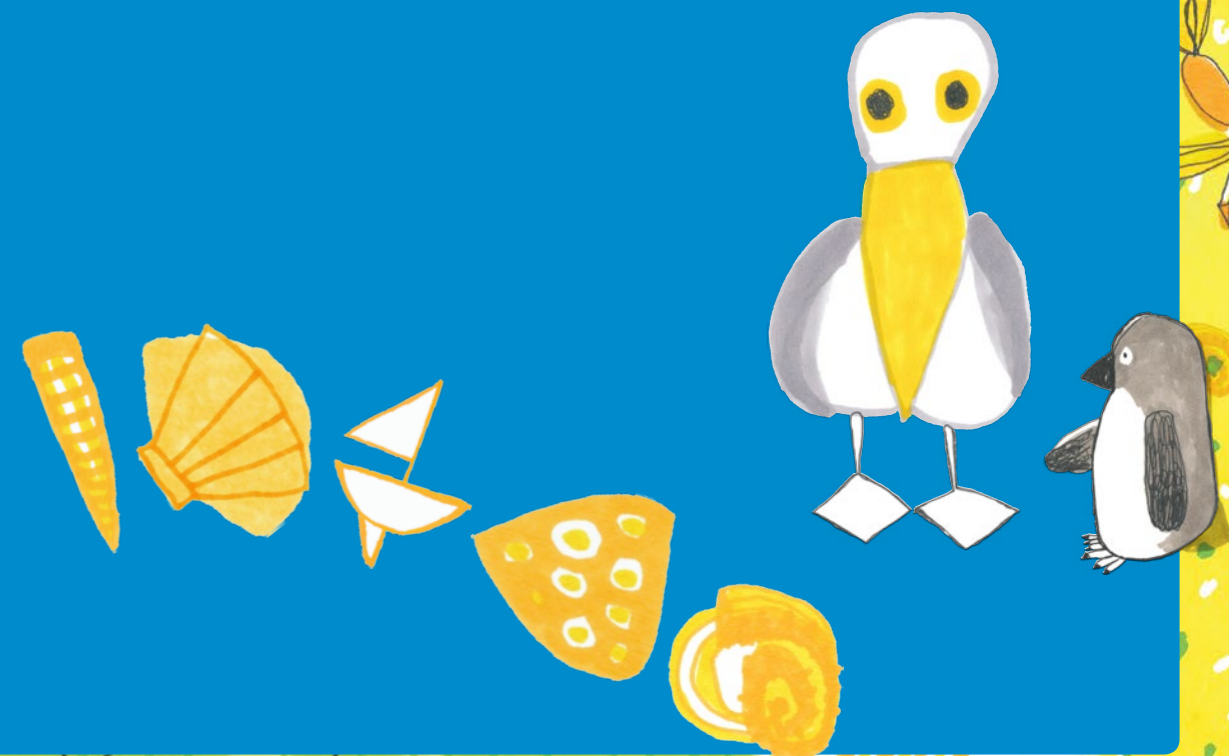




The Royal  
Children's  
Hospital  
Melbourne

IMMUNISATION SERVICE

# Immunisation Service Report 2014-16



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**Melbourne Children's**  
A world leader  
in child and  
adolescent  
health

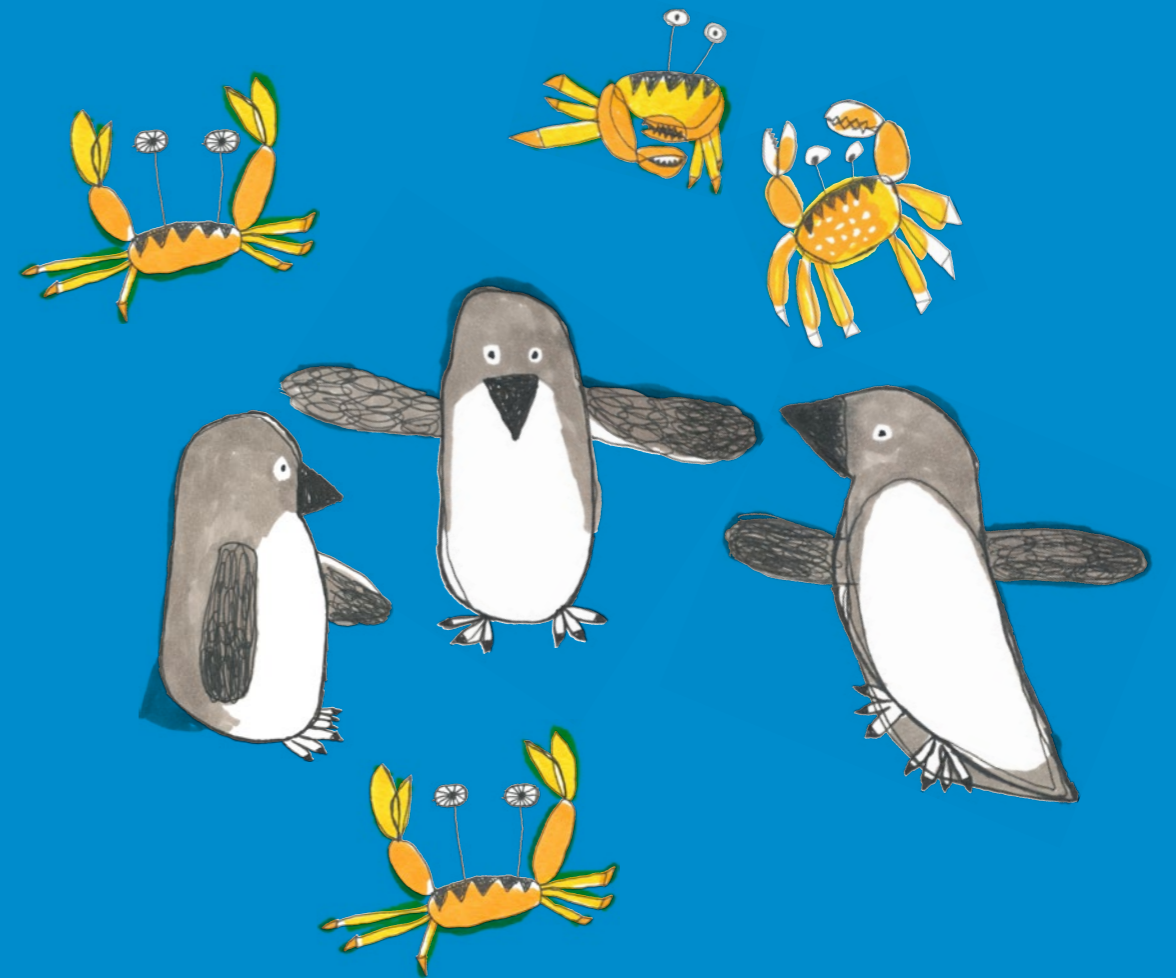


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## SECTION 1 Overview



## The RCH Immunisation Service

The Royal Children's Hospital (RCH) Immunisation Service is a small cohesive medical and nursing team, embedded within the Department of General Medicine. Over the past two years, there have been many challenges for those working in immunisation. Efforts to achieve targeted levels of immunisation coverage, has seen the implementation of new government legislation. The 'No job, no pay' Federal legislation affects payments of Family Tax Benefit Part A supplement and Child Care benefits, whilst the State Government 'No job, no play' legislation affects child care and kindergarten enrolments for non-immunised children. For over a decade, the immunisation service at the RCH has been an effective model of opportunistic immunisation, as well as demonstrating excellent communication strategies to assist parental decision-making about vaccination. The drop-in centre has continued to increase in service provision, with 32,020 vaccines administered in 2014-16 compared to 28,685 in the previous report. The telephone advice line has also increased providing assistance in situations where parents and providers are seeking verbal advice on immunisation.

Whilst based within the RCH, the Immunisation Service has a broad reach within the Melbourne Children's campus, including; a clinical role across multiple RCH departments, Research teams within the MCRI and affiliations with the University of Melbourne. The RCH Immunisation Service at the RCH has core funding through a partnership with the Victorian

Department of Health - Immunisation section. The RCH Immunisation Service also has affiliations with Surveillance of Adverse Events Following Vaccination In the Community (SAEFVIC) - based at RCH/MCRI and Monash Health.

The three core clinical services provided by the RCH Immunisation Service continue to be;

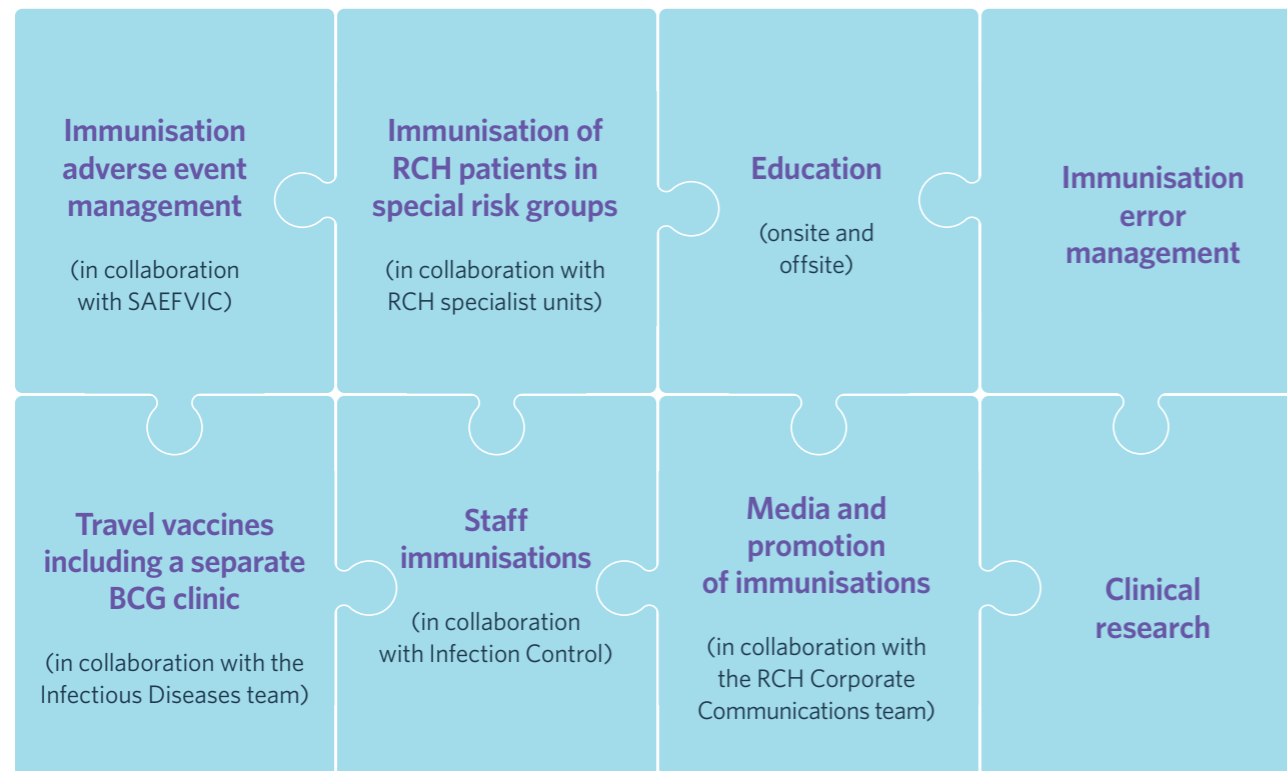
- The drop-in centre
- Telephone advice line
- Immunisation outpatient clinic (weekly)

Our activities also include:

- Education
  - Across all of the campus; medical students; paediatric trainees; nurses; clinicians
- Research
  - A strong clinical research team including special risk groups; vaccine safety; vaccine hesitancy and vaccine trials
  - Epidemiological and clinical trial studies in current and potentially new vaccine preventable diseases

The RCH Immunisation Service continues to lead the way nationally. In 2015, Immunisation teams from the Women's and Children's Hospital, South Australia, Westmead hospital, Sydney and Lady Cilento Children's Hospital, Queensland visited the RCH to learn about the service model in assisting them to develop similar services in their respective hospitals.

### Additional services provided by the RCH Immunisation Service



This report provides a detailed account of the Immunisation service's performance over the 2014-16 financial years and is designed to demonstrate the activities undertaken by the team of dedicated staff involved in immunisation at the RCH. The strong relationships we have built with our patients, families, stakeholders and community is important to us and is vital to our continued success.

## Immunisation Service Reports 2014-16

This document is a service activity report over two years (1 July 2014 - 30 June 2016).

It highlights the core service activity as well as additional immunisation programs undertaken by the RCH Immunisation Service team.

## Key highlights

### Be Positive

Be Positive (B+) is a way of finding out more about the RCH. The Creative Studio and Educational Play Therapy departments at the RCH produce video clips to help children and families learn and understand more about the hospital, and what happens at the RCH. There are video clips that demonstrate the different people that look after patients during their stay, whilst learning about the technology that helps patients get better, and discover what makes the RCH a great hospital.

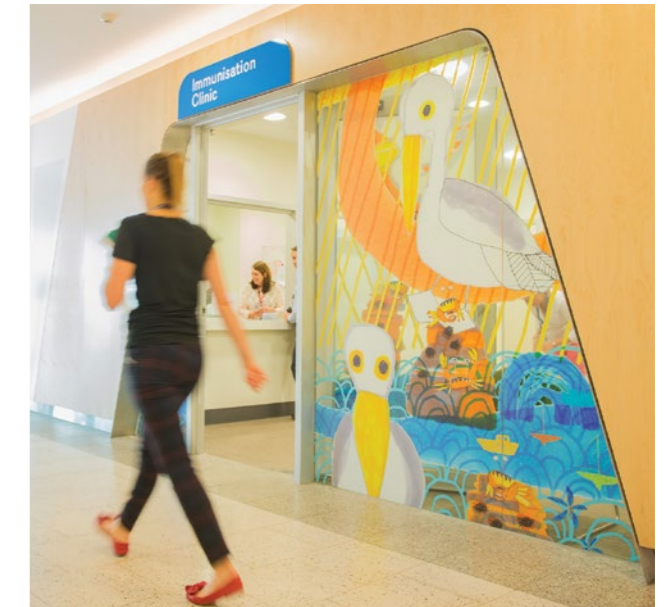


The RCH Immunisation Service at the RCH developed a video about coming to the Immunisation clinic, where a patient (Jai - not his real name) visited to receive his influenza vaccine. It is hoped that this video will better prepare children and alleviate anxieties about being immunised. The video is located at [www.rch.org.au/be-positive](http://www.rch.org.au/be-positive)

In addition to the Be Positive project, the RCH Immunisation team also been very proactive in developing guideline and management strategies for needle phobia. This includes appropriate sedation for children and adolescents with autistic spectrum disorder.

## RCH Immunisation Drop-in Centre nursing restructure

Following an informal review of the immunisation nursing structure undertaken by the Nurse Unit Manager (NUM) in conjunction with the Executive Director, Nursing Services a restructure was undertaken. Based on the nurses and midwives (Victorian Public Sector) Enterprise Agreement 2012-16 and the RCH Nursing Domains of Practice, the expectations of immunisation nurses in regards to care, education and research align more closely with the descriptors of a Grade 3B Clinical Nurse Coordinator rather than those of an Associate Nurse Unit Manager (ANUM).



Additionally, it was also recognised that in order to support safe, high quality immunisation services, immunisation nurses require continuous educational support and a high level of communication and collaboration with the NUM and each other. Subsequently, it was identified that such requirements of the Immunisation nurses and service efficiencies were negatively impacted on by the engagement of employees in the service on small time FTE fractions.

Therefore, the changes implemented were that all ANUM roles ceased, with new roles implemented of a Clinical Nurse Co-ordinator - Grade 3B classification. A minimum 0.4 FTE Fixed-term positions were offered to existing staff as well as a 0.6 FTE ongoing position.



Following the consultation period and expressions of interest, six staff left the immunisation service and two new nursing staff members were appointed to the team.

### Electronic Medical Record

In April 2014, the Victorian government agreed to partner with the RCH, providing half of the \$48 million dollars to support the rollout of an Electronic Medical Record (EMR). Following a tender process, the US-based firm Epic was appointed to deliver the EMR. Epic is a world leader in EMR technology and the RCH is the first hospital in Australia to adopt the Epic system, putting us at the forefront of EMR delivery in Australia and internationally. The project was planned to be designed, built and implemented over two years.

In December 2014, the immunisation team began initial discussions with the EMR team. The purpose of this first meeting was to discuss and understand how the immunisation service functions in terms of workflows, in particular the drop-in patients, outpatient and inpatients. This provided impetus to begin the design phase of building the EMR, which began in January 2015, with meetings to discuss the list of vaccines required, as well as the list of outpatient clinics

provided by the Immunisation service and the clinicians involved in these clinics. In April 2015, Sonja began working on the department analysis workbook for Immunisation, to assist the scheduling team in designing the workflows for the drop-in centre. The following month, Sonja again met with the Ambulatory team from EPIC to discuss the Immunisation centre configuration, including building functionality to ensure that enough data is captured for reporting purposes.

One year after the initial meeting, in December 2016 the Immunisation nursing staff got the opportunity to test drive the new EMR, to assist the Epic team in identifying any issues. This was beneficial for the team as they had not yet seen the functionalities of the new technology. From February 2016, the Epic team began attending the Immunisation monthly meetings to provide further updates and demonstrations of the EMR prior to the Go Live date of 30 April 2016. It was during this lead-up time, that the Immunisation nursing and administrative staff, had to record over 32,000 hospital UR numbers into the current ImPS system to facilitate a data exchange, ensuring that all vaccines provided by the drop-in centre would be recorded into the patient's EMR.

From 1 April 2016, the drop in centre staff were provided access to the live system to begin entering immunisation histories for patients. This enabled staff to familiarise themselves with the EMR. In March, the immunisation nursing, medical and administrative staff began their EMR training, with Sonja Elia and Jessica Elia nominated as super users to support staff during training as well as during Go Live. All outpatient clinics were reduced for the month of May, to alleviate any issues/impact of the EMR implementation.



On 30 April 2016, the RCH went live with the new EMR and the Immunisation service began using it on Monday 2 May. Everyone was enthusiastic and there were some early issues identified. Some these were easily resolved at the time, and some have been logged as optimisation areas for future, as they don't directly impact on patient care. Essentially, the EMR is fantastic and useful in capturing a lot more data than our previous systems and has improved communication with broader hospital staff about the immunisation status of RCH patients.

### Further funding of immunisation services at the RCH

Sonja Elia and Nigel Crawford put together a business case for future funding of the RCH Immunisation Service. The previous agreement of funding arrangements in 2010, was set to expire on 30 June 2015. The business case application was successful, with future financial support of the inpatient immunisation work, the dedicated BCG vaccination clinics, as well as some monies for annual Clinical Vaccinology Updates. There was also an increase in administrative support, from 0.6 FTE to 1.0 FTE.



## SECTION 2

# Report on performance

### Staff

#### Medical

Nigel Crawford  
(Medical lead)

Teresa Lazzaro

Margie Danchin

Kirsten Perrett

Wonie Uahwatasakul  
(ceased work in the clinic  
in late 2015)

Daniel Golshevsky  
(commenced with service  
in 2016)

#### Nursing

Sonja Elia  
(Nurse unit manager)

Rebecca Feore

Narelle Jenkins

Nadine Henare

Phillippa Van Der Linden

Vicki Wall

**Past**

Kate Wall

Melanie Addison

Robin Cavanagh

Melissa Dallinger

Peta Kilsby

Melissa Nesbitt

Rachael McGuire

Kirsten Mitchell

Kerryn Williams

Lucy Lam

Skye Miller

Michelle McCarthy

Sigrid Pitkin

Megan Carpenter

#### Administration

Jessica Elia

Jo Gleeson

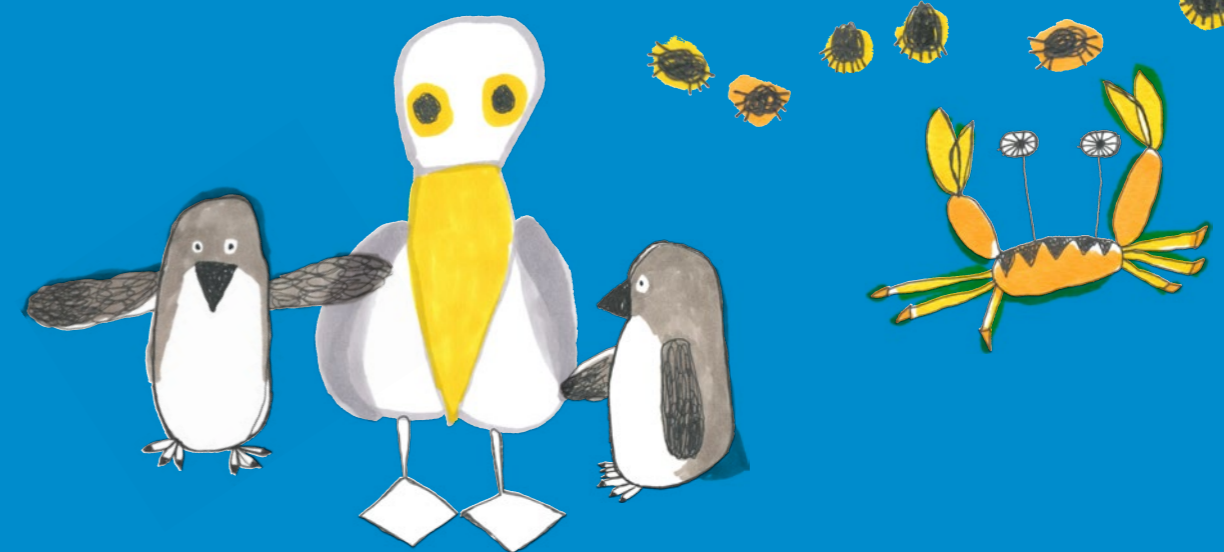
#### Past

Dave Hannon

Julie Bond

#### Volunteer

Sandrine Fernando



# A. Core service activity

## Drop-in centre

The philosophy of the drop-in centre at the RCH is to close the gaps in accessing life-saving vaccines. Approximately one quarter of RCH patients are due or overdue for immunisations, and this is significant given that most of these children are in special risk groups. Every health service presentation should be considered an opportunity to ensure that children are immunised. The RCH Immunisation Drop-in Centre, located on the main street of the hospital, in a high profile location ensures that immunisation is easily accessible.

Improvements to the drop-in centre occurred at the end of 2015, with the exit bay undergoing physical changes yet again. It is now fully converted into a third treatment room and has capacity for the NUM to use as an office. This extra treatment area has helped dramatically with workflow, particularly in March–May during the busy influenza season.

## Overall activity

In 2014–15, 8,138 patients, siblings and parents were opportunistically vaccinated at the RCH Immunisation Drop-in Centre and in 2015–16, this increased to 9,399 patients and their family members. This represents an increase of 15% year to year. **Figure 1** highlights the service activity over the last ten years.

Figure 1: Patients immunised at the Drop-in Centre by 12-month period

### Immunisation service activity



The drop-in centre is open five days per week from 9am to 4.30pm and is a welcoming place that increases awareness and opportunities for immunisation, as well as allowing visitors to seek expert immunisation advice. The activity demonstrated above, includes drop-in patients, siblings and/or parents of the patient as well as outpatients directed to the centre. If the current inpatients are well enough, they too can drop in to the Centre or the Immunisation nursing staff attend the ward and provide the relevant immunisations. **Figure 2** (on the following page) demonstrates an overview of the source of patients receiving immunisations at the drop-in centre.

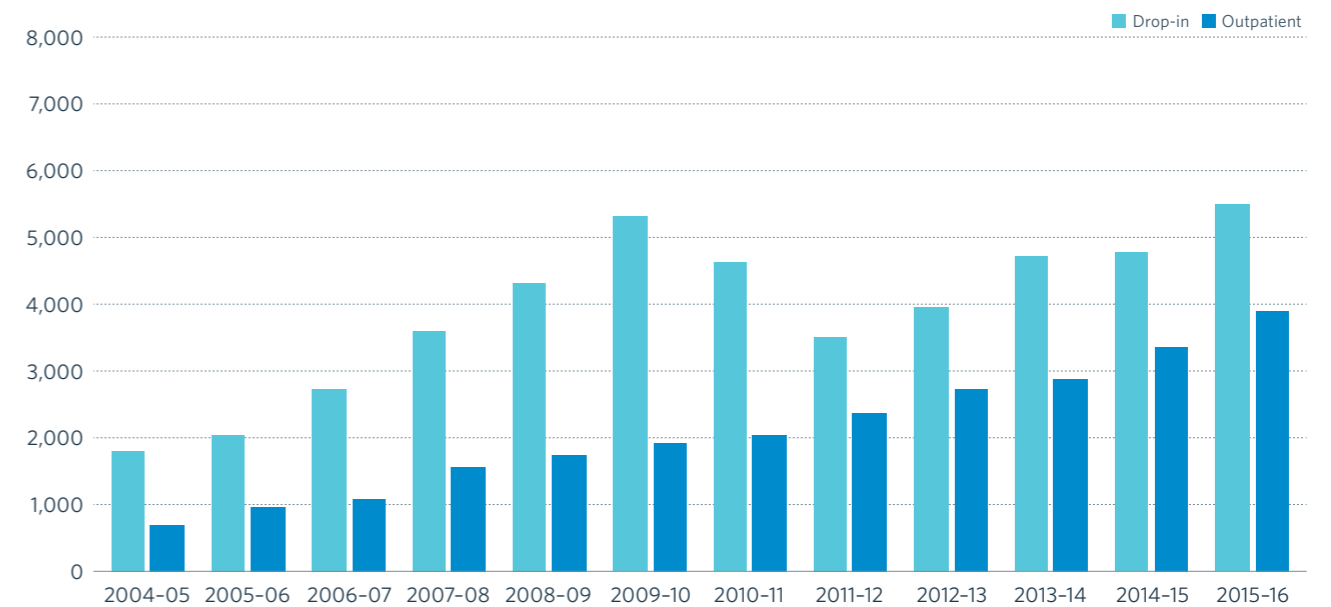
## Outpatient clinics

For patients who would like to see a Specialist paediatrician and have a more detailed discussion pertaining to immunisation, an appointment can be made in the weekly Immunisation Outpatient clinic. This Tuesday morning clinic has five paediatricians, Nigel Crawford, Teresa Lazzaro, Wonie Uahwatanasakul (replaced by Daniel Golshevsky in 2016), Kirsten Perrett and Margie Danchin and combines SAEFVIC and the RCH Immunisation Clinic.

There are a range of concerns that families have regarding immunisation, and some of these include special risk patients, catch-up immunisations, vaccine hesitancy as well as immunisations for patients following a previous immunisation adverse event.

Figure 2: Patients immunised at the drop-in centre by 12-month period: non-outpatient drop-in patients vs. outpatients

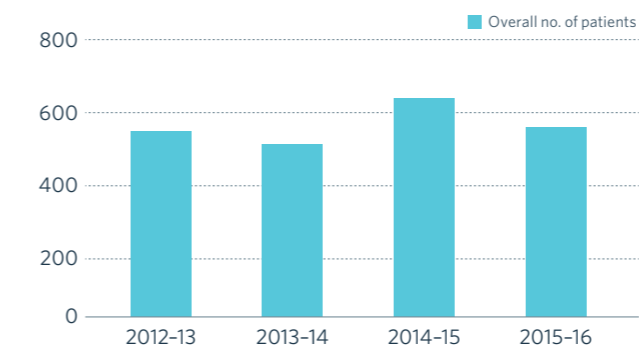
### Immunisation service activity



The clinic continues to be an important resource for internal and external healthcare professionals, with the number of appointments remaining consistent over the reporting periods. The overall number of patients seen in the RCH Immunisation clinic is detailed in **Figure 3**.

Figure 3: Number of clinic patients\* by year  
\*excludes BCG clinic patients (see separate summary)

### Immunisation clinic activity



## Telehealth

For families who live in rural or regional Victoria, or interstate, a consultation with the RCH Immunisation paediatricians by video can be a more suitable option. Using a computer, the patient can connect online to the RCH doctor, whilst attending a clinic appointment with their local GP. The advantages are less travel time, less disruption to life and also involving the local healthcare professional into the immunisation plan.

In 2015 there were 17 Telehealth immunisation consultations, and up to June 2016 there have been nine.



## Additional immunisation consultations

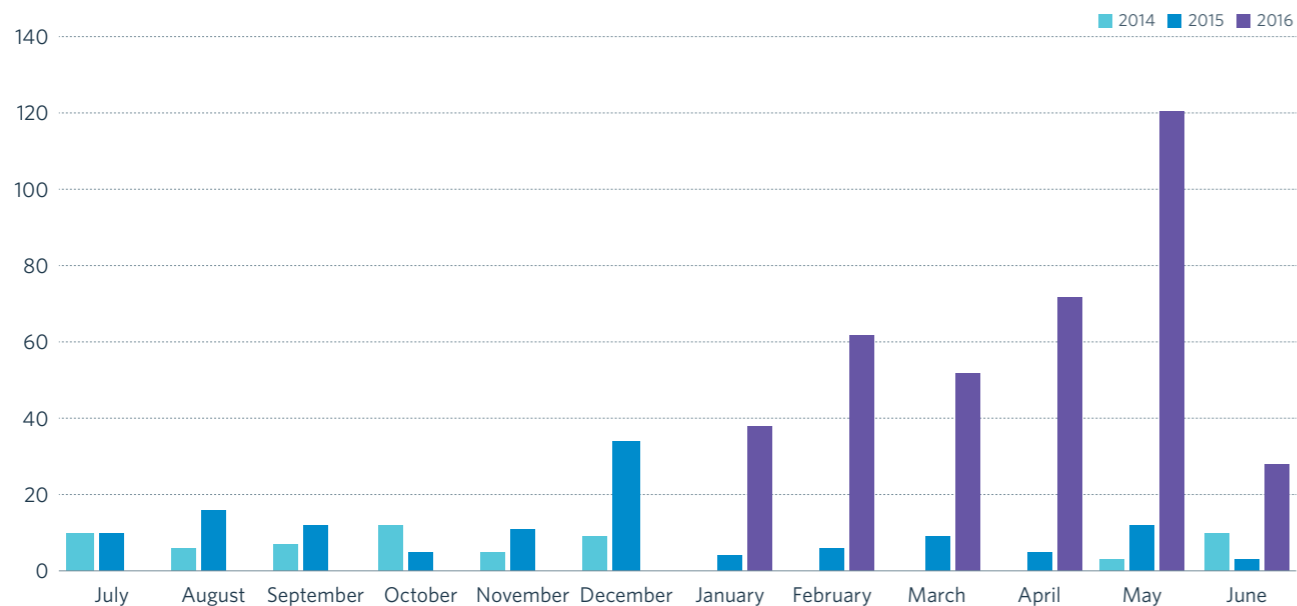
It is difficult to capture all the work that the Immunisation service provides. There is much more to the service than just the administration of vaccines. The immunisation nurses provide expert advice on a range of topics, including:

- individualised immunisation plan in patients with complex medical problems – special risk patients
- enquiries about new vaccines (e.g. Meningococcal B vaccine)
- enquiries about non-scheduled vaccines (e.g. influenza vaccine, parent pertussis vaccine, BCG vaccine)
- parents/medical students/nursing staff seeking immunisation resources
- immunisation adverse event advice and reporting
- incomplete Australian Childhood Immunisation Register (ACIR) data requiring updating

Since the introduction of the new 'No jab, no pay' Federal legislation and the State Government's 'No jab, no play' legislation, the Immunisation service saw an increase in the provision of catch up immunisations of overseas born patients and patients with incomplete immunisation histories. This increase was not only families presenting to the drop-in centre, but also providing advice to GP's. See **Figure 4** below which demonstrates the number of catch-up plans sent to GP's.

Figure 4: Number of Catch up plans sent to GP's by year

### Catch up plans sent to GP



## Telephone advice line

1300 882 924 (option 2)  
Direct (03) 9345 6599

Telephone consulting continues to be an important part of the RCH Immunisation Service. There continues to be an increase every month, year on year and in fact more telephone calls are answered than patients immunised. The telephone advice line is successful because it provides access to immunisation information for families allowing them to obtain advice 'on-the-go' as well as meet consumer demand in times of vaccine preventable disease outbreaks, such as measles and pertussis.

Over the reporting period the telephone advice line has substantially increased. Since the service received an increase in funding in 2010, the telephone calls have increased by 35%. Majority of calls are received by parents, followed by immunisation providers, RCH hospital staff as well as other community based organisations. There were 8,877 telephone advice calls documented at the drop-in centre in 2014-15 and 9,942 calls recorded over the last 12 months.

The telephone advice line is managed by the Immunisation Nursing staff however, when there is a particularly complex enquiry, the nursing staff can refer the call to the medical staff for a prompt reply to the caller. The advice line is answered between 9am-5pm on working weekdays of the year. This is shown in **Figure 5** which does not reflect the possible demand for immunisation telephone advice it is only a reflection of calls answered.

Figure 5: Immunisation advice calls at the drop-in centre by 12-month period

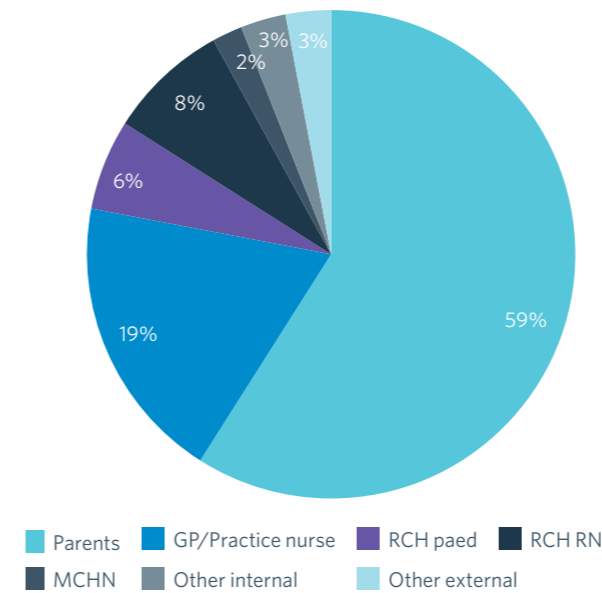
### Immunisation telephone advice



Over the past 12 months information was collected on the caller to the telephone advice line (**Figure 6**).

Figure 6: Telephone advice calls at the drop-in centre by caller 1 July 2014 - 30 June 2016

### Telephone advice - caller type



## Inpatient immunisations

The RCH Immunisation Service has the opportunity to check immunisation status upon admission and provide opportunistic vaccines and/or bring the Australian Childhood Immunisation Register (ACIR) up-to-date. This is particularly important as

patients with medical conditions are at higher risk of morbidity and mortality from vaccine preventable diseases.

Once inpatients are identified as due or overdue, the immunisation service nurses liaise with the ward based nurse co-ordinators regarding administration of immunisations and/or the need for parental education related to immunisation. If vaccinating the child immediately is contraindicated, the Immunisation Team develop an immunisation plan to support vaccination at a later date, either within the RCH or via the child's general practitioner (GP). The Immunisation service review these children, by checking the ACIR one month post-discharge to determine whether vaccinations were completed and that their ACIR status was up-to-date.

Key to the success of the project is the close liaison between the RCH Immunisation Service staff and ward-based nursing staff. Ward staff are heavily involved in talking to the identified families about vaccinations, and providing the required immunisation. Monthly meetings continue to be held to support this collaboration. The RCH Immunisation Service staff also conduct education sessions and provide support and training for ward nurses and pharmacists regarding childhood immunisation and vaccine storage.

The move to the electronic medical record (EMR) at the RCH has the ability to track patients in need of vaccines, identify patients who are delayed and promote interdisciplinary communication amongst personnel involved in the vaccination process. The incorporation of an EMR at the RCH linked with the Australian Immunisation Register (AIR) has the potential to significantly improve in-patient immunisations even further.



Figure 7 and Figure 8 below demonstrates the month by month success of the program.

Figure 7: Inpatients identified as due or overdue for immunisation and consequently vaccinated 1 July 2015 - 30 June 2016

Immunisation service activity

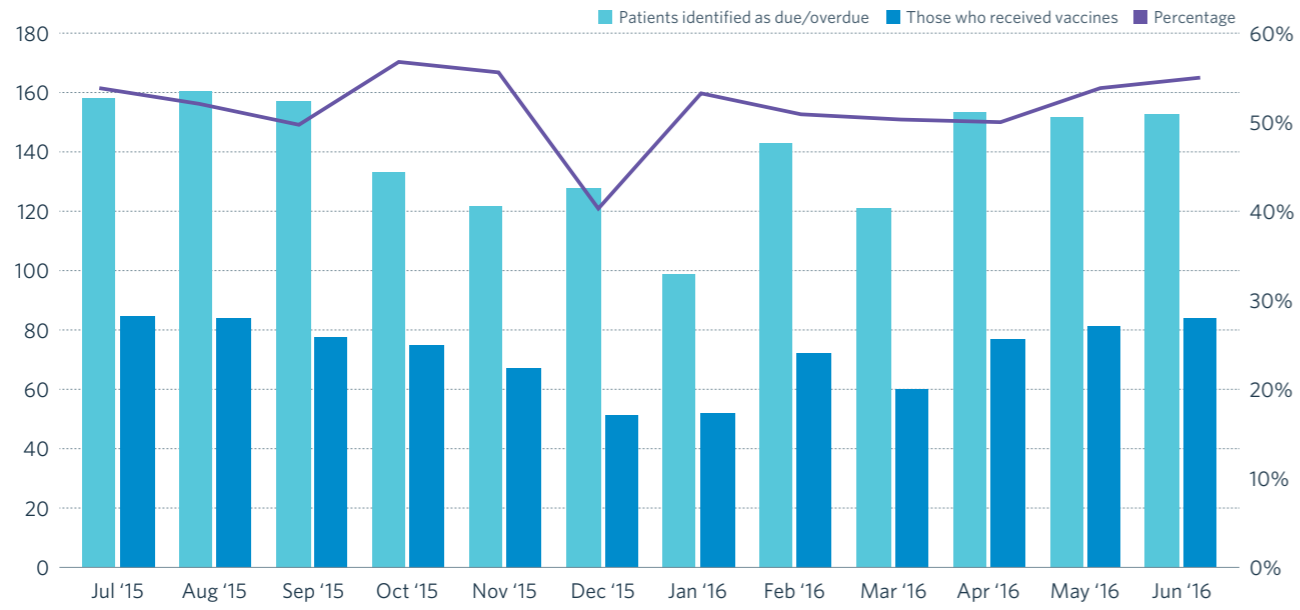
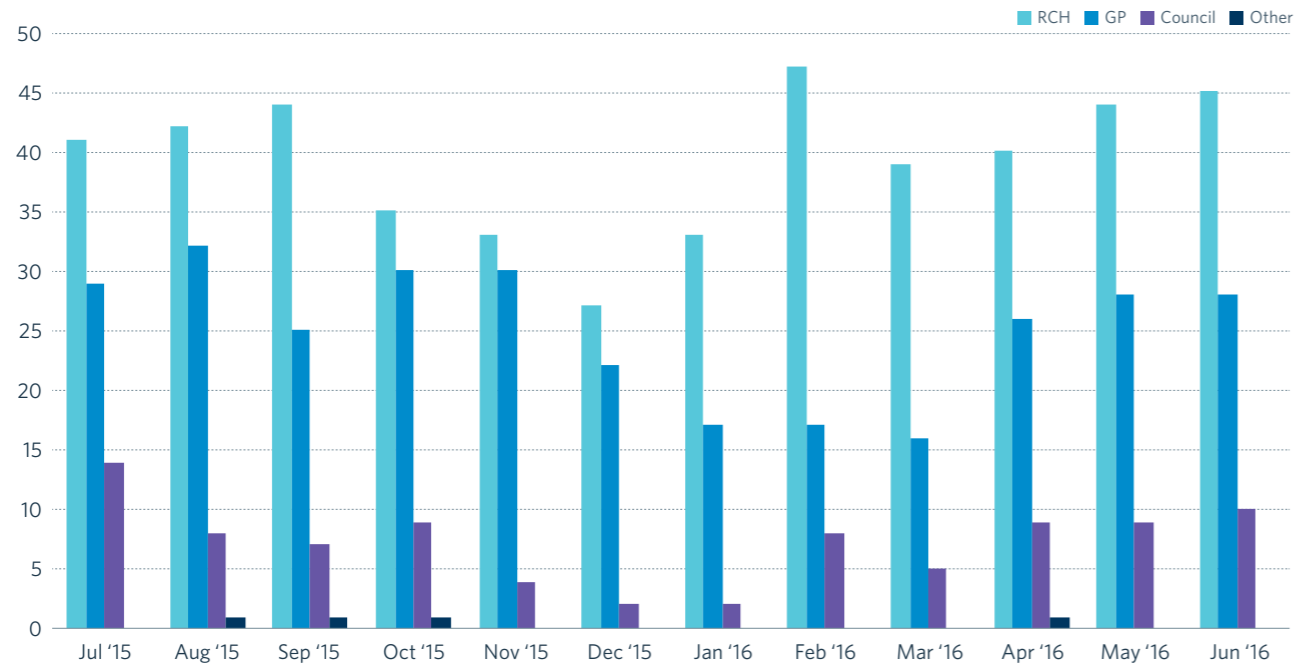


Figure 8: Inpatients vaccinated by site 1 July 2015 - 30 June 2016



## Elective admissions

Over the past two years, there has been a substantial increase in presentations to the weekly Immunisation clinic of children with needle phobia. Needle phobia is an extreme fear of medical procedures involving injections or needles. For most people, it can develop around age four or five following a negative immunisation experience. It has been reported in the literature that at least 10–24% of the adult population are needle phobic. Persons with needle phobia typically avoid medical care, including immunisations.

The practice of managing this at the RCH is to provide reassurance and education, then progressing to relaxation techniques and the use of topical anaesthetic creams. On occasion, nitrous oxide gas and/or Midazolam (a benzodiazepine medication) is required to provide sedation during the procedure. These patients require admission to the Day Medical Unit.

Over the reporting period, 133 patients have been admitted to the Day Medical Unit for vaccines under sedation. These have included patients with needle phobia, as well as severely autistic patients with a fear of medical procedures. Due to the difficulty in employing restrictive measures, such as sedation for individuals with autism, Margie Danchin and Sonja Elia are working with the procedural pain management team at the RCH to develop some clearer guidelines as well as trialling other sedative medication options to avoid any potential safety risks to the patients and staff.

## Immunisations for newly arrived immigrants

The immigrant health service includes a weekly outpatient clinic (Mondays 1–5pm at desk A5), patient consultations, education for service providers and work in policy development. The service is supported by the Victorian Government Department of Health, including support for the refugee health fellow program.

The clinic provides a multidisciplinary assessment service for recently arrived children of a refugee background, including medical and education/developmental assessment, oral health assessment and health promotion, immunisations, Mantoux testing and administration of Vitamin D as needed. Asylum seeker children and children in community or held detention are also seen. Post-arrival health screening can be provided if required.

The RCH Immunisation Service assists with the immunisation and Mantoux testing of the patients attending the Immigrant health service. Prior to the patient's clinic appointment, the Immunisation nurses perform an ACIR check on all immigrant health patients to assist with further catch-up vaccines required and to reduce immunisation errors at the time of the

appointment. The immunisation service collaborate with the immigrant health team in the regular updating of catch-up immunisation guidelines ([www.rch.org.au/immigranthealth/clinical/Catchup\\_immunisation\\_in\\_refugees](http://www.rch.org.au/immigranthealth/clinical/Catchup_immunisation_in_refugees))

The immunisation nurses have provided Mantoux tests and subsequent reading for many of these patients. **Figure 9** outlines the total number of Mantoux tests performed by the RCH Immunisation Service nurses. The immunisation nurses assist in facilitating chest X-rays, medical review and explanation with the interpreter if the Mantoux test is positive.

## Influenza vaccine

The Trivalent influenza vaccine was not provided under the National Immunisation Program in 2016, with the Victorian government funding certain quadrivalent vaccines for eligible groups. Due to the significant change in vaccine strains, there was an issue with stock delivery and therefore a late commencement of influenza vaccine provision. From 1st April 2016, over 3,100 opportunistic influenza vaccines were administered at the drop-in centre (**Figure 10**). The administration of annual influenza immunisation is nationally recommended for children with many underlying medical conditions who are at increased risk of morbidity and mortality from influenza disease. The RCH Immunisation Service ensures that information is shared throughout the hospital to help facilitate special risk group patients to not miss out on the annual influenza vaccine. In particular, the Immunisation service worked with the Developmental Medicine department in 2014, to ensure that children with developmental disability were immunised with influenza vaccine. The RCH Immunisation Service recorded 66 patients under the Developmental Medicine department, having received the influenza vaccine in 2013. Following the distribution of a reminder letter to families, a total of 133 patients from Developmental Medicine were vaccinated with the influenza vaccine in 2014. This was a 100% improvement on the previous year.

The immunisation service recommends influenza vaccine for all parents and siblings of eligible patients, however they are required to purchase the vaccine and have it administered at the drop-in centre. The data presented in Figure 10 includes patients, parents and siblings provided influenza vaccine at the drop-in centre. RCH patients represent 56% of those receiving opportunistic influenza vaccines at the drop-in centre. The remaining 44% are parents and siblings of RCH patients.

With surveillance systems in place to monitor adverse events following immunisation with influenza vaccine in children under five years of age, it is important that the RCH Immunisation Service capture the number of doses of influenza vaccine by age group. **Figure 11** demonstrates this data.

Figure 9: Mantoux tests administered by the RCH Immunisation Service by 12-month period

	2008-9	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Mantoux tests	207	289	343	206	207	269	332	243

Figure 10: Influenza immunisations at the drop-in centre by month and year

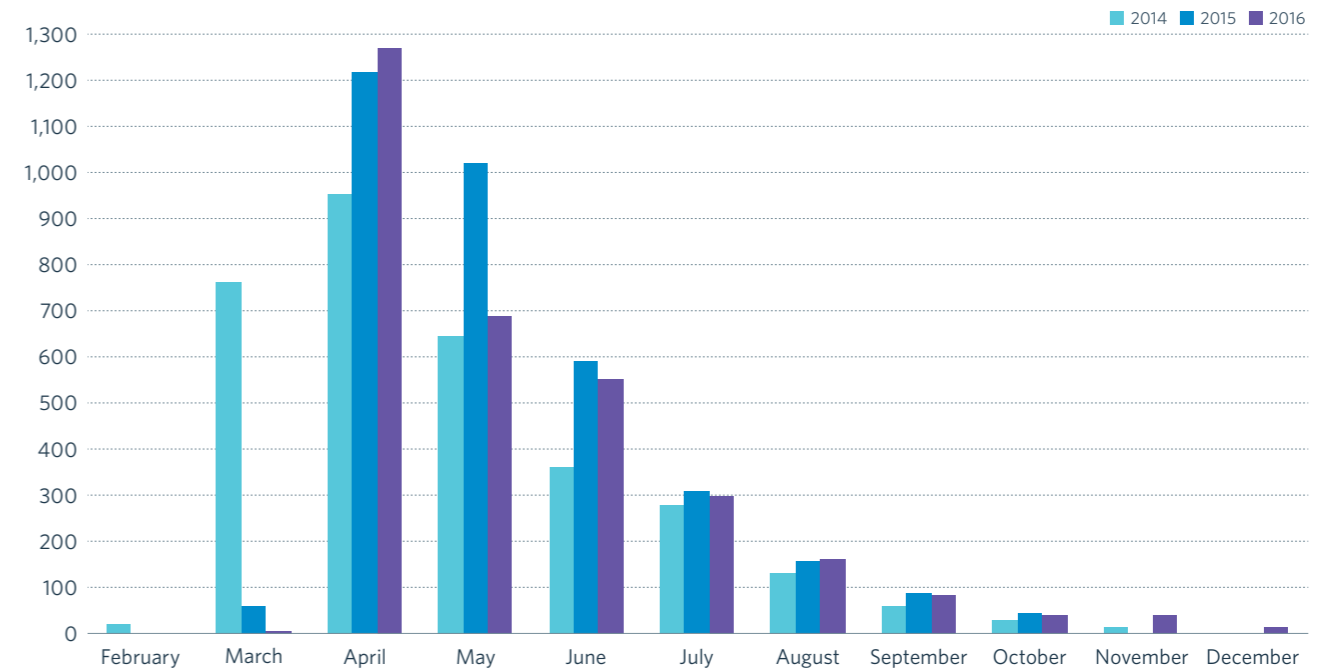


Figure 11: Influenza vaccine doses by age group

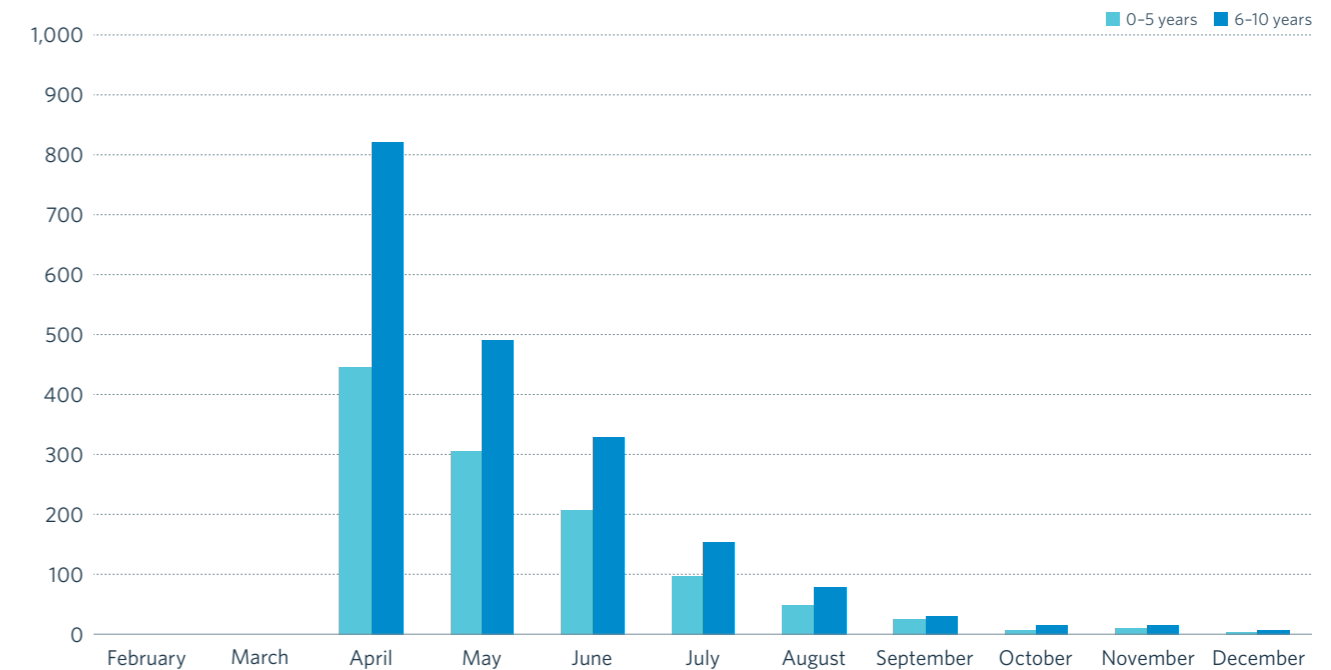
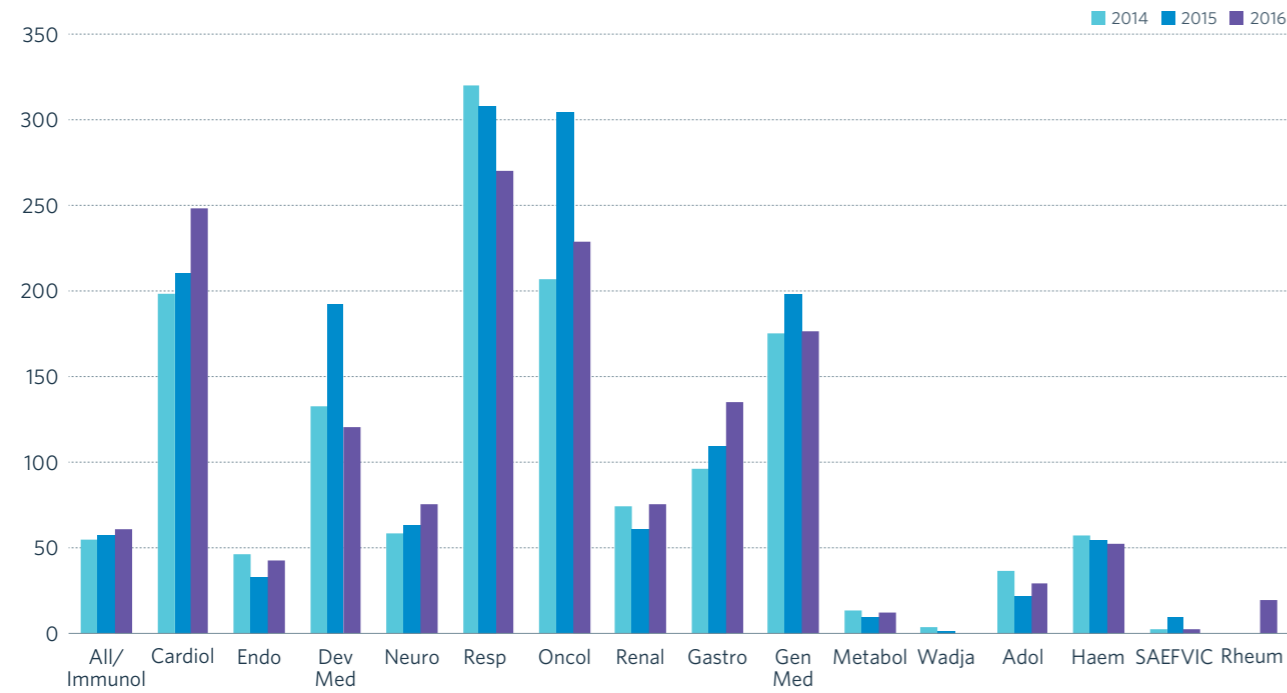


Figure 12: Total number of influenza vaccines (n) by medical department (2014-16)



The RCH patients immunised with influenza vaccine come from a variety of medical departments throughout the hospital. **Figure 12** represents the Influenza vaccine doses according to patient group given the vaccine at the drop-in Centre during the 2014 to 2016 season.

### Staff influenza vaccine

Many quality improvements have been made throughout the last 10 years to achieve a higher rate of staff influenza vaccination. Significantly in the last four years change has contributed to the success of the program which includes but is not limited to;

- Executive support and leadership
- Corporate communication support
- NUM, HOD and Nurse Immuniser engagement
- Increased hours that the vaccine was available to staff in 2016

More than 100 qualified nurse immunisers from 20 different departments come together to work with the Infection Prevention and Control team to offer staff the influenza vaccine. This has allowed easy access to the vaccine at all hours for many RCH shift workers.

Ward based nurses and advanced practice nurses participated in the clinic sessions and offered the vaccine in their department. Nurse immunisers set their own targets, allocated time when possible and worked hard to prioritise vaccinating their colleagues. One nurse immuniser aimed to vaccinate 100 of her colleagues in the first week of the program.

In 2006, 52% of staff received the seasonal influenza vaccine compared to 90% of staff in 2016. This year's rate exceeded the Department of Health and Human Services target of 75% and the state aggregate of 80%.

It was a wonderful experience working as part of a team of nurse immunisers from so many different departments to protect our colleagues against influenza. Nurse Immunisers used their skills to promote the vaccine resulting in an improvement to the program and an outstanding achievement for the RCH. The willingness of Nurse Immunisers to offer their assistance and care for their colleagues across all craft groups was extraordinary.

## (B) Additional immunisation service programs

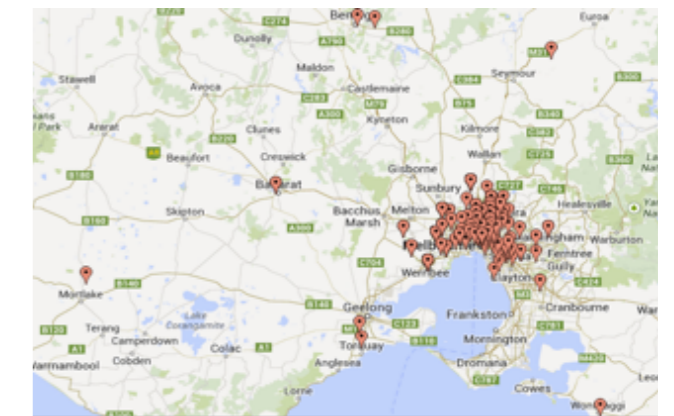
### Bacille Calmette Guerin (BCG) vaccine for children <12 months of age

As discussed under Key Highlights, the RCH Immunisation Service in collaboration with the RCH Infectious Diseases team put together a business case seeking additional funds for a dedicated weekly BCG vaccine clinic. This was a crucial addition to our core activity, as the multi-dose vials and healthcare professional training for BCG vaccine administration was making delivery in Victoria difficult. It was decided that the RCH and Monash Health would be the only sites for DH funded BCG vaccine delivery.

Additional clinics continue to be conducted in 2014-16, with ongoing funding approved up to 30 June 2017. This funding included nursing, administration and medical time to run a weekly RCH BCG clinic. This is undertaken by the Immunisation Team (three clinics per month) and the Infectious Diseases team (one clinic per month).

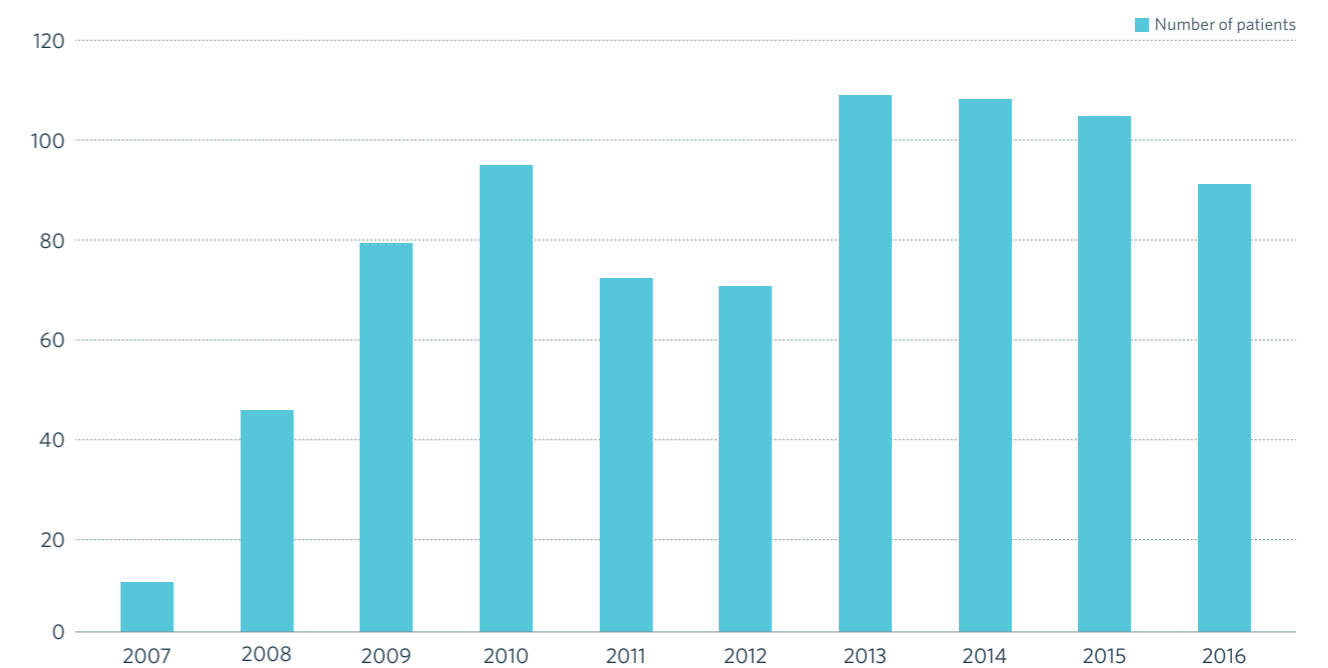
A number of BCG vaccine adverse events following immunisation were detected through this clinic, as our administration staff ensured a pre-clinic questionnaire was completed prior to the clinic and the family also contacted 6-months later regarding any possible reactions. The BCG vaccine is administered to children from across Melbourne and parts of regional Victoria (see **Figure 13**).

Figure 13: Postcodes RCH BCG clinic attendees



A major issue with BCG vaccine, was the loss of supply in late 2015. This had been a recurring problem over the past few years, and was a global problem. It affected countries that provide neonatal BCG doses and an international response was activated by UNICEF and the WHO, RCH and SAEFVIC assisted in securing supply for our patients through an urgent Human Research Ethics Committee (HREC) application to RCH Ethics, using a new BCG-10 Polish product, accessed under the authorised prescriber scheme. We have been one of the few jurisdictions to provide this important vaccine in 2015-16.

Figure 14: Number of patients provided monthly RSV Immunoglobulin by the RCH Immunisation Service





### RSV Immunoglobulin prophylaxis for cardiac and respiratory patients

The RCH Immunisation Service has provided Respiratory Syncytial Virus (RSV) Immunoglobulin to high-risk infants for the past 10 years (see **Figure 14** on previous page). RSV is the most common cause of respiratory infections in babies and young children. In premature infants, as well as cardiac and chronic lung disease patients, RSV infection can lead to other more serious illnesses. Infection can last about a week, but some cases may last several weeks. For at-risk infants, an admission to Intensive Care is likely. To prevent serious RSV-related complications, high-risk infants can receive monthly RSV immunoglobulin, which provides passive immunity against RSV infections. This has been shown to decrease the incidence of RSV hospitalisation and the number of hospital days.

The program commenced on the 30 April 2016. In total, 91 patients were placed on the list of eligible patients. 83 of these patients were Cardiology, whilst the other patients were under other risk categories; Pre-term infants under Neonatology (2), Respiratory (2), General Medicine (1), Immunology (1) and Neurology (2). Patients were booked in to the RCH Immunisation Drop-in Centre (217 doses) or were immunised on the ward if a current inpatient (93 doses). **Figure 15** indicates the number of doses administered, which highlights that some patients did not receive all of the recommended doses. This can be due to the timing of when they commenced the program.

**Figure 15:** Number of patients receiving each of the recommended RSV immunoglobulin doses 2016

	1st dose	2nd dose	3rd dose	4th dose	5th dose
<b>No. of patients</b>	91	76	61	47	35

With the move to the EMR on the same day as the start of the RSV Immunoglobulin program, there were many challenges. However, these issues improved over the course of the program. The RCH Immunisation Service nursing staff educated families with the use of the RSV handouts, informing them about RSV disease and how the RSV immunoglobulin program works. This group of eligible patients are at increased risk of vaccine preventable diseases, and therefore the importance of routine scheduled immunisations (2, 4, 6, and 12 months) and giving these on time is reinforced with the families.

In addition to the National Immunisation Program list of vaccines, these patients require extra vaccines (i.e two doses of influenza vaccine and an extra conjugate pneumococcal vaccine at one year of age). The parents of infants with

cardiac problems are also recommended to receive influenza as well as pertussis booster vaccines. The patients and their families were provided immunisation advice and catch-up vaccines during RSV visits as well as the RSV Immunoglobulin doses (**Figure 16**).

**Figure 16:** Opportunistic immunisations provided during RSV immunoglobulin visits [2016]

Immunisations	No. of patients/family members immunised
2 month	7
4 month	11
6 month	9
12 month	9
18 month	1
Extra 13vPCV	7
Patient influenza vaccine	48
Bexsero®	2
Menveo®	2
Parent and sibling influenza vaccine	5
Parent dTpa vaccine	1
Catch up vaccines*	2
<b>Total patients/family members administered vaccines at the time of RSV immunoglobulin visits</b>	<b>104</b>

\* Rotavirus vaccine (1), Measles, Mumps, Rubella vaccine (1)

The 50 mg vials cost about \$800 each and the 100mg vials cost about \$1,500 each. In 2016, the RCH Immunisation Service saved 59 of the 100mg vials of RSV product and saved 35 vials of the 50mg vials. The total cost saving was estimated to be \$116,500 (**Figure 17**). This was an increased saving of 20% compared to 2015.

Figure 17: RSV vials saved from cohorting patients [2016]

	Vials would have used	Would have cost	Vials actually used	Actually cost
<b>50mg vials</b>	176	\$140,800	141	\$112,800
<b>100mg vials</b>	321	\$481,500	262	\$393,000
<b>Totals</b>		\$622,300		\$505,800

### Special risk patients

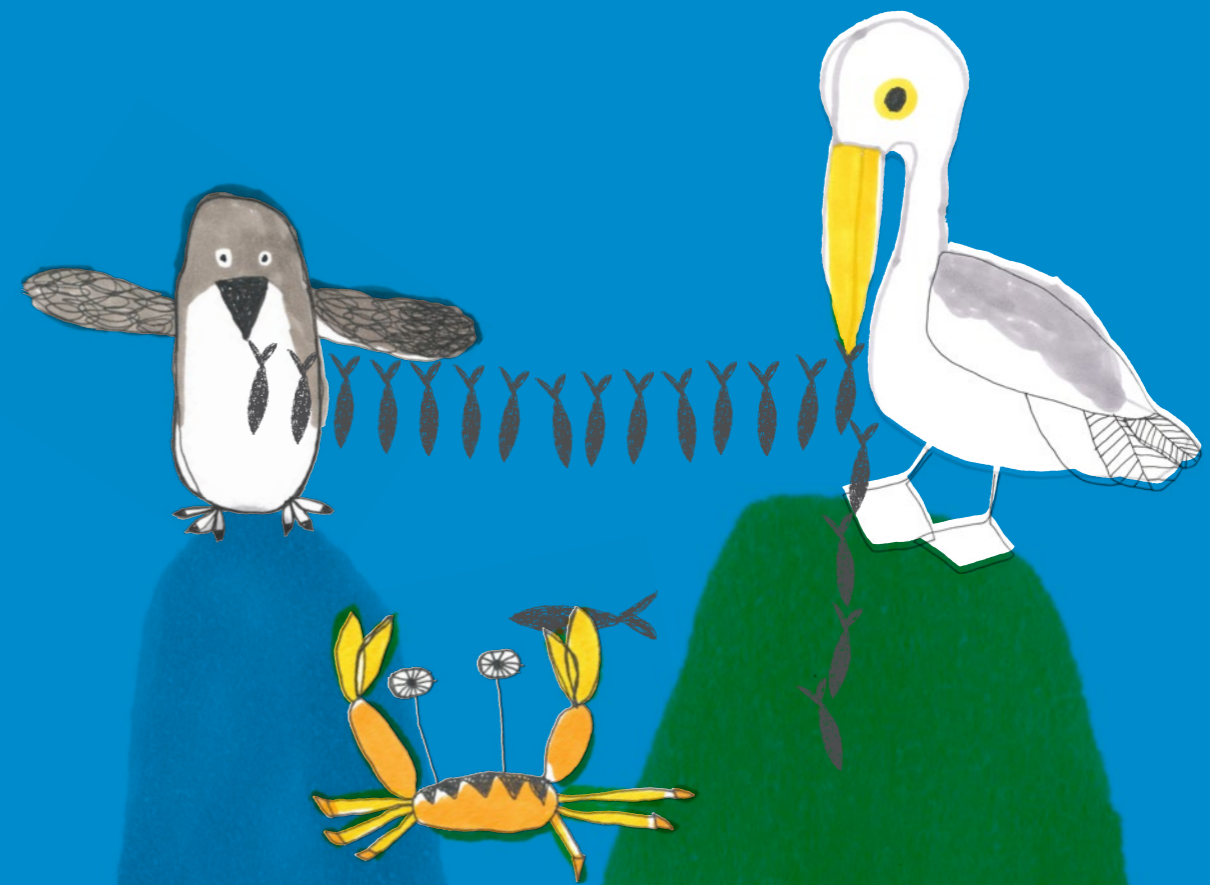
The RCH Immunisation Service continue to develop guidelines for patients at special risk for vaccine preventable diseases. These guidelines were prepared by affiliated immunisation staff and endorsed at a monthly immunisation meeting, held at the RCH. Attendees at this meeting include paediatricians, infectious disease physicians, nurse immunisation specialists, infection control team members and a representative from the Immunisation Section of the Victorian Department of Health. These guidelines are based on the latest available evidence and may be different to the recommendations in the latest edition of the Australian Immunisation Handbook. Some of the recommendations in these guidelines are outside the scope of the National Immunisation Program (NIP).

The special risk guidelines have included updates for the following conditions;

- Solid organ transplant recipient
- Chemotherapy and post haematopoietic stem cell transplant
- Asplenia/hyposplenia
- Pre-term infants
- Inflammatory Bowel Disease (IBD) patients

These guidelines have been placed on our Melbourne Vaccine Education Centre website ([www.mvec.vic.edu.au/immunisation-references/special-risk](http://www.mvec.vic.edu.au/immunisation-references/special-risk)). The additional recommended vaccines have been approved and funded by the RCH Drug Utilisation Committee.

## SECTION 3 Communication and accountability



## Melbourne Vaccine Education Centre



Melbourne  
**VACCINE  
EDUCATION  
Centre**

The Melbourne Vaccine Education Centre (MVEC) website ([www.mvec.vic.edu.au](http://www.mvec.vic.edu.au)) continues to progress with numerous guidelines and resources added to the site. A highlight has been updating our immunisation app (VicVax [www.rch.org.au/rch/apps/vicvax/Victorian\\_Immunisation\\_Schedule\\_app](http://www.rch.org.au/rch/apps/vicvax/Victorian_Immunisation_Schedule_app)) detailing the latest schedule in Victoria and includes recommendations for special risk groups. This is the place we direct RCH staff regarding our current immunisation schedule, aiming to minimise the risk of drug administration errors.

The MVEC site continues to be hosted by the RCH Creative Studio. The aim of MVEC is to provide relevant clinical information based on the latest available evidence, as well as practical tools to assist in education and decision-making around new vaccines. This education initiative is both for healthcare professionals and families and highlights the leadership role the RCH has in Immunisation education at a state and national level. To further enhance the site and improve its utility for RCH patients and families a submission has been made to the RCH Foundation in 2016.

MVEC includes an A to Z of immunisation references, linking to our special risk guidelines (detailed above) and other expert resources such as the Better Health Channel. It has also been used as a site to highlight the RCH and Monash Immunisation service position statements, for example regarding the seasonal influenza vaccine and the new Meningococcal B vaccine (Bexsero) and Meningococcal W containing vaccines.



## Immunisation errors

A medication error is any preventable event that may cause or lead to inappropriate medication use or patient harm while the medication is in the control of the health care professional, patient or consumer. The Immunisation service always strives to ensure that the five rights of medication administration are performed, however due to many contributing factors errors can still occur. Medication errors that do not cause harm because they are intercepted before reaching the patient, is called a potential adverse drug event (ADE). The RCH Immunisation Service reports all errors, including potential ADE to the Victorian Health Incident Management System (VHIMS). By investigating each incident and discussing these at the Monthly Immunisation meeting, we can understand the factors which contribute to vaccine errors and develop strategies to further prevent the errors from re-occurring.

**Figure 18** below demonstrates the actual vaccine errors in 2014-16 by type and **Figure 19** represents the potential ADE by type for the same reporting period.

**Figure 18:** Actual vaccine errors from 1st July 2014 - 30th June 2016 by type

### Actual clinical incidents by type



**Figure 19:** Potential ADE vaccine errors from 1st July 2014 - 30th June 2016 by type

### Potential ADE clinical incidents by type



Over this reporting period we have seen less errors related to the BCG vaccine and this is attributable to the implementation of the Travel Medication Prescription form which was developed by the Infectious Diseases team. With the move to the new Electronic Medical Record in 2016, this has seen the correct doses and brands of vaccines implemented into the prescribing tools. We anticipate that in the next reporting period, the number of vaccine prescribing and administration errors will be even less.

## Monthly meeting

Once a month the RCH Immunisation team meet to conduct discussion about various immunisation issues and this is a great forum for exchanging ideas. This group includes representatives from RCH related departments including: SAEFVIC, Department of General Medicine and the Infectious Diseases Paediatricians and Infection Control. There are also representatives from external immunisation groups including: Immunisation section DH, Vaccine and Immunisation Research Group (VIRGO) and Monash Health Immunisation service.

In 2014, the immunisation service also coordinated a monthly internal business meeting. This allowed us to discuss topical issues and improved communication between the medical and nursing staff. One important outcome has been to allocate physicians and nurses to different special risk groups (e.g. cardiology, wadja, neonates and respiratory medicine). The aim is to improve collaboration between the treating teams and the Immunisation service, with outcomes to be monitored including inpatient vaccine rates and influenza vaccine delivery.

## Feedback on the RCH Immunisation Drop-in Centre

While the immunisation service loves to hear when we're doing a good job, we are aware that there are times when patients and families are unhappy with their experience of hospital service or care. It is important that we are informed of such events as the information provided enables us to improve our services and care. Feedback forms are available in the RCH Immunisation Drop-in Centre and all feedback is treated with the utmost confidentiality.

Over the past two years, we have continued to receive a great deal of informal positive feedback from families. Of the formal feedback provided to the Consumer Liaison Officer, there were three complaints and seven compliments.

## National Immunisation Teleconference

Nigel Crawford, Margie Danchin, Kirsten Perrett and Jim Buttery are members of the Adverse Events Following Immunisation- Clinical Assessment Network [AEFI-CAN]. We received pilot funding in 2014 to support HPV vaccine safety surveillance and published the findings (see publications list).

The network also includes representatives from the National Centre for Immunisation Research and Surveillance (NCIRS) based at the Westmead Children's Hospital (Sydney), Women's and Children's Hospital (Adelaide), Princess Margaret Hospital (Perth) and Royal Children's Hospital (Brisbane). Topics discussed at these teleconferences include immunisation adverse events, immunisation policies, topics of interest as well as advice on complex individual patients seen at the adverse event clinics at each site.

## Victorian Immunisation Advisory Committee

Nigel Crawford, Margie Danchin and Jim Buttery are on the Victorian Immunisation Advisory Committee chaired by Stephen Pellissier, Chief Medical Officer, DHHS Victoria. Participants in the committee represent maternal child health nurses, general practitioners, infectious diseases paediatricians and others. The group meets quarterly and provides an invaluable sharing of information between DHHS and the RCH Immunisation Service. Quarterly data on cases of vaccine preventable diseases provides invaluable local information and highlights areas of target immunisation needs. Immunisation program up-dates provided by the Communicable Disease Control Unit allow the RCH Immunisation Service to be aware of ensuing changes or priorities.

## Australian Technical Advisory Group on Immunisation (ATAGI)

This is the peak advisory committee of the Australian Government on Immunisation issues. Nigel Crawford is an ongoing member (appointed 2014-) with his areas of expertise being special risk groups and vaccine safety.

## Surveillance of Adverse Events Following Vaccination In the Community (SAEFVIC)

The RCH Immunisation Service continues a close working relationship with SAEFVIC. Nigel Crawford, Teresa Lazzaro, Daniel Golshevsky, Kirsten Perrett and Margie Danchin all work in the RCH Immunisation Service which now includes SAEFVIC patient follow-up. It involves partnerships with DHHS, RCH Department of General Medicine, RCH Immunisation Service and the Murdoch Children's Research Institute. The SAEFVIC unit is based at the RCH campus with clinical services also at Monash Health. There have been over 11,000 immunisation adverse event reports to SAEFVIC since commencement in 2007. The SAEFVIC clinic is incorporated into the Tuesday morning RCH Immunisation service clinic, with follow-up vaccines administered in the outpatient treatment rooms or drop-in centre if required. In some instances, patients are admitted to the Day Medical Unit or overnight for vaccination as required.

## Immunisation education

Immunisation education is an important part of the service provided by the RCH Immunisation team of specialist nurses and paediatricians. We are a national leader in Immunisation education, as detailed by our involvement in the National Immunisation Conference and co-ordination of the annual Clinical Vaccinology Update ([www.mvec.vic.edu.au/events](http://www.mvec.vic.edu.au/events)). The CVU has been held one-two times per year since 2012 and is attended by over 250 healthcare professionals. In March 2016, we also held our first Travel Vaccine Update (TVU). These educational activities are linked to our clinical service via the MVEC website.

## PHAA Immunisation Conference - Brisbane June 2016

The two-yearly Public Health Association of Australia (PHAA) National Immunisation conference was held in Brisbane in June 2016. Several RCH and SAEFVIC team members were in attendance at the conference and also a number of oral presentations and posters delivered (see below). We also arranged a visit to Lady Cilento Hospital in Brisbane, to visit the Immunisation team as well as their new Immunisation centre that was under development.





## Education at the RCH

The Tuesday morning weekly education sessions continue at the RCH, with presentations from the various immunisation areas within the hospital. There have been sessions on vaccine safety, pain minimisation, vaccine hesitancy, vaccine research, needle phobia and travel. It is always well attended and gives all staff the opportunity to present and discuss topics of interest. There is also a patient discussion forum following the Tuesday clinic (12:30-1pm).

## RCH nursing and medical immunisation up-dates

### RCH ward nursing immunisation up-dates (12)

- Cardiac Unit (4, Kirsten Mitchell, Sonja Elia)
- Oncology department (2, Sonja Elia)
- Neurology and Gastro unit (3, Rebecca Feore)
- General Medical Unit (2, Phillippa Van Der Linden)
- Neonatal Unit (1, Sonja Elia)

### Clinical teaching for graduate nurses, ward nurses, work experience students (7)

- Throughout the year nurses from within and external to the RCH request to attend and observe at the RCH Immunisation Drop-in Centre to learn about giving vaccines and observe the techniques and communication style of the RCH Immunisation Nurses (4)
- Immunisation update for Graduate nurses (3, Sonja Elia)

### RCH student immunisation teaching sessions (7)

- Paediatric Specialist Program (7, Rachael McGuire, Sonja Elia)

### Clinical mentoring of immunisation nursing students from LaTrobe University (19)

Following successful completion of the LaTrobe University Nurse Immuniser course some nurses complete their clinical mentorship with the RCH Immunisation Service. LaTrobe University approved mentors at the RCH include Rebecca Feore, Vicki Wall, Megan Carpenter, Rachael McGuire, Kate Wall, Kirsten Mitchell and Sonja Elia.

### RCH Medical Staff Immunisation Up-dates

- Vaccination is an obligation not a choice, Campus research and Education week, RCH, October 2015 (Nigel Crawford and Margie Danchin)
- RCH Grand Round (July 2014): Pneumococcal vaccine in Africa, Asia and Australia (Nigel Crawford, Grant McKenzie and Catherine Satzke)

## External education

### Nursing

- Vaccination hesitancies and opportunistic vaccination in the ED, 6th Australasian Emergency Nurse Practitioner Symposium, Mercure Albert Park, September 2015 (Sonja Elia)
- Missed opportunities to vaccinate children admitted to a paediatric tertiary hospital, Owl Nursing Journal Club, August 2015 (Sonja Elia)
- Immunisation recommendations for children with a disability. Developmental Medicine Webinar, February 2015 (Sonja Elia)
- Increasing influenza vaccination rates for patients with developmental disability at the RCH. Nursing Research and Clinical Innovations Symposium, September 2015 (Sonja Elia)
- Respiratory Syncytial Virus Immunoglobulin for Cardiology patients at the RCH. Nursing Research and Clinical Innovations Symposium, September 2014 (Sonja Elia)
- Immunisation of pre and post liver transplant recipients at the RCH. Nursing Research and Clinical Innovations Symposium, September 2014 (Rachael McGuire)

### General practitioners and immunisation providers

#### 2016

- Varicella vaccination in immunosuppressed special risk patients. 15th National Immunisation Conference, Public Health Association of Australia, Brisbane, June 2016 (Nigel Crawford)
- Immediate Hypersensitivity Adverse Events Following Immunisation in Preschool Aged Children in Victoria. 15th National Immunisation Conference, Public Health Association of Australia, Brisbane, June 2016 (Kirsten Perrett)
- Minimising pain during immunization using external cold and a vibration device (Buzzy®). 15th National Immunisation Conference, Public Health Association of Australia, Brisbane, June 2016 (Sonja Elia)
- Providing opportunistic immunisations for at-risk inpatients – a two year follow up. 15th National Immunisation Conference, Public Health Association of Australia, Brisbane, June 2016 (Sonja Elia)
- Parent immunisation needs and attitudes survey – Antenatal clinics (PINA-A), Australia. 15th National Immunisation Conference, Public Health Association of Australia, Brisbane, June 2016 (Margie Danchin)

- The impact of new immunization legislation on providing catch-up advice. 15th National Immunisation Conference, Public Health Association of Australia, Brisbane, June 2016 (Rebecca Feore)
- Understanding vaccine hesitancy in the Australian context and the impact of new policies intended to tackle under and non-vaccination. Visiting Professor talk, Dr Sarjito Hospital, Jogjakarta, Indonesia April 2016, Clinical Paediatric Update RCH May 2016, University of Melbourne MD student conference June 2016 and the RCH Bioethics conference, September 2015 (Margie Danchin)
- Australian GP Conference Melbourne, May 2016 (Nigel Crawford)
- Special risk patients and travel case studies, Clinical Vaccinology Update, March 2016 (Nigel Crawford)

#### 2015

- Immunisation Registers, Clinical Vaccinology Update, November 2015 (Nigel Crawford)
- Hospital based innovations, RCH, Clinical Vaccinology Update, November 2015 (Sonja Elia)
- The Parental Immunisation Needs and Attitudes Survey of parents attending Ante-natal clinics (PINA-A). Adelaide Maternal immunisation workshop, October 2015 (Margie Danchin)
- RCH Great debate: Vaccination is an obligation NOT a choice, October 2015 (Margie Danchin and Nigel Crawford)
- Increasing influenza vaccination rates for patients with developmental disability at the Royal Children's Hospital, Melbourne. New Zealand Immunisation Conference, Wintec Hamilton New Zealand, September 2015 (Sonja Elia)
- Recent changes to the NIP and new approaches to Vaccine hesitancy. Cabrini Hospital lecture series, September 2015 (Margie Danchin)
- Vaccination uptake by vaccine-hesitant parents attending a Specialist immunisation clinic in Australia. New Zealand Immunisation Conference, Wintec Hamilton New Zealand, September 2015 (Margie Danchin)
- Why vaccinate? Australian Medical Student Association, Melbourne Conference Centre, July 2015 (Nigel Crawford)
- Understanding vaccine hesitancy and recent policy changes. Public health seminar, MCRI, July 2015 (Margie Danchin)
- New Vaccines. Clinical Vaccinology update, Melbourne University, June 2015 (Nigel Crawford)
- Pertussis update, Clinical Vaccinology update, Melbourne University, June 2015 (Kirsten Perrett)



- Vaccine policy 2015, Research Meeting, Monash University, June 2015 (Nigel Crawford)
- What's new in 2015, Queensland Health, June 2015 (Nigel Crawford)
- Vaccine preventable diseases update. Infection control study day, Mercy Hospital Heidelberg, May 2015 (Nigel Crawford)
- Influenza and Pertussis vaccines in pregnancy, Grand Round, Mercy Hospital for Women, May 2015 (Kirsten Perrett)
- Impact of maternal antibodies on rotavirus vaccine immunogenicity in developing countries, University of Melbourne, Indonesian Master Class, April 2015 (Margie Danchin)
- Vaccine safety, adverse events and vaccine hesitancy. RV3 Rotavirus Vaccine clinical trial Primary Health Care site training, Soeradji Hospital, Klaten, Jogjakarta, Indonesia February 2015 (Margie Danchin)
- Vaccine hesitancy. GP education meeting, Astra Zeneca 2015 (Margie Danchin)

#### 2014

- Vaccine hesitancy. Campus Clinical and Public Health Research Seminar, December 2014 (Margie Danchin)
- New approaches to tackling Vaccine hesitancy in Australia. Clinical Vaccinology update, December 2014 (Margie Danchin)
- Melbourne Vaccine Education Centre (MVEC). Medicare local, GPV in Swanston St, Melbourne, November 2014 (Nigel Crawford)
- Early Clinical Development of the RV3-BB Neonatal Rotavirus Vaccine - Phase 1 & 2 data. 11th International Rotavirus symposium, New Delhi, September 2014 (Margie Danchin)
- Vaccine hesitancy. Research rounds, Monash Medical Centre, August 2014 (Margie Danchin)
- Travel vaccines. Medicare Local, Burwood, July 2014 (Nigel Crawford)

### Staffing

#### Medical staffing

Nigel Crawford has an appointment with the RCH Immunisation Service (two sessions) and SAEFVIC MCRI (one session). Margie Danchin and Kirsten Perrett both have an appointment for 1.8 medical sessions each. Teresa Lazzaro has an appointment for one medical session and Daniel Golshevsky - locum 0.5 sessions (alternate weekly clinic).

#### Nursing staffing

Over the past two years, there have been several changes amongst the nursing staffing. Melissa Dallinger moved on to the Dermatology department as a Clinical Nurse Coordinator, as did Mel Addison as well as taking up a role in SAEFVIC as an immunisation nurse. Rachael McGuire took up a role as Nurse Education Coordinator with SAEFVIC, focused specifically on the MVEC website and resources. Melissa Nesbitt left the service to take on more work with her School Nursing position with the Department of Education. Robin Cavanagh finished up with the Immunisation service, focusing on her Emergency department ANUM role and her local council immunisation work. Kate Wall left the service, and continues working in travel medicine and BCG vaccine research and Kirsten Mitchell has also moved on to BCG vaccine research and keeping up her local council immunisation sessions. Megan Carpenter resigned from the RCH to focus on family and a family run business.

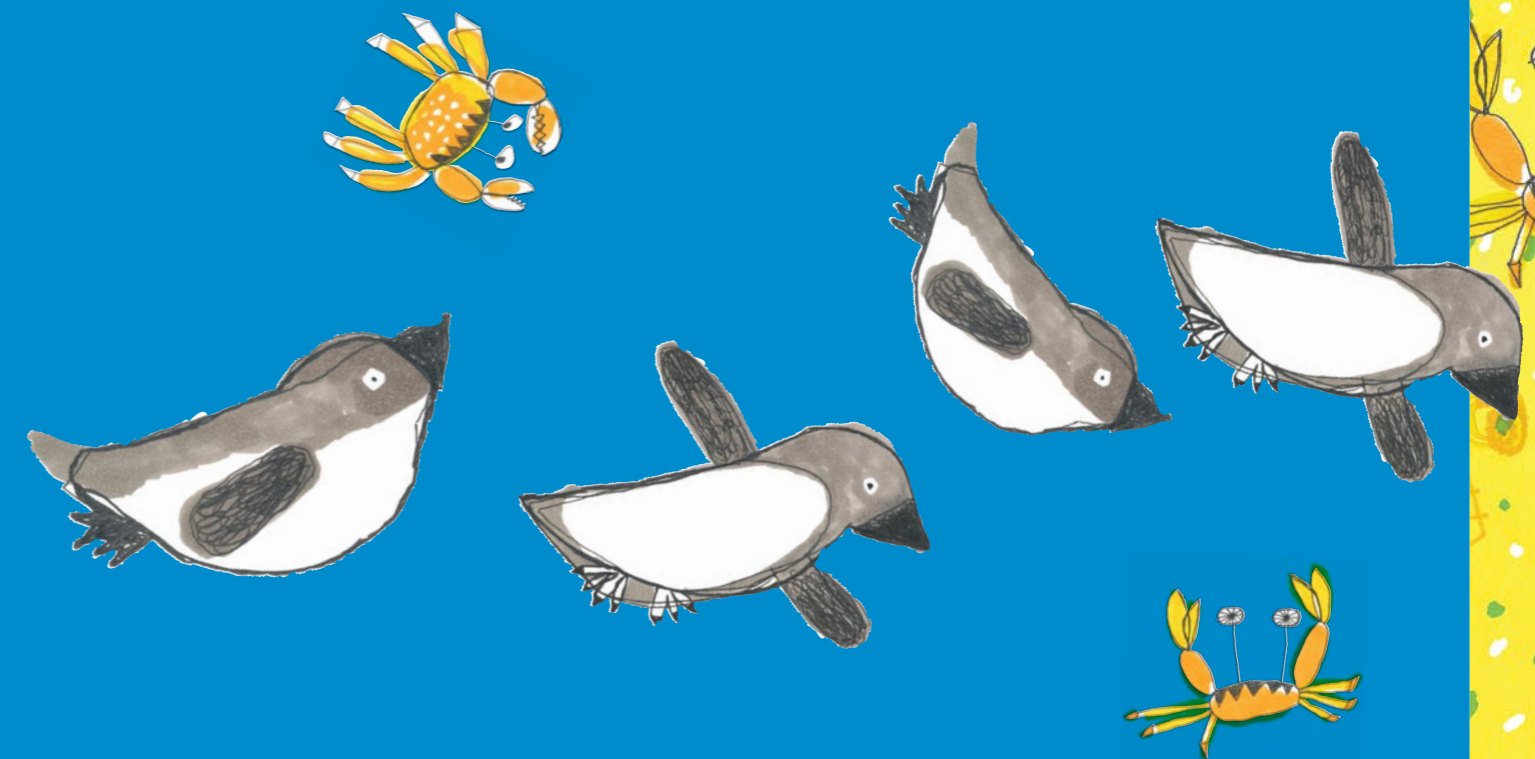
The RCH Immunisation Service also had some new staff join the team, with Nadine Henare, Vicki Wall and Narelle Jenkins filling the vacant nursing positions. Also over the course of the RSV Immunoglobulin program, we welcomed Lucy Lam (Day Surgery Unit), Michelle McCarthy (Emergency), Peta Kilsby (Day Medical Unit) and Sigrid Pitkin (Platypus). We would like to formally thank them for their contribution to the high quality care delivered by the immunisation team.

#### Administrative support

The administrative team also underwent some changes to staffing, with Julie Bond leaving the hospital to take up a Food technology assistant role at her son's school. Dave Hannon also left after covering Julie for approximately one year, to take on a Case worker position with the Department of Justice and Regulation.

Jessica Elia has continued her work with the RCH Immunisation Service in an administrative role and this has been extremely helpful to the nursing and medical staff. In particular, with the turnover of nursing staff, Jessica has remained constant, demonstrating her knowledge of immunisation by helping in determining patient's vaccine needs and supporting the nursing team.

## SECTION 4 Clinical immunisation research and publications



## Background

As detailed in the previous section, the Immunisation service has strong research links across the campus, with both the MCRI and University of Melbourne (UoM)

We have three staff with honorary appointments at the UoM;



**Nigel Crawford**



**Kirsten Perrett**



**Margie Danchin**

**Sonja Elia** is the Academic Consultant for the Nurse Immuniser Program at La Trobe University, Bundoora.

We also conduct a number of collaborative projects with Universities and tertiary Children's hospitals around the country. These are predominantly in the sphere of vaccine preventable diseases, including epidemiological studies, vaccine safety, communication/social science research and vaccine trials. A number of these specific projects are detailed below:

- AusVaxSafety – national collaboration regarding vaccine safety, led by the National Centre for Immunisation Research and Surveillance (NCIRS) – Sydney University  
– [www.ncirs.edu.au/vaccine-safety/ausvaxsafety](http://www.ncirs.edu.au/vaccine-safety/ausvaxsafety)  
– RCH investigator Nigel Crawford
- Paediatric Active Enhanced Disease Surveillance (PAEDS) – a national collaboration of tertiary paediatric hospitals, monitoring the epidemiology and clinical outcomes of vaccine preventable diseases (e.g. varicella and whooping cough), vaccine adverse events (e.g. intussusception (Rotavirus vaccine) and syndromic evaluation (acute flaccid paralysis; Australian Childhood Encephalitis study) – Pls Kristine Macartney and Cheryl Jones (Sydney University)  
– [www.paeds.edu.au](http://www.paeds.edu.au)  
– RCH investigator Nigel Crawford
- Vaccine hesitancy- RCH/UoM. Leadership from Margie Danchin, as part of a collaboration with PI Julie Leask (Sydney University and NCIRS)  
– [www.ncirs.edu.au/research/social-research/sarah-project](http://www.ncirs.edu.au/research/social-research/sarah-project)
- VIRGo trials unit- School of Population and Global Health, The University of Melbourne. RCH Immunisation Paediatrician's Kirsten Perrett and Margie Danchin lead this research, which is part of the national vaccine trial network. Kirsten Perrett also has a role in the Melbourne Children's trials unit, assisting in the development of new research initiatives across the campus.  
– [www.mcri.edu.au/research/themes/infection-and-immunity/vaccine-and-immunisation-research-group-virgo](http://www.mcri.edu.au/research/themes/infection-and-immunity/vaccine-and-immunisation-research-group-virgo)

RCH Immunisation also work closely with Monash Children's Hospital and University.

## Advanced trainee and scholarly selective projects (completed 2014-16)

### Advanced trainees

**Tim Penno** Varicella vaccine in special risk groups (Supervisor: Nigel Crawford)

**Kate Hodgson** Establishment of the AEFI-CAN network – a HPV vaccine pilot (Supervisor: Nigel Crawford)

**Daryl Cheng** Anaphylaxis following vaccination in children 0-18 years (Supervisor: Nigel Crawford)

### Scholarly selective

**Amelia Marshallsea** Evaluation and survey regarding health professional utilisation of the MVEC website.

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- (i) Human Papillomavirus (HPV) vaccine coverage in adolescents with developmental disabilities. Jenny O'Neill, Sonja Elia & Kirsten Perrett. 15th National Immunisation conference, Brisbane, June 2016.
- (ii) Immunisation Status of Children with a new diagnosis of Inflammatory Bowel disease (oral). Tim Ford, George Alex, Margie Danchin, Nigel Crawford, Kirsten Perrett. 15th National Immunisation conference, Brisbane, June 2016.
- (iii) Dravet syndrome - seizures and immunisation. Two case studies (poster). Georgie Lewis, Kirsten Perrett, Nigel Crawford. 15th National Immunisation conference, Brisbane, June 2016.
- (iv) Diarrhoea and AEFI post rotavirus vaccination: reports to SAEFVIC, Victoria (2007-14). (poster). Margie Danchin, Nigel Crawford. 15th National Immunisation Conference, Public Health Association of Australia, Brisbane, June 2016.
- (v) Rituximab and protection from vaccine preventable diseases in paediatric patients. (poster). Daryl Cheng, Nigel Crawford. 15th National Immunisation Conference, Public Health Association of Australia, Brisbane, June 2016.
- (vi) BCG vaccine delivery in Victoria from 2013-15. (poster). Nicole Wong, Nigel Crawford, Jo Hickman, Sonja Elia, Nigel Curtis, Jane Standish and Jim Buttery. 15th National Immunisation Conference, Public Health Association of Australia, Brisbane, June 2016.
- (vii) Impact of Rotavirus specific maternal antibodies on vaccine take to RV3-BB Neonatal Rotavirus vaccine in New Zealand (poster). Danchin M, Chen MY, Cowley D, Pavlic D, Lee K, Orsini F, Watts E, Jackson P, Buttery J, Bishop R, Barnes G, Bines J & Kirkwood C. European Society of Paediatric Infectious Diseases (ESPID) conference, Brighton UK, 2016.
- (viii) Bleeding risk during routine immunization in children on long-term warfarin. Emily Kitson, Emma Thursky, Anna Eason, Emily Blake, Cassandra Choy, Hollie Nosworthy, Lakshmy Gopalakrishnan Nair, Sophie Jones, Sonja Elia and Fiona Newall. Nursing research and clinical innovations symposium, September 2014.

# Abbreviations

<b>ACIR</b>	Australian Childhood Immunisation Register	<b>ImPS</b>	Immuniser Provider System
<b>AIR</b>	Australian Immunisation Register	<b>MCRI</b>	Murdoch Children's Research Institute
<b>AEFI</b>	Adverse Event Following Immunisation	<b>MVEC</b>	Melbourne Vaccine Education Centre
<b>AIR</b>	Australian Immunisation Register	<b>NCIRS</b>	National Centre for Immunisation Research and Surveillance
<b>ANUM</b>	Associate Nurse Unit Manager	<b>NIP</b>	National Immunisation Program
<b>BCG</b>	Bacille Calmette-Guerin	<b>NUM</b>	Nurse Unit Manager
<b>CVU</b>	Clinical Vaccinology Update	<b>PAEDS</b>	Paediatric Active Enhanced Disease Surveillance
<b>DHHS</b>	Department of Health and Human Services (immunisation section)	<b>PHAA</b>	Public Health Association of Australia
<b>EMR</b>	Electronic Medical Record	<b>PI</b>	Principal investigator
<b>FLACC</b>	Face Legs Activity Cry Consolability (scale for pain measurement)	<b>RCH</b>	Royal Children's Hospital
<b>FFS</b>	Fee for service	<b>RSV</b>	Respiratory Syncytial Virus
<b>FTE</b>	Full Time Equivalent	<b>SAEFVIC</b>	Surveillance of Adverse Events Following Vaccination In the Community
<b>GP</b>	General Practitioner	<b>UNICEF</b>	United Nations Children's Fund
<b>HOD</b>	Heads of Department	<b>UR</b>	Unit Record
<b>HHE</b>	hypotonic-hypo-responsive episode	<b>VHIMS</b>	Victorian Health Incident Monitoring System
<b>ICU</b>	Intensive Care Unit	<b>VIRGO</b>	Vaccine and Immunisation Research Group
<b>ID</b>	Infectious Diseases	<b>WHO</b>	World Health Organisation

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