Pharmacy Research Review™

Making Education Easy

Issue 57 – 2017

In this issue:

Abbreviations used in this issue
CVD = cardiovascular disease
DMARD = disease-modifying antirheumatic drug
MCA = multicompartment compliance aids
NNT = number needed to treat

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Welcome to issue 57 of Pharmacy Research Review.

Topics explored in this issue include GPs' perceptions of NSAID risks and benefits, the benefit–risk associated with repackaging of medicines into multicompartment compliance aids, and investigations into the usefulness of various interventions designed to improve medication adherence.

I hope you find the papers in this issue useful in your practice and I welcome your comments and feedback.

Kind regards,
Chloë Campbell
chloecampbell@researchreview.co.nz

Introducing a checking technician allows pharmacists to spend more time on patient focused activities

Authors: Napier P et al.

Summary: Outcomes are described from a pilot project instigated by Health Workforce New Zealand and conducted in 12 hospital and community pharmacies across New Zealand. These sites trialled the introduction of a Pharmacy Accuracy Checking Technician (PACT), to determine whether this new role would increase the amount of time available for a pharmacist to perform patient-focused activities, and whether pharmacists would use this time to perform these activities. At each participating site, work sampling data were collected using an electronic device at 2 time-points, before the implementation of the PACT role and then again after completion of the PACT training and the PACT role was in place. At each time point, data were collected by both the supervising pharmacist and the PACT trainee/s for the duration of a standard working week (5 days) in 10-min intervals over the 5 days. Tasks were grouped into patient-focused, dispensing and personal activities. At the final data collection, on average, pharmacists at all sites had increased the amount of time spent on total patient-focused activities, all direct activities, indirect activities and supportive activities, by a mean 37%. When data were analysed from only those sites with <25% missing data (n=3), pharmacists' total patient-focused activities increased by a mean 19% and their dispensing activities decreased by a mean 20%.

Comment: Many readers will be aware that the pilot reported in this paper was conducted in New Zealand and the full training programme is now available via the Pharmaceutical Society of New Zealand. Implications for workflow such as the point at which an appropriateness check by the pharmacist occurs are among the issues discussed. In view of the rapidly evolving health environment, adjustment of workflow is likely to be an ongoing process for the pharmacy sector. Another example – electronic transmission of prescriptions – was discussed in Issue 41.

Reference: Res Social Adm Pharm. 2017 May 11. [Epub ahead of print]
Abstract

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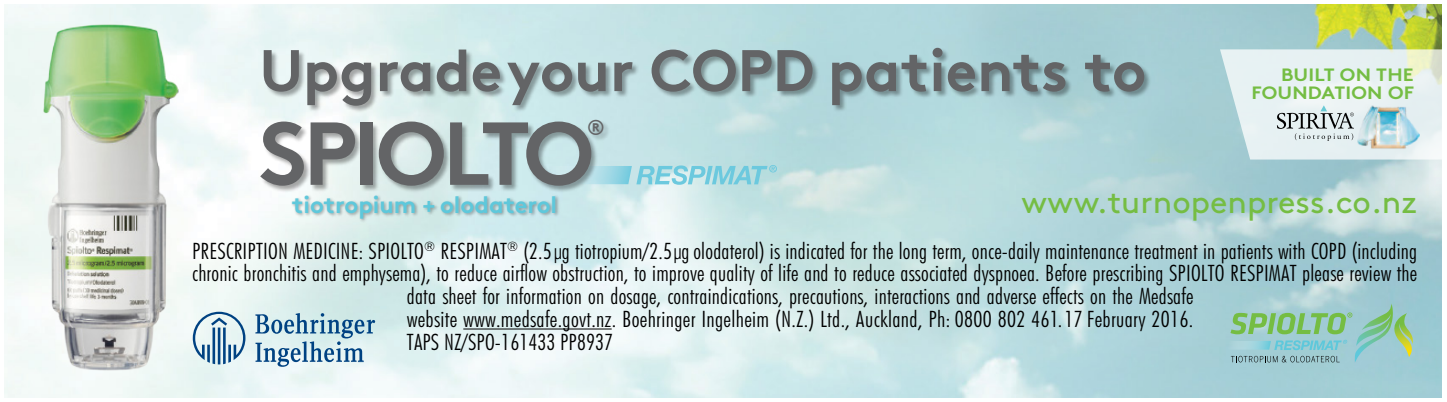

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BSR and BHPR guideline for the prescription and monitoring of non-biologic disease-modifying anti-rheumatic drugs

Authors: Ledingham J et al.

Summary: The British Society for Rheumatology (BSR) and the British Health Professionals in Rheumatology (BHPR) have published updated recommendations on the prescription and monitoring of non-biological disease-modifying antirheumatic drugs (DMARDs), replacing recommendations released in 2008. This guideline is intended to provide evidence-based recommendations for clinicians prescribing synthetic, non-biologic DMARDs commonly used in the management of multi-system rheumatic conditions. Key recommendations covered by the guideline have considered specific questions in relation to each DMARD, including:

- What baseline screening is needed prior to drug initiation?
- What impact does co-morbidity have for prescribers?
- What routine monitoring is needed?
- When should therapy be interrupted?

Comment: This guideline highlights how DMARD use has evolved over recent decades, including earlier initiation in the disease course. Although the goal of the document is to provide evidence-based recommendations for prescribing clinicians, it will also be useful for provision of pharmaceutical care. Situations that often prompt questions, such as peri-operative management and intercurrent infections, are addressed.

Reference: Rheumatology (Oxford). 2017;56(6):865-8
Abstract

Learning to prescribe through co-working: junior doctors, pharmacists and consultants

Authors: Noble C et al.

Summary: This qualitative investigation, conducted in an Australian tertiary hospital, explored how the interdependent process of co-working amongst junior doctors (n=11), consultants (n=10) and pharmacists (n=13) can most effectively develop junior doctors' prescribing capacities as part of everyday practice in busy health care settings. Each participant took part in a one-off semi-structured face-to-face interview, guided by a specific set of topics. The interviews undertaken with junior doctors sought to determine how they had developed as prescribers and what and who had contributed to this development. Pharmacists and consultants were questioned on how they and workplace factors contributed to junior doctors' development as prescribers. Thematic analysis of the interview material demonstrated that learning how to prescribe safely and effectively is a highly interdependent process. In particular, junior doctors were dependent on co-working with consultants and pharmacists. Three inter-related themes were identified that related to co-working between pharmacists and junior doctors and learning to prescribe in the workplace: (i) the prescribing readiness of junior doctors; (ii) the need for accessible, supportive and authoritative guidance; and (iii) the challenges of pharmacists co-working as outsiders.

Comment: This work helps to make explicit the oft-unspoken role of pharmacists in the development of the prescribing skills of junior doctors. It includes several suggestions on how to improve the effectiveness of this role, including shifting from a focus on error identification to a more formalised collaborative approach with consultants in the development of junior doctor prescribing competency.

Reference: Med Educ. 2017;51(4):442-51
Abstract

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Disclaimer: This publication is not intended as a replacement for regular medical education but to assist in the process. The reviews are a summarised interpretation of the published study and reflect the opinion of the writer rather than those of the research group or scientific journal. It is suggested readers review the full trial data before forming a final conclusion on its merits.

Research Review publications are intended for New Zealand health professionals.

Patient preferences for cardiovascular preventive medication: a systematic review

Authors: Albarqouni L et al.

Summary: This systematic review included 22 studies with a total of 17,751 participants who were asked about their willingness to commence a medication to prevent cardiovascular (CV) disease. These studies contributed 63 estimates of minimum acceptable risk reduction: 14 studies contributed 28 estimates in the form of number needed to treat (NNT); 12 studies contributed 22 estimates in the form of absolute risk reduction (ARR) and 6 studies contributed 13 estimates in the form of prolongation of life (POL). Of those studies that presented the CV benefits in the form of POL, 39% to 54% (average: 48%) of participants would consider taking a medication if it prolonged life by <8 months and 56% to 73% (average: 64%) if it prolonged life by ≥8 months. In studies that presented the CV benefits using ARR, 42% to 72% (average: 54%) of participants would consider taking a medication that reduces their 5-year cardiovascular disease (CVD) risk by <3% and 50% to 89% (average: 77%) would consider taking a medication that reduces their 5-year CVD risk by ≥3%. In studies that presented the CV benefits using 5-year NNT, 31% to 81% (average: 60%) of participants would consider taking a medication with an NNT of >30 and 46% to 87% (average: 71%) with an NNT of ≤30.

Comment: This article reflects a growing body of work supporting a shift towards an increasingly shared approach to clinical decision-making. The authors point out that while guideline panels may assume that benefits of a preventive intervention outweigh any potential harm, individual patients may not agree. Their results confirm this, observing wide variation among patients where some accept any gain and others are not willing to consider medication at all. This is an important, evolving area of research and practice.

Reference: Heart. 2017 May 13. [Epub ahead of print]
Abstract

Sleep DownUnder 2017
25 October – 28 October 2017
SkyCity Auckland Convention Centre
Auckland, New Zealand

Interventions to improve adherence to inhaled steroids for asthma

Authors: Normansell R et al.

Summary: This analysis included 39 randomised controlled trials that compared interventions intended to improve adherence to inhaled corticosteroids (ICS) versus usual care or an alternative intervention among adults and children with asthma. All were currently receiving an ICS as monotherapy or in combination with a long-acting beta$_2$-agonist (LABA). The studies were grouped into 4 comparisons: adherence education versus control (n=20); electronic trackers or reminders versus control (n=11); simplified drug regimens versus usual drug regimens (n=4); and school-based directly observed therapy (n=3). Follow-up ranged from 2 months to 2 years (median 6 months), and trials were conducted mainly in high-income countries. 28 trials (n=16,303) contributed data to at least one meta-analysis. In pooled analyses, adherence education, electronic trackers or reminders and simplified regimens showed better adherence than controls. However, the clinical relevance of this improvement was reduced by risk of bias and inconsistency. Around half of the studies were considered to be at high risk for attrition bias and selective outcome reporting. None of the interventions resulted in clearly observable benefits for the primary clinical outcomes of exacerbations requiring an oral corticosteroid (evidence of very low to low quality) and asthma control (evidence of low to moderate quality), nor for the secondary outcomes of unscheduled visits (evidence of very low to moderate quality) and quality of life (evidence of low to moderate quality).

Comment: The previous issue of Pharmacy Research Review included a paper emphasising the impact of pharmacist education on inhaler technique. While confirming that education interventions improve inhaler technique and adherence, disappointingly for those living with asthma, this systematic review found that current evidence is unclear on the impact this has on asthma control. The authors provide recommendations to improve future research.

Reference: Cochrane Database Syst Rev. 2017;4:CD012226
Abstract

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Mobile phone text messaging to improve medication adherence in secondary prevention of cardiovascular disease (Cochrane)

Authors: Adler AJ et al.

Summary: These researchers systematically reviewed the evidence (up to November 2016) about the effects of mobile phone text messaging in patients with established arterial occlusive events on medication adherence, fatal and non-fatal CV events, and adverse effects. Seven trials including a total of 1310 participants were included in the analysis. These trials compared the use of text message-based reminders to help patients adhere to their medications with no such intervention; follow-up ranged from 1 month to 12 months. The studies used very different methods and definitions, so could not be pooled for meta-analysis. Moreover, most of the evidence was from high-income countries, with 2 studies conducted in an upper middle-income country (China, Malaysia), and 1 study from a lower middle-income country (Pakistan). The quality of the evidence was deemed very low.

Comment: As the authors highlight, there is a great deal of enthusiasm for mobile health (also known as mHealth) interventions among researchers and policymakers, but there is still limited evidence for its effectiveness. This Cochrane review indeed suggests that while promising, more evidence is needed to fully understand the potential of this new technology.

Reference: Cochrane Database Syst Rev. 2017;4:CD011851
Abstract

GPs' views and experiences of prescribing non-steroidal anti-inflammatory drugs: a qualitative study

Authors: McDonald J et al.

Summary: This New Zealand group of researchers explored GPs' perceptions of NSAID risks and benefits. Fifteen GPs participated in face-to-face, semi-structured, qualitative interviews. The GPs were all from one city, in a metropolitan area that included diverse socioeconomic areas located in inner city and suburban practices. The analysis uncovered 3 main themes illustrating GPs' key concerns with managing NSAID risks:

1. Perceptions of risks and benefits of NSAIDs: GPs expressed differing attitudes towards prescribing medication generally. GPs were aware of the general risks of NSAIDs but weighed these up against specific risk factors and potential benefits for particular patients. They were most concerned about long-term use, risks for children, older people, and patients with comorbidities.
2. Assessing and mitigating risks when prescribing NSAIDs: GPs considered gastric, cardiac, and renal risks of patients as well as drug interactions. Mitigation strategies included alternative treatment, choice and dose of NSAID, and use of gastroprotective agents.
3. Other factors impacting on NSAID risks: particularly patient expectations and over-the-counter (OTC) availability.

Comment: Although this study explores GP views, given their OTC availability, pharmacists may be involved in similar decision-making around the use of NSAIDs. While not explicitly stated by the authors, I see this research as linked to the increased emphasis on shared decision-making mentioned earlier in this issue. The lack of tools to use in discussing risks and benefits with patients is highlighted and identified as an area of future work.

Reference: BJGP Open 30 May 2017; bjgpopen17X100869
Abstract

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Independent commentary by Chloë Campbell

Chloë Campbell has worked in hospital and community pharmacy in New Zealand and the United Kingdom, specialising in Medicines Information for 14+ years. She is currently co-convenor of the Medicines Information and Clinical Pharmacy Special Interest Group of the New Zealand Hospital Pharmacists Association and a member of the Editorial Advisory Board of the New Zealand Formulary. **FOR FULL BIO CLICK HERE**

Investigating the physical stability of repackaged medicines stored into commercially available multicompartment compliance aids (MCAs)

Authors: Raimi-Abraham BT et al.

Summary: Outcomes are reported from this UK laboratory evaluation of the physical stability of atenolol, aspirin and lansoprazole dosage formulations repackaged together in two different commercially available multicompartment compliance aids (MCAs). After 8 weeks of storage (under controlled ambient conditions), changes in the disintegration (tablets only) and dissolution properties (all formulations) were examined as according to British Pharmacopoeia (BP) specifications. Changes in solid-dosage form quality were apparent when repackaged into MCAs compared to manufacturers packaging, resulting in differences in *in vitro* dissolution performance. Nevertheless, overall product performance was acceptable and within BP specifications.

Comment: This open-access article reiterates the need for improved knowledge in this area (see Issue 47) indicating that only a handful of medications have been investigated for their stability following repackaging into MCAs. This study found the three products tested for physical stability (atenolol, aspirin and lansoprazole) performed within BP specifications but recommended further chemical stability investigations.

Reference: J Pharm Health Serv Res. 2017;8(2):81-9
Abstract

Number needed to treat (NNT) in clinical literature: an appraisal

Authors: Mendes D et al.

Summary: These researchers sought to determine whether the methods used for calculating the number needed to treat (NNT) in studies published in medical journals are applied according to basic methodological recommendations. A search of the top 25 high-impact factor journals in the "General and/or Internal Medicine" category identified 138 citations assessing pharmacological interventions and reporting NNTs; 51 of the papers satisfied the inclusion criteria for review. Twenty-three studies were meta-analyses, 17 were clinical trials, 9 were cohort studies and 2 were case–control studies. Binary variables were more often used (n=41) than time-to-event (n=10) outcomes. Twenty-six studies (51.0%) reported only NNT to benefit (NNTB), 14 (27.5%) reported both NNTB and NNT to harm (NNTH), and 11 (21.6%) reported only NNTH. Baseline risk (n=37), time horizon (n=38), and confidence intervals (n=32) for NNTs were not always reported. Fifteen studies failed to follow basic methodological recommendations to calculate NNTs. A considerable proportion of studies, particularly meta-analyses (56.5%), applied non-recommended methods.

Comment: This is a useful study for those involved in assessing and comparing treatment benefits and harms and serves as a reminder to keep on your toes when working with the medical literature, even high-impact, peer-reviewed journals. It is also relevant to patient-centred care and shared decision-making because NNT figures (as well as their companion, number needed to harm) often underpin patient decision aid tools that pharmacists may use in practice or be involved in developing.

Reference: BMC Med. 2017;15:112
Abstract

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.

Group 1 points may be allocated at 1 point per hour for any further reading of the full research papers (via the links). Accreditation number: 2016/16, Expiry 26/10/18.

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Perceptions and attitudes of community pharmacists toward professional ethics and ethical dilemmas in the workplace

Authors: Rodríguez JV et al.

Summary: The Croatian professional code of ethics for pharmacists has not been updated for over 20 years. This investigation explored the ways in which practising community pharmacists implement ethical considerations in pharmacy practice, how often they face certain ethical dilemmas and how they resolve them. The survey sampled included 252 community pharmacists and pre-licensing trainees from Zagreb, Croatia. Two-thirds (62.7%) reported that they face ethical dilemmas in everyday work. Nearly all (94.4%) are familiar with the current professional code of ethics in Croatia, but less than half (47.6%) think that the code reflects the changes that the pharmacy profession faces today. Most pharmacists (83.3%) solve ethical dilemmas on their own, while almost as many (75.4%) consider that they lack adequate training to deal with ethical dilemmas.

Comment: This study is set in Croatia, so while it does not directly relate to local practice, it is of interest, since the Pharmacy Council is in the process of reviewing the New Zealand Code of Ethics. One of the goals of this research was to identify issues from practice that may not be currently addressed adequately in their code, though admittedly theirs is a bit older than ours – it hasn't been updated for 20 years! Issues raised included financial and commercial pressure on pharmacists to act in ways that they consider to be at odds with ethical guidelines.

Reference: Res Social Adm Pharm. 2017 May 22. [Epub ahead of print]
Abstract

Time spent reading this publication has been approved for CME for Royal New Zealand College of General Practitioners (RNZCGP) General Practice Educational Programme Stage 2 (GPEP2) and the Maintenance of Professional Standards (MOPS) purposes, provided that a Learning Reflection Form is completed. Please **CLICK HERE** to download your CPD MOPS Learning Reflection Form. One form per review read would be required.

Time spent reading this publication has been approved for CNE by The College of Nurses Aotearoa (NZ) for RNs and NPs. For more information on how to claim CNE hours please **CLICK HERE**

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