2007.

Results: There was a 71% decline in rotavirus-coded hospitalisations of children aged <5 years between periods before and after rotavirus vaccination (from 261 per 100 000 to 75 per 100 000). There was also a 38% decline in non-rotavirus coded AGE hospitalisations (from 1419 per 100 000 to 880 per 100 000). This represented more than 7700 hospitalisations of children aged <5 years being averted in the financial year 2009–10.

Reductions were also observed in the 5–19-years age group, suggesting that transmission of virus was reduced at a population level. Decreases in hospitalisations of Indigenous children were smaller than those for the general population, and fluctuated by location and year.

Conclusions: These data show a sustained and substantial decline in severe rotavirus disease and all-cause AGE since the introduction of rotavirus vaccination, most pronounced in the target age group, but with evidence of herd immunity. The impact of rotavirus vaccination in Indigenous children in hyperendemic settings was less remarkable.

Written by: Aditi Dey, Manager, Surveillance, Han Wang, Statistician, Robert Menzies, Deputy Director, Surveillance, Kristine Macartney, Deputy Director, Government Programs
RECENT PUBLICATIONS


McIntyre PB, Sintchenko V. The “how” of PCR testing for Bordetella pertussis depends on the “why”. Clinical Infectious Diseases October 2012 [Epub ahead of print] doi:10.1093/cid/cis897


NHRMC GRANT ANNOUNCEMENTS

CONGRATULATIONS TO THE FOLLOWING RESEARCHERS WHO HAVE BEEN AWARDED A 2013 NATIONAL HEALTH AND MEDICAL RESEARCH COUNCIL (NHMRC) GRANT.

Chief Investigators from NCIRS: Dr Nicholas Wood, A/Prof Kristine Macartney
Project Title: Febrile seizures following vaccination in children: How common are they and what is the long term clinical outcome?

Chief Investigators from NCIRS: Dr Nicholas Wood, Dr Heather Gidding, Prof Peter McIntyre
Project Title: Q fever: How common is it and how can we best prevent it? Research to inform Q fever vaccine policy in Australia and Internationally.

Early Career Fellowships

Chief Investigator: Dr Gulam Khandaker
Project Title: Causes and consequences of acute encephalitis in children.

Chief Investigator: Dr Heather Gidding
Project Title: Population-based studies to determine the effectiveness of Australia’s immunisation program.

A must-read – Communicating with parents about vaccination: a framework for health professionals

Julie Leask (NCIRS), Paul Kinnersley, Cath Jackson, Francine Cheater, Helen Bedford and Greg Rowles
BMC Pediatrics 2012;12:154

ABSTRACT

Background: A critical factor shaping parental attitudes to vaccination is the parent’s interactions with health professionals. An effective interaction can address the concerns of vaccine supportive parents and motivate a hesitant parent towards vaccine acceptance. Poor communication can contribute to rejection of vaccinations or dissatisfaction with care. We sought to provide a framework for health professionals when communicating with parents about vaccination.

Methods: Literature review to identify a spectrum of parent attitudes or ‘positions’ on childhood vaccination with estimates of the proportion of each group based on population studies. Development of a framework related to each parental position with determination of key indicators, goals and strategies based on communication science, motivational interviewing and valid consent principles.

Results: Five distinct parental groups were identified: the ‘unquestioning acceptor’ (30–40%), the ‘cautious acceptor’ (25–35%); the ‘hesitant’ (20–30%); the ‘late or selective vaccinator’ (2–27%); and the ‘refuser’ of all vaccines (<2%). The goals of the encounter with each group will vary, depending on the parents’ readiness to vaccinate. In all encounters, health professionals should build rapport, accept questions and concerns, and facilitate valid consent. For the hesitant, late or selective vaccinators, or refusers, strategies should include use of a guiding style and eliciting the parent’s own motivations to vaccinate while, avoiding excessive persuasion and adversarial debates. It may be necessary to book another appointment or offer attendance at a specialised adverse events clinic. Good information resources should also be used.

Conclusions: Health professionals have a central role in maintaining public trust in vaccination, including addressing parents’ concerns. These recommendations are tailored to specific parental positions on vaccination and provide a structured approach to assist professionals. They advocate respectful interactions that aim to guide parents towards quality decisions.

This is freely available online at http://www.biomedcentral.com/content/pdf/1471-2431-12-154.pdf
ON AUGUST 8, 2012 NCIRS HOSTED THE CRE IN IMMUNISATION WORKSHOP ENTITLED: ‘UPDATE ON MEASLES, MUMPS AND RUBELLA – CURRENT RESEARCH AND FUTURE PRIORITIES.’

Prepared by Dr Heather Gidding

The workshop involved a series of talks around the current epidemiology of measles, mumps and rubella followed by a discussion session for CRE researchers to identify research gaps and priorities. Dr Aditi Dey gave an overview of national surveillance data in Australia and Professor Margaret Burgess reported back on a recent meeting in Europe. Measles was a problem in <1- one year olds in many European countries, such as the Spain, France and Italy, in 2011, although rates were lower in 2012 (even though there were no increased control efforts). In contrast, most mumps outbreaks have been in young adults, many of whom had received 2 doses of MMR vaccine. Circulating strains showed genetic drift from the Jeryl Lynn vaccine strain and this may explain the upsurge in vaccinated mumps cases. Professor Burgess highlighted that rubella vaccination is still not routine in some countries, and that further work is required to improve the reliability of rubella serological assays. Dr James Wood presented on recent modelling work and indicated future research priorities should include more detailed spatial estimates of vaccination coverage and investigating the correlation between low antibody levels, risk of infection and infectiousness. Following these presentations, we heard from May Chiew, Anita Heywood, and Heather Gidding regarding planned projects to estimate the measles reproduction number using routinely collected surveillance data, and how data linkage can inform estimates of disease burden and vaccine uptake and effectiveness.
THIS JULY I WAS IN GENEVA, SWITZERLAND, WORKING AS AN INTERN AT THE WORLD HEALTH ORGANIZATION (WHO). THIS 8-WEEK INTERNSHIP ADDED EXCITEMENT TO MY LIFE THROUGH EXPERIENCING THE DIVERSE CULTURE, LANGUAGE, PEOPLE, FOOD ETC.

Prepared by Ms Maria Chow

Working at the Immunization Policy Unit, I took part in a few projects, which included literature reviews on certain vaccination topics, preparation of a presentation about surveillance methods of varicella and herpes zoster, survey development for immunisation program managers, liaison with pharmaceutical companies to obtain vaccine data, and attendance in teleconferences with immunisation experts from various countries.

I was glad that I contributed the skills that I acquired from NCIRS to the team, while being able to learn new skills, and had the international exposure.

Meeting other interns was eye-opening, our similar aspirations in life and career goals drew us together despite where we were from. We had the opportunity to meet Dr Margaret Chan, who shared about her life as the WHO Director-General, both ups and downs, and also the challenges WHO was facing. Geneva is an amazing city situated at the border of Switzerland and France. It has more than 100 international agencies, including the United Nations.

I would like to thank Dr Julie Leask, for allowing me to take this internship, and many other colleagues who provided intellectual input for the above projects.
Scholar travels to conference in Jordan

DURING NOVEMBER, I WAS FORTUNATE ENOUGH TO ATTEND AND PRESENT ON ‘THE TRANSMISSION OF MEASLES IN AN ERA OF ELIMINATION IN AUSTRALIA’ AT THE 7TH GLOBAL TRAINING IN EPIDEMIOLOGY AND PUBLIC HEALTH INTERVENTIONS NETWORK (TEPHINET) CONFERENCE IN AMMAN, JORDAN.

Prepared by Ms May Chiew

TEPHINET is an organisation that aims to build international public health capacity through the support and networking of field-based training programs (FETP) around the world. The conference included delegates from as far afield as Colombia and Nigeria which led to a diverse range of oral and poster presentations including a number of diseases that I had never heard of.

The camaraderie amongst the FETP trainees was heartening and I met many inspiring individuals passionate to improve health in their own countries, many from countries affected by conflict and poverty. I was also fortunate to meet William Foege who was instrumental in the global strategy that led to the eradication of smallpox.

I would like to thank Drs Heather Gidding, Aditi Dey, James Wood and Stephanie Davis and Professor Peter McIntyre for all their support and time for this project as well as ANU for providing me with the funds to travel to Jordan.
HUMAN PAPILOMAVIRUS (HPV) IS A MAJOR CAUSE OF CERVICAL CANCER IN WOMEN. IT CAN BE PREVENTED BY VACCINATION AND BY GOOD SCREENING WITH PAP SMEARS.

Prepared by Professor Robert Booy

Human papilomavirus (HPV) is a major cause of cervical cancer in women. It can be prevented by vaccination and by good screening with Pap smears. Australia was the first to introduce a vaccine 5 years ago.

It normally takes 15 to 20 years for poor countries like PNG to follow suit. A research project funded by Rolex and University of Queensland has begun in order to reduce the time required to introduce the lifesaving HPV vaccine for girls in PNG.

In October 2012, Professors Mark Kendall and Robert Booy visited Port Moresby and did pilot work around the acceptability and practicality of a new vaccine device for delivering antigen into the skin.

This visit revealed the dire need for prevention as screening misses many women in PNG and a large proportion of cancer cases are not diagnosed until only palliative treatment is possible. Preliminary work with nurses and doctors and medical students showed that the device was easy to use and highly accepted. Future studies will involve delivering active vaccine once Phase 1 studies in humans are first completed in Australia.
Risk of adverse fetal outcomes following administration of a pandemic influenza A(H1N1) vaccine during pregnancy

DURING THE 2009 INFLUENZA A(H1N1) PANDEMIC, PREGNANT WOMEN WERE AMONG THOSE TARGETED FOR VACCINATION. ASSESSMENT OF FETAL SAFETY FOLLOWING MATERNAL VACCINATION HAS BEEN LIMITED TO PHARMACOVIGILANCE AND DESCRIPTIVE COHORT STUDIES.

Presented by Kerrie Wiley, PhD student – Social Research, NCIRS

The aim of this study was to investigate whether in utero exposure to AS03-adjuvanted influenza A(H1N1)pdm09 vaccine is associated with an increased risk of major birth defects if exposed during the first trimester of pregnancy, or preterm birth or fetal growth restriction when exposed at any time during pregnancy.

This was a registry-based cohort study conducted in Denmark. The birth cohort were identified through the Danish Medical Birth Register, and linkage to other databases facilitated by unique personal identification numbers assigned to all Danish residents.

Multiple births, missing gestational age or birth weight, and infants with congenital abnormalities with known causes were excluded, as were mothers who were vaccinated prior to pregnancy. Potential confounders considered included maternal age; place of birth; urbanisation of place of residence; parity; smoking status; pre-pregnancy body mass index; history of spontaneous abortion, birth defects, or small for gestational age deliveries; and maternal prescription drug use.

Data was analysed using a propensity score-matched analysis, and an unmatched cohort analysis. The data was analysed in two groups: first trimester exposure, and second or third trimester exposure.

The unmatched cohort analysis showed that vaccination during the first trimester had a higher prevalence of major birth defect (POR 2.26; 95% CI: 1.40–3.66) and preterm birth (POR 2.08; 95% CI: 1.45–2.99), while all other outcomes were not significantly different. There was no difference in outcomes demonstrated in the unmatched analysis for second and third trimester exposure.

Propensity score-matched analysis showed no significant differences in outcomes for exposed and unexposed groups for any exposure timeframe.

The authors discuss that in Denmark women who had a pre-existing condition associated with an increased risk of severe influenza infection, such as cardiovascular disease, were recommended to have the vaccine in trimester one, while all other pregnant women were recommended to receive the vaccine in trimester two. The differences between these groups may explain the increased risk seen in the unmatched analysis, which was not seen in the propensity score-matched analysis.

The authors conclude that this study found no significant association between AS03-adjuvanted influenza A(H1N1) pdm09 vaccine administration during pregnancy and an increased risk of major birth defects, preterm birth or fetal growth restriction. They caution that while the results provide “robust evidence” for outcomes associated with second or third trimester exposure to the vaccine, the results for first trimester exposure should be treated as preliminary and in need of confirmation.
5 minutes with Immunisation CNC
Kath Cannings

Kath is a Registered Nurse who has completed a Master of Public Health and post graduate qualifications in immunisation and infection control. She joined NCIRS in 2010 after working for 10 years at the Northern Sydney Public Health Unit as Immunisation Coordinator. Kath’s main focus is the management and follow-up of children and adults who have experienced an adverse event following immunisation. When she isn’t doing all of this, Kath loves to sing, ride her two motorbikes (road and trials) and swim.

1. WHAT DOES YOUR ROLE AT NCIRS ENTAIL?
Coordinating the Adverse Events Following Immunisation (AEFI) Clinic at The Children’s Hospital at Westmead as well providing education and advice for immunisation providers on AEFI.

2. WHAT ISSUES IN IMMUNISATION CONCERN YOU THE MOST?
The speed with which misinformation can spread through ‘smart’ technology these days.

3. WHAT IS THE MOST ENJOYABLE PART OF YOUR ROLE AT NCIRS?
Definitely the interaction I have with the parents and children.

4. DESCRIBE YOURSELF IN THREE WORDS...
Bubbly, dedicated, enthusiastic.

5. WHAT WOULD YOU SPEND YOUR LAST $5 ON...
A phone call to my mum to ask for some more money!!

6. YOUR IDEA OF HAPPINESS IS...
Being content with whatever life throws at you – good or bad (knowing that God has a plan for me)

7. IF YOU COULD INVITE THREE PEOPLE OVER FOR DINNER, WHO WOULD THEY BE?
The Apostle Paul, one of my early ancestors, P!NK.

8. IF YOU COULD HAVE ANY SUPERPOWER, WHAT WOULD IT BE AND WHY?
To breathe underwater – to be able to explore and see everything without time limits or health issues.

9. DO YOU HAVE ANY HIDDEN TALENTS?
I can sing (not as hidden as it used to be now that I’m part of a band called Jacks Avenue).

10. IF YOU WEREN’T WORKING AS AN IMMUNISATION CNC YOU WOULD BE WORKING AS A ...
Professional singer.

FOR YOUR DIARY

OFFICE CLOSURE DURING CHRISTMAS & NEW YEAR

Please be aware that NCIRS will close from Monday 24 December until Tuesday 1 January 2013. We will re-open on Wednesday 2 January 2013.

COMING SOON

Immunisation Implementation Workshop
Thursday 7th & Friday 8th March 2013.