

Pharmacy RESEARCH REVIEW™



Making Education Easy

Issue 78 – 2020

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Abbreviations used in this issue

AKI = acute kidney injury
GP = general practitioner
NHS = National Health Service
PRN = *pro re nata*
SMASH = Safety Medication dASHboard

Welcome to the latest issue of Pharmacy Research Review.

In this issue, a pharmacist-led Safety Medication dASHboard (SMASH) intervention reduces the risk of potentially hazardous prescribing and inadequate blood-test monitoring in UK primary care, a large meta-analysis finds that around 1 in 30 patients are exposed to preventable medication harm across health care settings, and an interesting study explores Hawke's Bay GPs' and community pharmacists' practices and views about education for patients regarding medicines with potential for contributing to community-acquired acute kidney injury. Also in this issue, a contactless prescription pickup kiosk is convenient for health care workers in a Californian hospital setting, and Australian researchers find a disconnect between the current level of home medication review service provision and population health needs.

We hope you find these and the other selected studies interesting, and welcome your feedback.

Kind regards,

Dr Chloë Campbell

chloecampbell@researchreview.co.nz

Evaluation of a pharmacist-led actionable audit and feedback intervention for improving medication safety in UK primary care

Authors: Peek N et al.

Summary: This time-series analysis evaluated the impact of a pharmacist-led Safety Medication dASHboard (SMASH) intervention on medication safety in primary care. Clinical pharmacists delivered the intervention using a web-based dashboard to provide actionable patient-level feedback, and reviewed individual at-risk patients. The intervention was implemented between 18 April 2016 and 26 September 2017 in 43 general practices covering a population of 235,595 people in Salford, England. At baseline, 95% of general practices had rates of potentially hazardous prescribing between 0.88% and 6.19%. The SMASH intervention reduced the prevalence of potentially hazardous prescribing by 27.9% at 24 weeks ($p < 0.001$) and by 40.7% at 12 months ($p < 0.001$); 95% of practices had rates of potentially hazardous prescribing between 0.74% and 3.02% after 12 months. The rate of inadequate blood-test monitoring decreased by 22.0% at 24 weeks ($p = 0.046$) and by 23.5% at 12 months ($p = \text{NS}$).

Comment: This study capitalised on England's NHS policy to increase clinical pharmacists working as part of general practice teams and extended the classic **PINCER** approach to develop a pharmacist-led SMASH intervention. The novel electronic, interactive medication safety dashboard generates daily lists of patients currently exposed to potentially hazardous prescribing or inadequate blood-test monitoring to enable action to be taken. As more pharmacists in NZ take up roles in general practice, I would love to hear if anyone is working on something like this here too.

Reference: *PLoS Med* 2020;17(10):e1003286

[Abstract](#)

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Preventable medication harm across health care settings

Authors: Hodkinson A et al.

Summary: This systematic review and meta-analysis determined the prevalence, severity and type of preventable medication harm in various health care settings. A search of Medline, Cochrane library, CINAHL, Embase and PsycINFO from 2000 to 27 January 2020 identified 81 observational studies (n=285,687) that were suitable for inclusion. Meta-analysis of the data found that the prevalence of preventable medication harm was 3% and the prevalence of overall medication harm was 9%. The highest rates of preventable medication harm were seen in elderly patient care settings (11%), intensive care (7%), highly specialised or surgical care (6%) and emergency medicine (5%). Preventable medication harm was mild in 39% of cases, moderate in 40%, and clinically severe or life-threatening in 26%. The highest rates of preventable harm occurred at the prescribing (58%) and monitoring (47%) stages of medication use. Preventable harm was greatest in medicines that affected the central nervous system and the cardiovascular system.

Comment: In 2017, the World Health Organization launched a global initiative to develop approaches to reduce severe, preventable medication harm in all countries by 50% over the next 5 years. Unfortunately, achievement of this goal has likely been affected by COVID-19, but the findings of this study do help indicate several key areas that would make sense to target first. Of note, there were 6 patients on the research advisory panel for this project who were involved in a variety of aspects including developing the research questions and advising on interpretation and dissemination of results.

Reference: *BMC Med* 2020;18(1):313
[Abstract](#)



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Pharmacists' perceived responsibility for patient care when there is a risk of misadventure

Authors: Bennett G et al.

Summary: This Australian study investigated community pharmacists' perceived responsibility for patient care when there is a risk of misadventure. 21 community pharmacists working in Brisbane were interviewed about how they would respond (and their perceived responsibility) when faced with a scenario involving a patient suffering fatal toxicity as a result of misuse of opioids. The pharmacists' responses to the scenario were mostly similar, but they differed with regard to their perceived responsibility. Most of them described their scope of practice in terms of medication management (with a focus on patient outcomes), but some described a narrower scope of practice that focused on either medicine supply or legal aspects.

Comment: The range in views in this Australian study regarding pharmacists' perception of their responsibilities suggests this area may warrant greater discussion within the profession. It would also be useful to explore the topic with an interprofessional lens to discover whether the views of pharmacists and prescribers are aligned. The researchers had based the vignette presented to participants on a real coronial case in which the coroner's criticisms of the pharmacy included lack of documentation regarding the individual pharmacist's decisions and contact with prescribers.

Reference: *Int J Pharm Pract* 2020;28(6):599-607

[Abstract](#)

"What counts can't always be measured": A qualitative exploration of general practitioners' conceptualisation of quality for community pharmacy services

Authors: Watson M et al.

Summary: This UK study investigated GPs' perspectives on quality of care in the community pharmacy sector. 20 GPs from Scotland and England were interviewed. Analysis of their responses found multidimensional and inter-related concepts of quality; mostly related to patient benefit but also an impact on GP workload. The GPs cautioned that 'what counts can't always be measured', and their expectations of quality often mirrored those of their own sector. Pharmacist involvement was expected to ensure quality in the management of acute consultations, but the GPs lacked awareness of community pharmacy personnel type, roles and training. Independent pharmacies were sometimes perceived to be associated with higher quality service delivery than larger chain organisations.

Comment: This UK-based study takes a novel approach to considering quality of community pharmacy services: asking GPs. It explored GPs' views about the quality of community pharmacy services in general and more specifically using the concept of 'always events' and the management of acute consultations. The findings of this research could be used to start interprofessional conversations that lead to improved interprofessional understanding, dismantled silos and more cohesive approaches to primary health care.

Reference: *BMC Fam Pract* 2020;21(1):244

[Abstract](#)

Independent commentary by Dr Chloë Campbell

Chloë has worked in both hospital and community pharmacy in New Zealand and the United Kingdom since graduating from the University of Otago School of Pharmacy in 1995. She has recently completed a PhD investigating the medicines information needs of general practitioners and the information support roles of pharmacists in New Zealand. Chloë was co-convenor of the Medicines Information and Clinical Pharmacy Special Interest Group of the New Zealand Hospital Pharmacists Association for 7 years. **FOR FULL BIO [CLICK HERE](#)**



Avoiding acute kidney injury in primary care: Attitudes and behaviours of general practitioners and community pharmacists in Hawke's Bay

Authors: Vicary D et al.

Summary: This study explored current practices and views of Hawke's Bay GPs and community pharmacists regarding patient education about medicines with potential to cause AKI. Two online anonymous surveys of GPs and community pharmacists working in Hawke's Bay were administered in 2015–2016; 22% of GPs and 34% of pharmacists responded. Most respondents felt they had the expertise to educate patients on temporarily withholding 'at-risk' medicines during acute dehydrating illnesses. Although 78% of GPs expressed confidence in pharmacists providing this patient education and 54% welcomed pharmacist contact regarding a 'triple whammy' prescription, pharmacists did not routinely provide this patient education or contact GPs.

Comment: This paper forms part of a series of related research set in Hawke's Bay. In the last issue of [Pharmacy Research Review](#) there was an exploration of patient awareness around temporarily discontinuing 'at-risk' medicines when unwell with conditions that might lead to dehydration. This paper provides the interprofessional lens of pharmacist and GP attitudes and behaviours. It finds that expectations are not always in alignment, warranting further discussion.

Reference: *J Prim Health Care* 2020;12(3):244-56

[Abstract](#)

Demonstrating the value of community pharmacists in New Zealand educating a targeted group of people to temporarily discontinue medicines when they are unwell to reduce the risk of acute kidney injury

Authors: Vicary D et al.

Summary: This study evaluated a community pharmacist AKI education programme aimed at patient self-management during acute dehydrating illnesses. Potential participants were identified by the pharmacists when they presented a prescription for a study medicine. They then completed a short demographic questionnaire before being given verbal AKI information and advice on self-management during acute dehydrating illness (including withholding medicine). Participants were given take-home information, and were contacted 4–11 months later and invited to participate in a structured telephone interview. 113 adults were recruited and 93 (82%) were interviewed. 54 interviewees remembered the pharmacist's counselling, and 51 had kept the information sheet. 58 said they would temporarily withhold medicines during acute dehydrating illnesses, and 38 said they knew when to restart their medicines.

Comment: This study completes the AKI series of research with an education intervention conducted by community pharmacists to provide 'sick day guidance' about appropriately withholding key medicines temporarily when acutely unwell, as part of an AKI harm-reduction strategy. The researchers continued their integrated approach where local medical centres were made aware of the study and individual GPs were informed when their patients received the education intervention.

Reference: *Int J Pharm Pract* 2020;28(6):569-78

[Abstract](#)

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Clinical decision support in a hospital electronic prescribing system informed by local data: Experience at a tertiary New Zealand centre

Authors: Chin PKL et al.

Summary: An electronic prescribing and administration (ePA) system has been progressively rolled out to Canterbury District Health Board (CDHB) public hospitals since 2014, and is currently used for approximately 1300 tertiary beds. This article described a number of examples of ePA analyses that have been used for clinical decision support within the CDHB. After examining 525 spironolactone prescriptions, a high-dose alert threshold was set at 100mg with an expected alert burden of 3%. A 1-week alert regarding a ceftriaxone shortage decreased the prescribing rate of the antibiotic by 95% compared with the preceding 52 weeks. Review of 367 fentanyl patch alerts led to revision of the alert such that false-positives fell from 43% to 3%. Antithrombotic drug interaction alerts led to immediate changes in 6% of prescriptions, with a further 22% changed within 30 min.

Comment: This report describes experiences in tailoring clinical decision support solutions within a hospital ePA system. Given the current environment, using the e-prescribing system to highlight supply issues is notable. Similar approaches within e-prescribing software may have benefit in primary care as well. The experiences described highlight that making effective use of tech tools is not 'set and forget' and requires thoughtful use of data to inform configuration and monitor outcomes. The authors highlighted the key role of a clinical informaticist with a clinical pharmacy background in providing a 'bridge' between the clinical and IT personnel.

Reference: *Intern Med J* 2020;50(10):1225-31

[Abstract](#)

Impact of a contactless prescription pickup kiosk on prescription abandonment, patient experience, and pharmacist consultations

Authors: Hirsch JD et al.

Summary: This study investigated the impact of an automated pickup kiosk (Asteres ScriptCenter) on prescription abandonment rates, patient experiences, and pharmacist consultations when located in a hospital workplace setting. Hospital employees opting to use a 24h, 7 days-a-week kiosk located in the lobby for prescription collections and a telephone pharmacist consultation service were compared with employees opting to collect their prescription from the regular counter at the filling pharmacy. Outcomes were evaluated over a 35-month observation period. 440 employees (9%) enrolled to use the kiosk, with 5062 kiosk pickups recorded for new prescriptions, refill prescriptions, and over-the-counter medicines. The mean return-to-stock rate (a measure of prescription abandonment) at the kiosk was lower than that at the regular counter (4.3% vs 5.6%; $p=0.04$), but the mean time to pickup at the kiosk was slightly longer (2.8 vs 1.8 days; $p<0.001$). Despite the average kiosk consultation being shorter (2.0 vs 3.4 min; $p<0.001$), fewer patients using the kiosk had additional questions at the end of a consultation session (15.7% vs 38.8%; $p<0.001$). Most kiosk users felt that kiosk convenience was an important reason for using the filling pharmacy.

Comment: Although this study looks like it might be related to COVID-19, it was initiated in 2016 and data collection was completed in 2019. Despite use of the term 'contactless', there was an emphasis on ensuring patient counselling was still undertaken. New prescriptions required mandatory consultation with the pharmacist (a general requirement in the study jurisdiction of California). Patients were notified by text or e-mail of the need for consultation before being able to pick up their prescription. They could call at any time convenient for them and did not need to be at the kiosk at the time.

Reference: *J Am Pharm Assoc* 2020; published online Nov 11

[Abstract](#)

Trajectories of *pro re nata* (PRN) medication prescribing and administration in long-term care facilities

Authors: Sharma M et al.

Summary: This Australian study analysed data from the SIMPLER randomised controlled trial (involving 242 residents at 8 residential aged care facilities) to determine the prevalence of PRN medication administration in residential aged care facilities. At baseline, 211 residents (87.2%) were prescribed ≥ 1 PRN medication, with 77 (36.5%) receiving PRN medication in the preceding week. PRN administration was less likely for residents with more severe dementia symptoms and greater dependence, and was more likely in non-metropolitan areas. PRN prescribing and administration was relatively static during 12 months of follow-up.

Comment: Pharmacists involved in providing services to long-term care facilities may be interested in this study. When prescribed and administered appropriately, PRN medicines provide residents with timely access to symptom management. This study found that despite frequent prescribing of PRN medication, rates of actual administration across the 8 Australian facilities involved in the study were much lower and remained consistent over time. The researchers suggested this provides reassurance that the contribution of PRN medications to total medication exposure is likely to be small.

Reference: *Res Social Adm Pharm* 2020; published online Nov 10

[Abstract](#)

Provision of home medicines reviews in Australia: Linking population need with service provision and available pharmacist workforce

Authors: Spinks J et al.

Summary: This study investigated whether the current level of home medication review (HMR) services in Australia corresponds to population need. The age- and sex-adjusted polypharmacy rate was used as a proxy for population need for HMR, and was found to be 1389 per 100,000 population (estimated from the National Health Survey of Australia, 2017–2018). Rates of polypharmacy differed across states, with the Australian Capital Territory and the Northern Territory both having much lower rates than the rest of the country. There were also differences in the level of service provision between the states, with the highest rate of service in Tasmania and the lowest in the Northern Territory. Across all states, the rate of HMR service provision was much lower than the estimate of population need. An analysis of the number of accredited pharmacists available to provide 1 HMR service per year to each individual meeting the criteria of need (≥ 10 medications and ≥ 3 chronic illnesses) found that 9694 HMR pharmacists would be required to meet population need, which is 7393 more than currently available.

Comment: Australian HMRs involve a 'structured and comprehensive review of medications designed to identify, resolve and prevent medicines-related problems and optimise the benefits of pharmacotherapy through shared communication between the GP and reviewing pharmacist'. They are undertaken by accredited pharmacists but there is a cap of 20 per month per provider. This analysis which considers population need alongside capacity of the workforce seems a logical frame. What would the picture look like in NZ?

Reference: *Aust Health Rev* 2020;44(6):973-82

[Abstract](#)

Accreditation number: 2016/16, Expiry October 2022- This Review has been endorsed by PSNZ ENHANCE for 30 minutes of group 1 learning and pharmacists may allocate 0.5 group 1 points after reading this review.

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