ABOUT THE NCIRS

Our Vision
To be a world leader in translational research optimising the population health benefits of immunisation.

Our Purpose
To lead and support collaborative research, advancing immunisation policy and practice.

Our Scope
Our role includes research translation, identifying and synthesising best evidence, clinical, social and epidemiologic research that focuses on important evidence gaps, and strengthening disease surveillance and vaccine safety monitoring.

The National Centre for Immunisation Research and Surveillance of Vaccine Preventable Diseases (NCIRS) was established in August 1997.

Core funding is provided by the Australian Government Department of Health, supplemented by an annual grant from New South Wales Health.

Governance and infrastructure support is through the Kids Research Institute within the Sydney Children’s Hospitals Network. The centre is affiliated with the Discipline of Child and Adolescent Health and the School of Public Health, the University of Sydney. Other stakeholders include our research partners, advisory committees, and the broader community of immunisation providers.

A WORD FROM SIR GUSTAV NOSSAL

The 20th Anniversary of the National Centre for Immunisation Research and Surveillance is indeed an event worth celebrating.

Established by the Australian Government Department of Health and Ageing in August 1997, NCIRS is a research organisation and a think tank of supreme importance.

It is essentially a one-stop-shop furnishing independent advice on all aspects of immunisation in Australia.

Its work covers both technical and social issues and informs policy and planning for the nation’s vaccination effort.

Among other things, NCIRS provides surveillance of vaccine-preventable diseases in Australia; measures vaccine coverage at various age groups; monitors and records adverse events; constantly surveys vaccine safety and efficacy; and provides technical support to ATAGI, the Australian Technical Advisory Group on Immunisation, which determines vaccine schedules and similar matters.

As a result of NCIRS’s ongoing work, Australia is widely regarded as having one of the most robust and comprehensive immunisation systems in the world.

Fortunately located within the orbit of the brilliant Children’s Hospital at Westmead in Sydney, it lives within the real world as a very practical body.

As a custodian of history’s most cost-effective public health tools NCIRS makes a vital contribution to the health of all Australians. May its next 20 years prove as stellar and productive as the 20 years we are celebrating.

SIR GUSTAV NOSSAL AC, CBE, FRS
PROFESSOR EMERITUS
THE UNIVERSITY OF MELBOURNE
Twenty years ago, when Australia invested in a National Centre for Immunisation Research and Vaccine Preventable Disease (VPD) Surveillance (NCIRS), the capacity to monitor disease incidence, vaccine coverage or trends in parental attitudes to vaccines nationwide was lacking, as was a national technical advisory committee.

In 1997, a widespread pertussis outbreak causing infant deaths was in full swing, a measles epidemic was predicted, and a national measles control campaign (MCC) was planned for 1998. Parents and GPs were concerned about reactions to the whole cell pertussis vaccine, and in 1998 a Lancet paper asserting the measles-mumps-rubella (MMR) vaccine was linked to autism appeared. The world-first Australian Childhood Immunisation Register (ACIR) had just been launched in 1996, using the Medicare database. Preceding national surveys had found only 85 per cent of one-year-olds had received three doses of pertussis vaccine.

THE FIRST 10 YEARS

By 2007, the NCIRS had grown from a core staff of less than 10 to more than 50 and could boast many accomplishments.

Four national reports on notifications, hospitalisations and deaths due to VPDs were produced along with a suite of vaccine coverage documents. Mapping using the ACIR coverage data had been set up, studies validating the ACIR’s figures reported, and a MMR decision tool for parents developed.

The NCIRS provided the technical secretariat for the Australian Technical Advisory Group on Immunisation (ATAGI) and its steadily expanding working parties, and had an end-to-end support role for both the Australian Immunisation Handbook and vaccine advice to the Pharmaceutical Benefits Advisory Committee (PBAC).

The national serosurveillance program was supporting the evaluation of vaccine campaigns and modelling of VPDs, with the NCIRS leading a grant to develop Australia’s capacity in modelling.

In Indigenous immunisation, the NCIRS reports were highly valued, as was an international workshop on immunisation for Indigenous peoples in Alice Springs in 2006.

THE PAST 10 YEARS

The past decade has seen many further achievements.

Technical support for the ATAGI and the PBAC has steadily increased, with many new vaccines considered for the National Immunisation Program (NIP).

Vaccine trials funded by the NHMRC at both ends of the age spectrum where led by the NCIRS – influenza and pneumococcal vaccines in the elderly, and a national collaborative trial of pertussis vaccine in newborns.

Communication through the NCIRS website www.ncirs.edu.au, factsheets and national workshops have been greatly enhanced.

Several highly collaborative initiatives have strengthened our capacity at a national level.

The Paediatric Active Enhanced Disease Surveillance (PAEDS) hospital network has continued to expand, identifying a world-first intussusception safety signal from the new rotavirus vaccines in 2011.

Vaccine safety has been a long-term focus for the NCIRS, with our central role in the investigation of the 2010 influenza vaccine febrile convulsion incident. This led to the AusVaxSafety national active surveillance collaboration in 2014.

The NCIRS has led and supported competitive grants with various partners such as:
- Safety studies around febrile convulsions and the Q fever vaccine
- Influenza and pertussis vaccine effectiveness with the PAEDS network; and the
- Centre of Research Excellence (CRE) with the University of NSW focussing on immunisation in disadvantaged and special risk populations. The CRE supported proof of concept linkage of VPD data from two states (NSW and WA) to the ACIR and strengthened research relevant to Aboriginal and Torres Strait Islander communities.

The Sharing Knowledge about Immunisation (SKAI) project is another signature development. SKAI is a partnership between the NCIRS and the University of Sydney to improve communication about vaccines between parents and providers. In 2017, a new collaboration with the National Prescribing Service (NPS) to deliver the Primary Health Network immunisation support project added to a decade of strong achievement.

As it enters its next 10 years, the NCIRS is recognised nationally and internationally for its work in advancing immunisation policy and practice.

We look forward to our continuing role in leadership and collaborative research, which contributes to delivering the best possible health outcomes for the people of Australia from its world-class National Immunisation Program (NIP).
IMMUNISATION MILESTONES

1993
Haemophilus influenzae type b (Hib) is first vaccine funded for a new disease since measles mumps vaccine in 1982

1996
Australian Childhood Immunisation Register (ACIR) becomes the world’s first national immunisation register

1997
Technical secretariat for the 8th Australian Immunisation Handbook. Assumed full drafting role from the 9th edition onwards

1998
National measles control campaign targets 1-12 year olds

1999
First national immunisation evaluation - measles control campaign

2000
First national vaccine preventable disease (VPD) report

2003
Meningococcal C conjugate vaccine national campaign targeting people 1-24 years old commences

2004
First Indigenous VPD report published

2005
Varicella vaccine funded for children at 18 months and (until 2016) 12-13 year olds

2006
Pharmaceutical Benefits Advisory Committee (PBAC) assumes responsibility for economic evaluation of vaccines for the National Immunisation Program (NIP)

2007
7-valent pneumococcal conjugate vaccine funded for children aged 2-24 months

2008
Technical secretariat for all ATAGI advice documents

2009
Pandemic (A/H1N1 2009) influenza vaccine registered and becomes the first free vaccine for people of all ages

2010
Influenza vaccine safety incident – all influenza vaccines temporarily withdrawn for under 5 year olds

2011
Human papillomavirus (HPV) vaccine funded for girls and women 12-26 years old

2012
Centre of Research Excellence in Immunisation of Disadvantaged and High Risk Populations with the University of NSW

2013
National zoster vaccine program for 70-79 year olds commences

2014
Sharing Knowledge About Immunisation (SKAI) and Collaboration on Social Science in Immunisation (COSSI) commences

2015
Meningococcal C conjugate vaccine national campaign targeting people 1-24 years old

2016
First Indigenous VPD report published

NCIRS MILESTONES

1997
The National Centre for Immunisation Research & Surveillance (NCIRS) founded

1999
Technical secretariat for 8th Australian Immunisation Handbook

2000
First national immunisation evaluation - measles control campaign

2002
NCIRS awarded a capacity building grant to develop modelling for vaccine-preventable diseases

2004
First Indigenous VPD report published

2005
National workshop develops recommendations for vaccine safety

2007
Paediatric Active Enhanced Disease Surveillance (PAEDS) hospital network established

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7-valent pneumococcal conjugate vaccine funded for children aged 2-24 months

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2014
Sharing Knowledge About Immunisation (SKAI) and Collaboration on Social Science in Immunisation (COSSI) commences

2016
Primary Health Networks (PHN) Immunisation Support Service starts
The NCIRS works across government, clinical and academic sectors, providing a focal point for national collaboration to foster the creation and translation of the evidence needed to inform best practice in the control of vaccine preventable diseases in Australia.

Over the past 20 years the NCIRS has:

- GROWN from a team of 7 to 70 dedicated individuals
- Produced 1000 peer-reviewed PUBLICATIONS
- EDUCATED >150 post-graduate students & trainees
- Been awarded >100 RESEARCH GRANTS

ATAGI

The NCIRS is the technical engine room for ATAGI having developed more than 100 high-level reports and recommendations, including submissions to the PBAC. We manage all content for the Australian Immunisation Handbook which provides clinical advice for health professionals on the safest and most effective use of vaccines in their practice. The tenth edition is now hosted online at www.immunise.health.gov.au/internet/immunise/publishing.nsf/Content/Handbook10-home

SURVEILLANCE OF VPD

We have a leading role in analysing vaccine preventable disease epidemiology with more than 20 VPD burden reports produced. VPD baseline and trend measurement is essential for immunisation policy development and program performance.

Our approach to surveillance integrates analysis of VPD notifications, hospitalisations and deaths. The NCIRS pioneered use of coded hospitalisations for VPDs, particularly when notification data are problematic, such as for varicella and rotavirus.

Our surveillance reports serve as a national resource for supporting and informing control of diseases for which there are national immunisation programs.

We are a member of the Communicable Diseases Network of Australia (CDNA).

IMMUNISATION PROGRAM EVALUATIONS

The NCIRS with its national partners coordinates evaluation of the implementation, impact and safety of new vaccines added to the NIP. There have been 16 NIP evaluation reports since 1998 including the MCC, meningococcal C campaigns 2003–2006, and national rotavirus, varicella and HPV vaccination programs.

VACCINE COVERAGE

The NCIRS is the acknowledged expert in the use and interpretation of vaccine registry data. There have been nine annual national coverage reports since 2007 detailing the level of immunisation in Australia, highlighting trends and significant issues.

Many more focussed studies have addressed policy and practice questions.

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PNEUMONIA HOSPITALISATIONS PREVENTED

Between 2005-2010, the 7-valent pneumococcal vaccination program was estimated to prevent ~15,200 community-acquired pneumonia hospitalisations in those aged <5.


UNIVERSAL INFANT CONJUGATE PNEUMOCOCCAL VACCINATION PROGRAM

JANUARY 2005

Invasive pneumococcal disease (IPD) hospitalisations in Australia by age group before and after conjugate vaccine program

~15,200 hospitalisations prevented.

IPD-RELATED MORTALITY PREVENTED

Between 2005-2010, the 7-valent pneumococcal vaccination program was estimated to have prevented ~160 deaths from invasive pneumococcal disease.

MONITORING POPULATION IMMUNITY AND VACCINE EFFECTIVENESS (VE)

A national serosurveillance program measured population immunity to VPDs in 1998, 2002, 2007 and 2012. This important tool for VPD modelling is available in few other countries.

The NCIRS pioneered the use of the ACIR for case-control studies, which identified waning VE for pertussis and pneumococcal immunisation programs.

We provide VE for seasonal influenza through our partnership with the Influenza Complications Alert Network (FluCAN), a sentinel hospital-based surveillance program that operates at sites in all states and territories in Australia.

SENTINEL NETWORKS FOR ACTIVE SURVEILLANCE

The PAEDS multi-hospital national network was established in 2007 to study serious conditions in childhood around VPDs and adverse events following immunisation.

Our key achievements include:

• The rapid response during the influenza pandemic in 2009; and the
• First publications on specific adverse event risks post rotavirus and MMRV.

~7300 HOSPITALISATIONS PREVENTED across all ages between 2005-2013

<5 year olds = 4485
≥5 year olds = 2822


IPD-RELATED HOSPITALISATIONS PREVENTED

Between 2005-2010, the 7-valent pneumococcal vaccination program was estimated to have prevented ~5900 hospitalisations.

About half of these were prevented in adults via herd protection.

PNEUMONIA HOSPITALISATIONS PREVENTED

Between 2005-2010, the 7-valent pneumococcal vaccination program was estimated to prevent ~15,200 community-acquired pneumonia hospitalisations in those aged <5.
High-grade cervical abnormalities (HGAs) detected in women screened in Australia before and after vaccine program


Aboriginal and Torres Strait Islander populations have patterns of VPD burden and challenges in vaccine uptake requiring specific vaccine programs. The national Indigenous immunisation coordinator for the National Immunisation Committee is based at NCIRS. We also lead the National Aboriginal and Torres Strait Islander Immunisation Network. Three reports on VPDs in Indigenous people have been produced.

Landmark trials led by NCIRS have included pneumococcal conjugate and influenza vaccines in elderly adults and acellular pertussis vaccine in babies soon after birth. Internationally ground-breaking epidemiologic studies focus on the Q fever vaccine, as well as febrile convulsions, and intussusception post vaccination.

The NCIRS website now has more than 10,000 hits per month, the Australian Immunisation Providers (AIP) email network includes more than 1000 members, and there are more than 15 vaccine-related and 9 vaccine safety factsheets on the NCIRS website.
OUR LEADERS

The operations and research activities of the NCIRS are overseen by an Advisory Board and a Scientific Advisory Committee.

The Advisory Board monitors the governance, growth and financial sustainability of the NCIRS and provides advice on strategic direction and organisational development.

The Scientific Advisory Committee contributes to and reviews our research and surveillance strategy and monitors our scientific outcomes and the quality of the research and surveillance systems we use in our work.

PROFESSOR MARGARET BURGESS
NCIRS FOUNDING DIRECTOR
1997 – 2004

As director, Professor Burgess established serosurveillance, a range of vaccine-related research and first highlighted the importance of vaccine safety monitoring. She was awarded the Order of Australia in 2003.

PROFESSOR PETER MCINTYRE
NCIRS DIRECTOR
2004 – 2017

Professor McIntyre has been director of the NCIRS for 13 years. He has overseen significant expansion in all areas of work, through government and research grant support. He is recognised internationally for research in vaccine prevention of pertussis and pneumococcal disease and has had multiple roles with the World Health Organisation.

DR MICHAEL BRYDON
is our current Advisory Board chair. He was appointed in 2016. Dr Brydon is the chief executive of the Sydney Children’s Hospitals Network.

PROFESSOR JODIE McVERNON
became chair of the Scientific Advisory Committee in 2017. She is the director of epidemiology at the Peter Doherty Institute for Infection & Immunity, the University of Melbourne.

We acknowledge the commitment, dedication and stewardship of our past chairs:

ADVISORY BOARD CHAIRS

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