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Review Article

Clinical medication review in Australia: A systematic review

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Abstract

Background: Clinical medication review (CMR) is a structured and collaborative service aimed at identifying and resolving medication-related problems (MRPs). This is the first systematic review of CMR research in Australia.

Objective: To systematically review the processes and outcomes of CMR in community-settings in Australia.

Methods: MEDLINE, EMBASE, International Pharmaceutical Abstracts (IPA), Cumulative Index to Nursing and Allied Health Literature (CINAHL), Cochrane Library and the grey literature were searched from 2000 to February 2015. All study designs were considered. Data extraction and quality assessment were performed independently by two investigators.

Results: Nine controlled studies, 34 observational and uncontrolled studies, 11 qualitative studies (focus groups and interviews) and nine survey studies were included. The CMRs resulted in identification of MRPs ($n = 15$ studies, mean 3.6 MPRs per CMR) and improved adherence ($n = 3$). Reductions in numbers of medications prescribed ($n = 3$ studies), hospitalizations ($n = 3$), potentially inappropriate prescribing ($n = 3$) and costs ($n = 6$) were demonstrated. Comparisons to a control group, predominately non-recipients of CMR, were made in eleven of 43 studies. Evidence supports additional models that promote interprofessional collaboration and timely referral following hospital discharge. Qualitative research identified low awareness of CMR among eligible non-recipients, while benefits were perceived to outweigh barriers to implementation. Underserved populations include indigenous and culturally and linguistically diverse people, recipients of palliative care, those recently discharged from hospital, people with poor medication adherence, those in rural and remote areas, older males, and younger people with long-term, persistent or serious health problems.

Conclusion: The available evidence suggests CMR is beneficial in improving the quality use of medications and health outcomes. However, lack of comparator groups in many observational studies limited the

Conflict of interests: All authors are pharmacists employed at academic institutions or public hospitals. The authors are responsible for the analysis and interpretation of data; writing of the report; and in the decision to submit the report for publication.

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strength of conclusions in relation to the impact on clinical outcomes. Addressing access gaps for underserved populations, implementing additional referral pathways, and facilitating greater collaboration between the health professionals represent opportunities for further improvement.

Keywords: Drug-related side effects and adverse reactions; Medication therapy management; Community pharmacy services; Pharmacists; Systematic review; Inappropriate prescribing

Introduction

Strategies to prevent adverse drug events (ADEs) have attracted much research, policy and practice interest over the past 20 years.[1,2] One strategy to identify and resolve medication-related problems (MRPs) is a clinical medication review (CMR). A CMR is a structured and collaborative service provided by pharmacists and general medical practitioners (GPs).[3] Pharmacists are presently remunerated to conduct CMRs in countries including Australia, New Zealand (NZ), United Kingdom (UK) and United States of America (USA).[4,5]

The Home Medicines Review (HMR) is a specific type of remunerated CMR service in Australia provided by an accredited pharmacist, upon referral of a GP, to people living independently in the community.[6] Specific referral criteria have not been mandated, but guidelines suggest the service be targeted to those who, due to the complexity of their medication regimen, age or social circumstances are at high risk of medication misadventure.[7]

CMR programs in the USA (Medication Therapy Management, MTM) and NZ (Medicines Therapy Assessment, MTA and Comprehensive Medicines Management, CMM) differ in their process, eligibility and referral criteria.[8,9] The use of multiple medications and/or chronic conditions are eligibility criteria of all programs. Unlike the HMR program, referrals may be made by individuals other than a GP, including a pharmacist, other healthcare professional or the patient and can be conducted in settings other the home including the community pharmacy or clinic.

Recently practitioners and researchers have explored other CMR models in Australia, including co-location of pharmacists in GP clinics,[10,11] and a hospital-based referral for post-discharge CMRs.[12] There has also been research into perceived barriers to implementing CMRs,[13,14] and initiatives to promote greater uptake among those at high risk of ADEs.[15] While the development and implementation of CMR has continued to be the subject of research, there has been no previous systematic review of Australian CMR research. The objective of this paper was to systematically review the processes and outcomes of CMR in community-settings in Australia.

Methods

This systematic review was performed in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement.[16]

Search strategy

MEDLINE, EMBASE, International Pharmaceutical Abstracts (IPA), Cumulative Index to Nursing and Allied Health Literature (CINAHL) and the Cochrane Library were searched between 2000 and February 2015. Subject headings and truncated keywords related to pharmacy and medication management were used (See Appendix 1 for the full search strategy).

A manual search of the Journal of Pharmacy Practice and Research (JPPR), published by the Society of Hospital Pharmacists of Australia (SHPA), and Australian Pharmacist, published by the Pharmaceutical Society of Australia (PSA), was undertaken from January 2000 to February 2015. Additionally, a search of the grey literature was performed. This included a manual search of abstracts from poster and oral presentations at the 2012, 2013 and 2014 SHPA National Conference, a keyword search of the Australian Quality Use of Medicine (QUM) project database, known as the QUMmap, a search of unpublished doctoral theses, and the Australian Government and Pharmacy Guild of Australia websites. If a potentially relevant conference abstract was identified then a specific author and title search was performed using the above databases to identify whether a full paper had been published. A keyword search via PubMed was conducted to identify additional articles not yet indexed into MEDLINE and