



FINAL REPORT

Digital Health Case Study / Workflow / Integration 2022

*Please note: this report will be published on the RACP website,
so please do not include confidential information.*

Name	Daniel White
Report Date	18 th May 2022
Report Title	Timely access to pathology results for newly referred rural paediatric oncology patients on My Health Record

<p>Lay Summary:</p> <p>Please provide a brief, plain English summary of your Case Study / Workflow or Integration example.</p>	<p>A 3-year-old boy presented to a small rural hospital in northern Western Australia with 2 weeks of fever, bruising, and lethargy. The busy GP was the only doctor in the small emergency department and undertook workup with the assistance of nursing staff. The presenting history was concerning, and examination revealed a pale and lethargic boy with tachycardia and fever and hepatosplenomegaly.</p> <p>Urgent bloods processed in the local hospital laboratory showed pancytopenia with haemoglobin 33 g/L, platelets $42 \times 10^9/L$, white cell count $1.8 \times 10^9/L$ and neutrophil count $0.17 \times 10^9/L$. The full blood count analyser detected blasts, but no local lab scientists were available at the time to confirm this on blood film. There was evidence of tumour lysis syndrome with raised potassium 5.0 mmol/L, LDH 790 U/L and uric acid 0.42 mmol/L. The out-of-range results triggered a phone call from the laboratory scientist to the emergency department, the call taken by a nurse who wrote down the numbers and passed them on to the treating GP. These results were indicative of acute leukaemia, and a phone consult was initiated by the GP to the Perth Children's Hospital paediatric oncology department for advice. At the time of the call, the GP had not had time to confirm the results themselves, and only had a few results at hand, given how busy and stressful the situation was. On taking the call, we were able to use the patient's details to look at the accurate blood results that had been automatically uploaded to My Health Record (MHR) and provide timely advice on acute management prior to retrieval.</p>
<p>Case Study/Workflow/Integration Objective:</p> <p>Please state the objective of this example and why you focussed on it.</p>	<p>The objective of this case study was to highlight how pathology results from any laboratory service, when uploaded to My Health Record, can be seen remote to the patient promptly by any healthcare provider with access to MHR in real time. In the case example this system was used to analyse crucial laboratory values that were vital to assessment and management of the child. Without this, our team wouldn't have been able to provide as much succinct advice and the GP would have not been able to implement care as quickly. As a result, the patient would likely have become more unwell.</p>

<p>Benefits & Considerations:</p> <p>Please outline the benefits and considerations in the use of My Health Record and/or related digital health initiatives in this example.</p>	<p>In rural and remote areas of Australia, when paediatric patients require urgent workup and referral to a tertiary unit, the timely advice of the receiving team by phone to the treating team is essential. This process is made far safer and more appropriate when accurate results can be assessed in real time and advice provided promptly.</p> <p>One of the issues with this process is that the different pathology providers each have their own results interface and logging in to them can take valuable time away from clinical care and advice. Any patient enrolled in My Health Record has results from pathology providers uploaded in real time.</p>
<p>Additional Advice and Comments:</p> <p>Please list any items of interest which have arisen as a result of documenting this particular example.</p>	<p>At Perth Children’s Hospital, and some other public hospitals within WA Health, the iClinical Manager program has an embedded My Health Record button that allows rapid access to patient results. Knowing this function, is a valuable tool for clinicians to use in such as this, and also to easily obtain blood results during clinic appointments from private pathology providers without the need for phone calls and faxed results.</p>

Name	Daniel White
Report Date	19 th May 2022
Report Title	Electronic chemotherapy and documentation system reduces errors

<p>Lay Summary:</p> <p>Please provide a brief, plain English summary of your Case Study / Workflow or Integration example.</p>	<p>The process of chemotherapy prescription and delivery is complex, and prone to error, with risk of patient harm. Traditionally, chemotherapy has been prescribed on hard-copy medication charts, is time consuming and requires multiple medical and pharmacy cross checks. It is quite well accepted in the literature that use of chemotherapy prescribing systems reduces prescribing and dose related errors but may not improve errors that involve cycle number or stage¹. Other benefits include legibility, electronic calculation of drug doses and error flags or messages that assist clinicians to make safe decisions.</p> <p>At Perth Children’s Hospital, the MOSAIQ system has been successfully used for chemotherapy/immunotherapy prescribing since its implementation in the past 5 years. It contains all haematology and oncology patient notes, demographics, measurements, results and radiotherapy information. It is a standalone system and separate to the patient notes and planned future EMR but pulls in information from other hospital systems such as the results and admin programs to improve usability. Despite some drawbacks of a hybrid system, electronic chemotherapy prescribing using MOSAIQ allows pre-planned treatment protocols to be assigned one block at a time by consultants, as opposed to often day-at-a-time prescriptions for paper-based prescribing. This promotes efficiency and links into appointment requests, which positive impacts families. The system can be accessed remotely, so results and recent notes can be reviewed before prescribing.</p>
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<p>Case Study/Workflow/Integration Objective:</p> <p>Please state the objective of this example and why you focussed on it.</p>	<p>This example demonstrates that a complex process like chemotherapy prescription which is a high-risk process is improved in multiple ways by an electronic chemotherapy prescribing system.</p>
<p>Benefits & Considerations:</p> <p>Please outline the benefits and considerations in the use of My Health Record and/or related digital health initiatives in this example.</p>	<p>Such programs usually sit outside of any existing EMR because they are designed specifically for complex treatment protocols and supportive care needs. However, integration with the hospital pathology, imaging and administrative systems is essential for clinicians to access results, body measurements, contact details and appointments.</p> <p>It is important to note that the same types of human errors can still occur during the chemotherapy prescribing process, and the 'Swiss cheese' model can still hold true, so intensive training, checking, and monitoring is essential.</p> <p>Training new staff is time consuming not always suitable for temporary or rotating staff, so tiered access needs to be a consideration.</p>
<p>Acknowledgements</p>	<p>1. Weingart, S. N., Zhang, L., Sweeney, M., & Hassett, M. (2018). Chemotherapy medication errors. <i>The Lancet Oncology</i>, 19(4). https://doi.org/10.1016/s1470-2045(18)30094-9</p>

Award Recipient Signature:

I certify that the information supplied in this report is true and correct. I consent to enquiries made by the Royal Australasian College of Physicians to verify this information with any institution or individual.

Signature:  _____

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