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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	Dr Christopher Chew
Report Date	02/05/2022
Report Title	Critical missed regular medications can be identified through the MHR.

Lay Summary: Please provide a brief, plain English summary of your Case Study / Workflow or Integration example.	A patient in her 40's initially presented to hospital before the weekend with gradually worsening shortness of breath over a number of weeks and was found to a fluid collection in the lining of her lung. Following admission, she rapidly deteriorated between 48-72 hours later, with increasing confusion, pain, shakes and a rapid heart rate. She was urgently transferred to a second hospital for insertion of a chest tube for drainage of the fluid collection, which was presumed to be purulent and the cause of her deterioration. However, routine review of her MHR instead identified recent prescriptions for opioid replacement therapy (methadone 120mg) which were not identified on initial presentation. A diagnosis of severe opioid withdrawal was made, and the patient was re-commenced on appropriate opioid replacement therapy, with significant improvement in symptoms and clinical condition.
Case Study/Workflow/Integration Objective: Please state the objective of this example and why you focussed on it.	With increased life expectancy and the increased prevalence of chronic disease, medication regimens are becoming longer and more complex. Identification of a patient's regular medications on admission to an acute care hospital is often difficult, as patient self-report may be unreliable, documentation can be sparse or out-of-date, and medications brought in may be incomplete. Many hospitals have a formal process of pharmacy medication reconciliation, with laborious manual cross-checking through patient interview, collateral from the patient's pharmacy or GP, and recent hospital documentation. However, this process may only be completed days after admission, and is only available during hours. Though temporary omission of regular medications is usually without significant harm, this often causes distress to patients and caretakers. More rarely, as documented, there can be life-threatening consequences.

Benefits & Considerations: Please outline the benefits and considerations in the use of My Health Record and/or related digital health initiatives in this example.	Many patients have prescription and dispense records for PBS medications available on My Health Record, which should serve as an important additional source of contemporaneous documentation during after-hours admissions to acute care hospitals. Additional information including the date of prescription, strength, quantity and repeats is also accessible, and can help a clinician identify the veracity of the medicine records. However, this does not adequately replace a complete medication record. More recently, the Pharmacist Shared Medicine List (PSML) is a new My Health Record initiative to create a digitised complete medication record at critical points of handover and is in the process of being rolled out nation-wide. This should further improve the reliability and importance of the My Health Record as a source of medication information.
Additional Advice and Comments: Please list any items of interest which have arisen as a result of documenting this particular example.	
Acknowledgements	Dr Anne Marie Southcott (Western Health) Hollie Lawlor (Digital Health, Department of Health Victoria)

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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engage@racp.edu.au

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Name	Dr Christopher Chew
Report Date	02/05/2022
Report Title	Information-gathering from My Health Record in the Outpatient Specialist Clinic setting finds 'unknown unknowns'.

Lay Summary: Please provide a brief, plain English summary of your Case Study / Workflow or Integration example.	A gentleman in his 70's was referred urgently by his new GP to the Respiratory Clinic at a major metropolitan health service in Victoria for work-up of severe dyspnoea and hypoxia. He had recently moved to the local area, and due to a degree of cognitive impairment was unable to provide significant past medical history to either his GP or the clinician initially reviewing him in clinic. Review of the My Health Record identified documentation related to an inpatient admission a few months prior at another health service, including a discharge summary and investigations. The patient had been diagnosed with severe pulmonary hypertension on a transthoracic echocardiogram, with plans for further urgent outpatient investigations and rapid follow-up. Presumably he had then been subsequently lost to follow-up due to his change of residence. With this information, the clinician was able to organise for further directed investigations, both reducing the time required for further information-gathering and the potential delay to diagnosis.
Case Study/Workflow/Integration Objective: Please state the objective of this example and why you focussed on it.	The increasing multi-disciplinary complexity of modern medicine and fragmentation of medical care and documentation presents a growing challenge. In Victoria, for instance, health information is usually stored locally at the health service in which it is generated (e.g. GP practice, public hospital, private rooms), and is not easily available to other treating clinicians. "Chasing" such important documentation involves a laborious and time-consuming process. This first requires identifying that it exists, usually through patient self-report, and then contacting the relevant health service to have this transferred over, usually in hard copy via fax. Issues with this process can result in unnecessary duplication of care; diagnostic or treatment delays; and/or significant demands on a clinician's time.

Benefits & Considerations: Please outline the benefits and considerations in the use of My Health Record and/or related digital health initiatives in this example.	The My Health Record provides a single depository for a patient's health information, which is accessible by all treating clinicians. Importantly, it can not only provide 'known unknowns' identified through patient inquiry, but also 'unknown unknowns' which may otherwise be missed, as in the example above. The current caveat is that the My Health Record is not yet a complete medical record and can only complement rather than replace usual processes to obtain health information. However, with growing volumes of medical information, and new document types (e.g. Specialist Letters) planned to be available, the My Health Record promises to be an increasingly valuable resource.
Additional Advice and Comments: Please list any items of interest which have arisen as a result of documenting this particular example.	The delay from symptom onset to diagnosis of pulmonary hypertension is usually over a year. This is likely a function of the non-specific presentation, its relative rarity, and the delay between the ordered series of investigations and clinic reviews required to narrow the diagnosis.
Acknowledgements	Dr Anne Marie Southcott (Western Health) Melissa Greco (Digital Health, Department of Health Victoria)

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Name	Dr Christopher Chew
Report Date	02/05/2022
Report Title	Ground zero experiences of electronic prescribing 'go-live'.

Lay Summary: Please provide a brief, plain English summary of your Case Study / Workflow or Integration example.	The author has had first-hand experience of two implementations of electronic prescribing 'go-live' in the last five years. The first was in a large metropolitan intensive care unit as a junior registrar. Prior to 'go-live', clinical staff were reassured that adequate plans were in place to ensure that the transition went smoothly. However, the transition from centralised paper charts proved very difficult for the first 1-2 weeks and were marked by multiple prescribing errors and near-misses due to unfamiliarity with new clinical workflows. This improved with time, though there was significant initial staff frustration that the process had not met expectations. The second was in a metropolitan hospital as a specialty registrar. In this instance, staff were warned that 'go-live' would be fraught and difficult, despite multiple contingency plans made in advance. The 'go-live' transition was smoother than expected, and overall staff satisfaction with the e-prescribing system rapidly grew. However, older clinicians based mainly in the outpatient setting have found it difficult to adopt the new systems.
Case Study/Workflow/Integration Objective: Please state the objective of this example and why you focussed on it.	This example aims to highlight that the implementation of digital health systems relies both on technical prowess, but also skill in managing expectations and cultural changes. Additionally, some anecdotal benefits and limitations of e-prescribing systems are described.
Benefits & Considerations: Please outline the benefits and considerations in the use of My Health Record and/or related digital health initiatives in this example.	Overall most clinicians, particularly junior medical staff, who spend a significant amount of time interacting with e-prescribing systems would agree that they improve clinical care. Particularly pertinent benefits include: 1. Electronic charts are accessible by multiple different users at the same time, from different locations. This reduced significant time wasted locating misplaced physical medical charts. 2. Suggested dosages, order sets, and PBS approval numbers can standardise care, reduce prescribing errors and improve efficiency.

	3. Significantly improved legibility with both medication charts and prescriptions. However, for clinicians who are less technologically adept, or who interact less frequently with the e-prescribing systems, there can be increased barriers to access. This is particularly relevant to senior clinicians who often do mostly outpatient clinic sessions. Relevant considerations include: 1. Significant time investment to overcome initial learning curve related to markedly different e-prescribing workflows. 2. Requirement for general comfort with basic technological systems (e.g. Windows, 'touch-on' ID or login systems, printers). There are also several prescribing errors that are easier to make in e-prescribing systems: 1. Medications inadvertently being continued for too long – as routine drug chart rewrites and reviews are no longer necessary. 2. Typing errors (e.g. additional or missed digits). 3. Dosage time errors – due to automatically calculated administration times or unintuitive user interfaces. Importantly, however, most of the burdens of e-prescribing systems are worst during 'go-live' periods and improve with time and increasing familiarity with new systems. Conversely, the benefits of e-prescribing systems instead increase over time. As such, it can be important for clinical and digital health leaders to acknowledge the initial difficulties associated with implementing such systems, but to reassure on-the-ground staff that this will eventually be replaced by long-term improvements.
Additional Advice and Comments: Please list any items of interest which have arisen as a result of documenting this particular example.	

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