



## 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.*

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<b>Report Date</b>	20/05/2022
<b>Report Title</b>	The role of the My Health Record System in minimising delay to care delivery and preventing complications.

<b>Lay Summary:</b>  Please provide a brief, plain English summary of your Case Study / Workflow or Integration example.	My Health Record (MHR) offers several features that enable access to a patient's medication history, such as 'Prescription and Dispense', 'Health Summary' and 'eHealth Prescription Record'. The information provided through these features allow inter-facility communication and aid in verifying/ supplementing the information provided by patients, which can be used to improve patient care.
<b>Case Study/Workflow/Integration Objective:</b>  Please state the objective of this example and why you focussed on it.	Despite the advent of various electronic medical record systems, there remains a heavy reliance on patients to provide their most up-to-date list of medications on presentation to a healthcare facility. While the implications of this are less critical in ambulatory care settings, they can pose significant issues in an acute care setting. Evidence suggests that a large proportion of in-hospital adverse drug reactions are attributable to inaccurate medication histories. <sup>1</sup> This is particularly the case for older patients with multiple medications, who are at a greater risk. <sup>2</sup> In the acute clinical setting, lack of access to accurate medication histories may lead to delay in care delivery and untoward consequences that may otherwise be prevented. <sup>3</sup>  This report focuses on the role of MHR in improving access to accurate medication histories and explores examples that demonstrate the impact of the information obtained from MHR on patient care and safety in acute clinical settings.

**Benefits & Considerations:**

Please outline the benefits and considerations in the use of My Health Record and/or related digital health initiatives in this example.

**Example 1**

Mrs X, a 41-year-old Indigenous woman from Queensland with end-stage-renal-failure (ESRF), dependent on haemodialysis, was visiting her family in South Australia when she became unwell and was hospitalised. She was found to be fluid overloaded as she had missed one session of haemodialysis. On presentation to hospital, Mrs X was lethargic and unwilling to engage in conversation. She had neither brought her medications with her, nor did she have a list of her current medications, which included her medications around dialysis.

The lack of an accurate medical history was particularly significant in Mrs X's case as she had multiple comorbidities that required continuous management, including asthma, Type 2 diabetes mellitus, and hypothyroidism. To further complicate matters, she had presented outside business hours and her pharmacy in Queensland could not be contacted.

Mrs X's MHR was accessed and her medication dispense history could be viewed through the 'Prescription and dispense' feature. While this feature is a useful method to get an overview of long-term medications (evidenced by regular/repeated dispenses), it can be difficult to accurately identify current medications. In addition, the dosing frequency is not always entered into the dispense history, which poses another challenge when attempting to administer medications using this information.

Fortunately, on reviewing the 'eHealth Prescription Record' section it was found that the Queensland Renal pharmacist had uploaded Mrs X's most up-to-date medication list, accurate to the last week, which is when Mrs X had left for Adelaide. This was instrumental in identifying the key medications and their doses such as erythropoietin, furosemide, and her anticoagulation.

The information on Mrs X's medications were obtained within a few hours of her presentation (as described above), which was associated with multiple benefits:

1. Mrs X received her regular medications which enabled her to receive continuous management of her existing medical conditions, preventing any exacerbations of her comorbidities
2. The length of Mrs X's hospital stay was likely shortened by minimising the discrepancies in her regular medications<sup>4</sup>
3. As she was able to receive her usual care around dialysis, such as furosemide for diuresis between dialysis sessions, no additional dialysis sessions were required between her scheduled sessions, saving hospital resources

This is an example of how a centralised electronic record system, such as MHR, can facilitate inter-facility communication, enabling

better medication reconciliation, minimising errors and adverse events, and improving overall patient care.

However, it is worth considering that the significance of this example is largely dependent on the actions of individual health practitioners using MHR. It is questionable whether accurate medication reconciliation would have been possible within the same timeframe had the Renal Pharmacist in Queensland not uploaded the most recent medication list on the platform.

The other methods through which the medication history may have been obtained are via medication summaries uploaded by the GP and discharge summaries from the local hospital (provided the patient was recently admitted and discharge medications had been documented). In the case of Mrs X, neither of these had been recently uploaded and hence would not have been viable options in this specific situation. This reinforces that the utility of MHR can vary with individuals and this could possibly be improved by automatising the update of records at any time a patient interfaces with a healthcare facility.

### **Example 2**

Mrs Y, a 90-year-old woman from a nursing home was admitted under Cardiology for an angiogram. She had only a few comorbidities, one of which was her chronic low back pain, for which she was regularly prescribed a buprenorphine patch. At the time of discharge, Mrs Y requested the nursing staff to organise a prescription for her buprenorphine patch as she was due for a change of her patch on the day but did not have any additional patches from her last dispense.

The nursing staff contacted the cover resident medical officer (RMO), who had not previously been involved in the care of the patient, to organise a script. When the cover RMO reviewed Mrs Y, she told the doctor that she had last been prescribed four patches of buprenorphine 20mcg/hour four weeks ago and that the last patch was due to be changed exactly on the date of the discharge. Mrs Y also told the RMO that she would not be able to see her GP for another 3 weeks, so would not be able to get a prescription from her GP until then. The RMO was unable to verify the dose of the patch by viewing the current patch as it had come off the patient's skin during her shower that morning.

The RMO reviewed the patient's admission notes and could not find the buprenorphine patch documented as one of the patient's regular medications. Given that the medication was an opioid, the RMO was hesitant to provide a script without verifying the dose. Simultaneously, if the RMO did not prescribe the patch, the patient would be unable to access her GP for a script for three weeks following her discharge, during which the patient would inevitably experience withdrawal and inadequate control of her chronic pain.

The RMO subsequently reviewed Mrs Y's MHR and under the 'Prescription and Dispense' section, was able to view the dispense

	<p>of buprenorphine 20mcg/h four weeks ago for a supply quantity of four patches, with zero repeats. This confirmed the dose of the patch and correlated with Mrs Y's statement that she would not have any further patches left from her last dispense.</p> <p>Following the access of this information, the RMO was able to provide a script for 3 patches of buprenorphine which would ensure Mrs Y had a continuous supply until she was able to receive a repeat script from her GP.</p> <p>This example illustrates the various benefits of MHR in improving patient care:</p> <ol style="list-style-type: none"> <li>1. The documented evidence of the dose, quantity and date of the last dispense on MHR provided the health practitioner confidence about prescribing an opioid medication to a new patient</li> <li>2. The doctor did not have to solely rely on the patient's recollection of the dose, which if the patient had been unsure about may have led to a dosing error and consequent adverse effects</li> <li>3. The timely prescription of the medication prevented adverse events arising from lack of access to the medication; in this case, opioid withdrawal and re-surfacing of previously well-controlled chronic pain</li> </ol>
<p><b>Additional Advice and Comments:</b></p> <p>Please list any items of interest which have arisen as a result of documenting this particular example.</p>	<p>The above examples demonstrate the various methods in which MHR may be used to minimise healthcare delivery and prevent complications. It is however important to note that not all patients benefit in a similar manner due to the design of the system which is heavily reliant on the user practices of the healthcare professionals involved in the patient's care.</p> <p>The examples in this report also describe the multiple features within the MHR system that can be used to obtain the same information – this could also be contributing to the inter-patient variability in documentation. This suggests that a more integrated and automatised system would be the solution to ensuring patients' records are updated more often.</p>
<p><b>Acknowledgements</b></p>	<p><b>References:</b></p> <ol style="list-style-type: none"> <li>1. Pippins JR , Gandhi TK , Hamann C , et al . Classifying and predicting errors of inpatient medication reconciliation. <i>J Gen Intern Med</i> 2008;<b>23</b>:1414–22.doi:10.1007/s11606-008-0687-9</li> <li>2. Salanitro AH , Osborn CY , Schnipper JL , et al . Effect of patient- and medication-related factors on inpatient medication reconciliation errors. <i>J Gen Intern Med</i> 2012;<b>27</b>:924–32.doi:10.1007/s11606-012-2003-y</li> </ol>

	<ol style="list-style-type: none"><li>3. Duguid M. The importance of medication reconciliation for patients and practitioners. <i>Aust Prescr</i> 2012;<b>35</b>:15-9. doi.org/10.18773/austprescr.2012.007</li><li>4. Park B, Baek A, Kim Y et al. Clinical and economic impact of medication reconciliation by designated ward pharmacists in a hospitalist-managed acute medical unit. <i>Research in Social and Administrative Pharmacy</i>. 2022;<b>18</b>(4):2683-2690. doi:10.1016/j.sapharm.2021.06.005</li></ol>
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**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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