

Disclosure Statement

- I have no affiliation (financial or otherwise) with a pharmaceutical, medical device or communications organization.

The use of an Electronic Medical Record (EMR) to improve opportunistic immunisations for inpatients at RCH Melbourne



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Inpatient Immunisations - Background

5 year 9 month old fever p/w vomiting + diarrhoea

TORC → yellow fluid
 Vomiting + diarrhoea 5/7 ∅ Blood / bile stools
 Abdominal cramps 5/7 ∅ Blood in stools
 Headaches 4/7: frontal, intermittent, mild
 Appeared improved yesterday but today, unable to tolerate oral intake. Had 250mls water, 2 bites
 Vomiting x 6 this AM
 Diarrhoea 2-3 today (small amt)
 Brother has similar illness
 ■ went to party last week but other kids OK
 Fever (38°C) 4/7
 No recent travel

Mx Ex - 33/40 via Emerg WUSCS for fetal low lying placenta
 NICU 6/52 BW 1500g

Pneumonia at 6 month age
 chronic abdo pain

Hx Mum has coeliac
 Asthma (mum)

IMMUNISATIONS not up to date (had 2mo, 4mo unsure)

MEDS NKDA
 Nil reg

- 5 yrs and 9 mths
- Not up to date, had 2 month, 4 month and others unsure

Inpatient Immunisations - Background



Admission Diagnosis/Problem List

There is no problem list on file for this patient.

Past Medical / Surgical History

Ex 34 weeks due to PROM - SCN for feeding and growing

IUTD. No meds

No previous admissions

SHx: at home with parents, no siblings

HOPC

Unwell since Sunday. Fevers – subjective. Associated cough, lethargy, reduced fluids

Seen by GP on Monday and and Wed - ?viral illness and reassurance

On Thurs – increased WOB and lethargy > presented to GP > advised present to Austin ED

In Austin ED:

Lethargy and unwell. Temp 39.5. HR 180, RR 40.

Blanching erythematous rash

Blood cultures taken

Treated with ceftriaxone and flucloxacillin

No resus fluid boluses given, but BGL 3.9 and ketones 5.6, treated with 2ml/kg 10% dextrose

Admitted to paediatric ward at Austin

Positive blood culture at 12 hours, consistent with Strep pyogenes

Not up to date, due
18 month vaccines

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Inpatient Immunisations - aim

- Immunisation status of inpatients 6 weeks to <7 years reviewed by immunisation centre nursing staff using the Australian Immunisation Register (AIR)
- Checked daily

Inpatient Immunisations - aim



- To provide:
 - catch-up immunisations
 - catch-up plan
 - update AIR

Inpatient Immunisations – methods (2013/14)



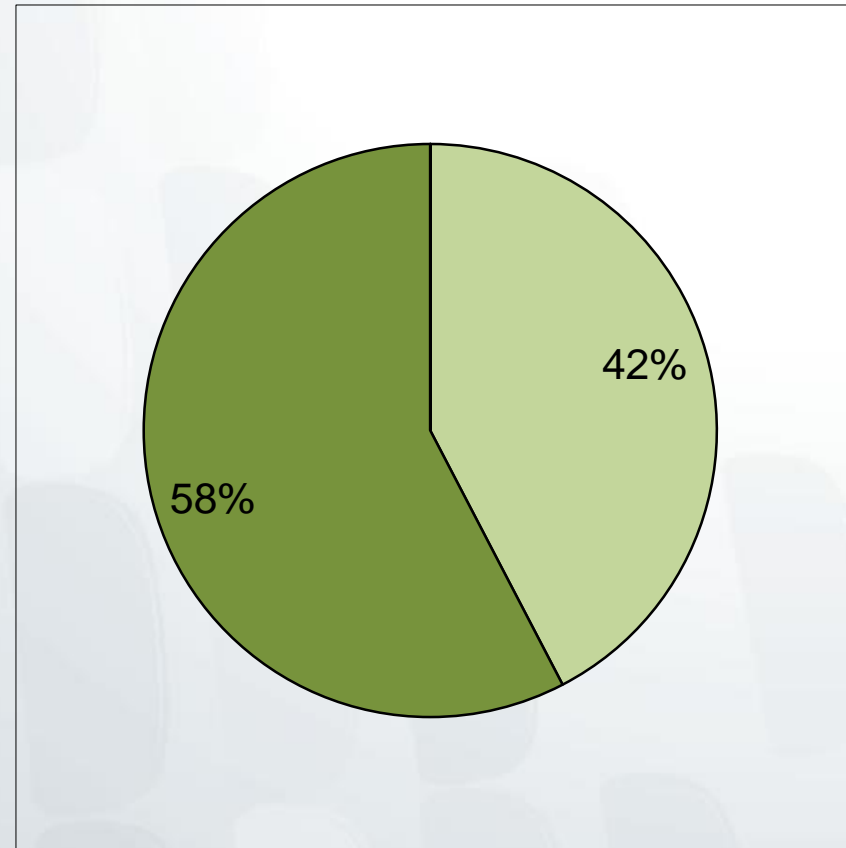
- Details of due/overdue vaccines are sent to the ward nurse coordinators

Inpatient Immunisations - results

- In a 22 week period (01/09/13 – 31/1/14) inpatients aged between 6 weeks and up to 7 years had immunisation status checked using AIR during their admission

Inpatient Immunisations - results

- One month after the patients admission date, AIR is re-checked to determine immunisation status
- Of the 831 due or overdue inpatients;
 - 352 (42%) were immunised and brought up to date



Overdue inpatients

- Of the 352 (42%) patients,
 - 179 (51%) were brought up to date at RCH during their admission
 - 121 (34%) via GP
 - 50 (14%) through local council
 - 2 (1%) other

Providing opportunistic immunisations for at-risk inpatients in a tertiary paediatric hospital

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Abstract

Attaining high immunisation coverage rates for children with medical conditions is vital. The Royal Children's Hospital (RCH) Immunisation Service has the opportunity to check each inpatient's immunisation status and provide opportunistic vaccines and/or bring the Australian Childhood Immunisation Register (ACIR) up-to-date. This paper highlights that during admission, one quarter of children were not up-to-date with routine scheduled immunisations and 42% of those inpatients due or overdue for immunisation were vaccinated. The model of establishing routine checking of immunisation records and reminding hospital staff about immunisation can result in improvements in vaccination coverage. Healthcare providers have a responsibility to check immunisation status and offer vaccines when necessary; however, often there are missed opportunities to immunise. This paper demonstrates that having a dedicated Immunisation Service, a partnership with a relevant government agency, and effective collaboration with inpatient clinical teams, opportunistic immunisation can be achieved for inpatients.

KEYWORDS

children, hospital, immunisation

Immunisation is one of the most efficient and cost-effective public health interventions (NHMRC, 2013). In Australia, the overall national immunisation coverage target is 95% and this is measured across three data collection points; 1, 2, and 5 years of age. In 2016, 92.7% of children by 5 years of age had received all of the routine vaccines on the National Immunisation Program (NIP) schedule. Coverage in Aboriginal and Torres Strait Islander children is slightly higher at 5 years of age (94.3%) but lower in the earlier age points, suggesting issues with timeliness. These data are recorded using the Australian Childhood Immunisation Register (ACIR). From 30 September 2016, the register has broadened to a "whole of life" register to capture all vaccines administered throughout a person's life (Australian Government, 2016). In addition, the federal government passed the "No jab, no pay" legislation, affecting family assistance payments of the non-immunised, while the state government passed the "No jab, no play" legislation which has implications on child care and kindergarten enrolment for children not up-to-date with immunisation. Therefore, every health service presentation should be considered an opportunity to ensure that children are immunised (Berling et al., 2012). This discussion paper will describe an innovation in clinical practice.

1 | CHILDREN AT INCREASED RISK

Children in special risk groups (see Table 1) (NHMRC, 2013) are deemed a high-risk population and this intensifies the threat of morbidity and mortality from vaccine preventable diseases (Hjuler et al., 2008). Whilst this ought to increase the impetus on health professionals to ensure that immunisation status is up-to-date, as well as identify that additional special risk vaccines may be required, this is often not the case. Ressler et al. (2008) reported that children presenting to a health service have lower immunisation uptake rates than the general population. Reasons for this have been attributed to a lack of formal ward-based policies for opportunistic immunisation, poor documentation of immunisation plans and the need for education of paediatric ward staff.

Financial and human resource factors within healthcare organisations have been identified as being major contributors to challenges in recalling and/or reminding families of the importance of immunisation, especially in children with underlying medical conditions (Pereira et al., 2012). It was also identified that a lack of staff confidence in immunisation-related data, as well as limited prioritisation of





Electronic Medical Record (EMR)

RCH > Division of Strategy and Organisational Improvement > The EMR > The Electronic Medical Record system

In this section

[The EMR](#)

[My RCH Portal](#)

[RCH Link](#)

[FAQs](#)

[Contact us](#)

The Electronic Medical Record system

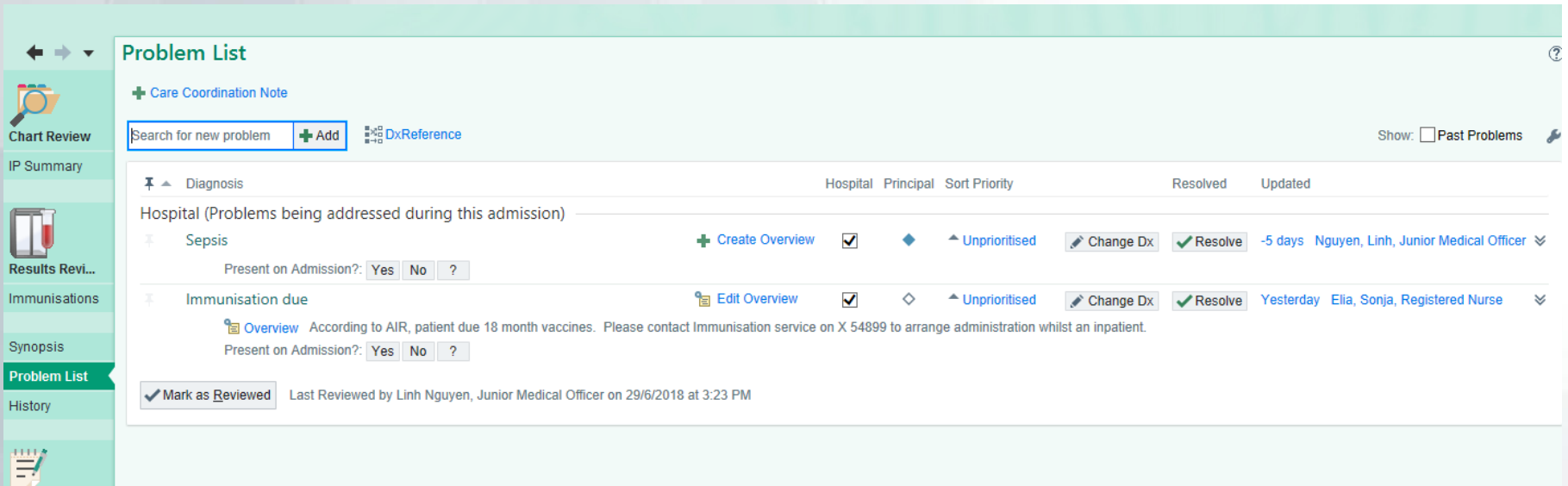
The Royal Children's Hospital launched its Electronic Medical Record (EMR) on 30 April 2016. We are one of the first paediatric hospitals in Australia to replace paper-based medical records with a comprehensive state-of-the-art electronic record.

We've rolled out the EMR so that our health care professionals will have the most up-to-date and accurate information, all in one place, when they care for your child.

The new system will improve communication among doctors, nurses, allied health professionals and the rest of your care team, helping them deliver even safer care.

It will also help us communicate better with you through 'My RCH Portal', a new secure, online hub where you can access parts of your medical record through the internet.

Methods (2016/17)



Problem List

+ Care Coordination Note

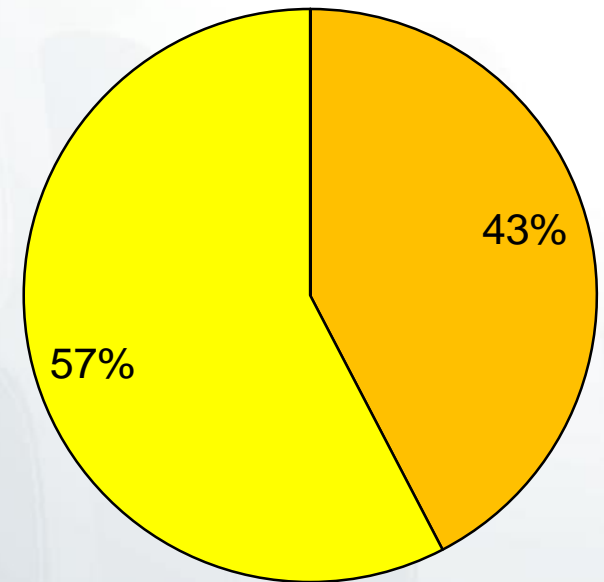
Search for new problem Show: Past Problems

Diagnosis	Hospital	Principal	Sort	Priority	Resolved	Updated
Hospital (Problems being addressed during this admission)						
Sepsis	<input checked="" type="checkbox"/>	<input type="checkbox"/>	▲	Unprioritised	<input type="button" value="Change Dx"/> <input type="button" value="Resolve"/>	-5 days Nguyen, Linh, Junior Medical Officer
Present on Admission?: <input type="button" value="Yes"/> <input type="button" value="No"/> <input <="" td="" type="button" value="?"/>						
Immunisation due	<input checked="" type="checkbox"/>	<input type="checkbox"/>	◇	▲ Unprioritised	<input type="button" value="Change Dx"/> <input type="button" value="Resolve"/>	Yesterday Elia, Sonja, Registered Nurse
<input type="button" value="Overview"/> According to AIR, patient due 18 month vaccines. Please contact Immunisation service on X 54899 to arrange administration whilst an inpatient. Present on Admission?: <input type="button" value="Yes"/> <input type="button" value="No"/> <input <="" td="" type="button" value="?"/>						
<input checked="" type="button" value="Mark as Reviewed"/> Last Reviewed by Linh Nguyen, Junior Medical Officer on 29/6/2018 at 3:23 PM						

- From 1st May 2016 to 30th December 2017

Inpatient Immunisations - results

- Of the 2,470 due/overdue inpatients;
 - 1,403 (57%) were immunised and brought up to date
- 15% improvement in opportunistic immunisation of inpatients ($p < 0.0001$)



Overdue inpatients



- Of the 1,403 (57%) patients,
 - 812 (58%) were brought up to date at RCH during their admission
 - 282 (20%) via GP
 - 78 (6%) through local council
 - 231 (16%) other

Problem resolved!!

Problem List

+ Care Coordination Note

Search for new problem [DxReference](#) Show: Past Problems

Diagnosis	Hospital	Principal	Sort Priority	Resolved	Updated
Hospital (Problems being addressed during this admission)					
Sepsis Present on Admission?: <input type="button" value="Yes"/> <input type="button" value="No"/> <input <="" td="" type="button" value="?"/> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td>Unprioritised</td> <td><input checked="" type="button" value="Resolve"/></td> <td>-5 days Nguyen, Linh, Junior Medical Officer</td>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Unprioritised	<input checked="" type="button" value="Resolve"/>	-5 days Nguyen, Linh, Junior Medical Officer
Immunisation due Overview According to AIR, patient due 18 month vaccines. Please contact Immunisation service on X 54899 to arrange administration whilst an inpatient. Present on Admission?: <input type="button" value="Yes"/> <input type="button" value="No"/> <input <="" td="" type="button" value="?"/> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td>Unprioritised</td> <td><input checked="" type="button" value="Resolve"/></td> <td>Yesterday Elia, Sonja, Registered Nurse</td>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Unprioritised	<input checked="" type="button" value="Resolve"/>	Yesterday Elia, Sonja, Registered Nurse

Last Reviewed by Linh Nguyen, Junior Medical Officer on 29/6/2018 at 3:23 PM

Inpatient immunisation - results

- AIR checked 6 months later
- Overall number immunised (86%)
- Results suggestive non adherence to timeliness of vaccination

Inpatient Immunisations - Discussion

- Number of reasons for children not able to have their immunisation status brought up to date;
 - too unwell
 - medical contraindication
 - already discharged

Future directions

- Master of Nursing Science – Clinical Inquiry and Nursing Research Subject

“Barriers to inpatient Immunisations on a tertiary paediatric respiratory unit”

Acknowledgements

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