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Invited Perspective

Medication management policy, practice and research in Australian residential aged care: Current and future directions

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ABSTRACT

Eight percent of Australians aged 65 years and over receive residential aged care each year. Residents are increasingly older, frailer and have complex care needs on entry to residential aged care. Up to 63% of Australian residents of aged care facilities take nine or more medications regularly. Together, these factors place residents at high risk of adverse drug events. This paper reviews medication-related policies, practices and research in Australian residential aged care. Complex processes underpin prescribing, supply and administration of medications in aged care facilities. A broad range of policies and resources are available to assist health professionals, aged care facilities and residents to optimise medication management. These include national guiding principles, a standardised national medication chart, clinical medication reviews and facility accreditation standards. Recent Australian interventions have improved medication use in residential aged care facilities. Generating evidence for prescribing and deprescribing that is specific to residential aged care, health workforce reform, medication-related quality indicators and inter-professional education in aged care are important steps toward optimising medication use in this setting.

1. Introduction

Residential aged care facilities (RACFs) in Australia, synonymous with nursing homes or long-term care facilities in other countries, provide supported accommodation for people with care needs that can no longer be met in their own homes [1]. Over 270,000 older Australians receive residential aged care over a 12-month period, corresponding to eight percent of all Australians aged 65 years and older [1].

Given the emphasis on supporting people to remain in their own homes for as long as possible, residents are increasingly older and frailer on entry to residential aged care. Residents often have complex medical needs, a high prevalence of geriatric syndromes and take multiple medications. Together, these factors place residents at high risk of adverse drug events (ADEs). Evidence suggests that 20% to 30% of unplanned hospitalisations for Australians aged 65 years and over are medication-related [2], and internationally,

Abbreviations: ACAT, Aged Care Assessment Team; ADE, adverse drug event; BZD, benzodiazepine; DAA, dose administration aid; DDD, defined daily dose; GP, general medical practitioner; HYVET, Hypertension in the Very Elderly Trial; MAC, Medication Advisory Committee; PARTAGE, Predictive Values of Blood Pressure and Arterial Stiffness in Institutionalized Very Aged Population; PRN, pro re nata (when required); QUM, Quality Use of Medicines; RACF, residential aged care facility; RMMR, residential medication management review.

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studies conducted in the residential aged care setting show there are between one and seven ADEs per 100 resident-months [3].

Ironically, while residents of aged care facilities are among the highest consumers of medications, they are also among the least researched. It has been estimated that only 2% of research studies involving older people are undertaken in the residential aged care setting [4]. Generating evidence that is specific to residential aged care is important because the benefit–to–risk ratio of pharmacotherapy is not static throughout older age. Age-related changes in pharmacokinetics and pharmacodynamics combined with changing goals of care mean that medications prescribed appropriately in community settings may be unnecessary or inappropriate in the residential aged care setting [5,6]. It may not be valid to extrapolate evidence from clinical and observational studies of community dwelling older people, who are typically more robust and independent in activities of daily living, to the residential aged care setting. For example, the Hypertension in the Very Elderly Trial (HYVET) demonstrated the benefits of antihypertensive treatment in patients aged 80 years and older but people with dementia and those who required nursing care were excluded [7]. The recent Predictive Values of Blood Pressure and Arterial Stiffness in Institutionalized Very Aged Population (PARTAGE) study reported that combination antihypertensive therapy was associated with increased mortality in nursing home residents with systolic blood pressure less than 130 mm Hg [8].

Polypharmacy is common among residents of aged care facilities, with international literature suggesting up to 74% of residents take nine or more medications [9]. Evidence from two Australian studies suggests between 39% and 63% of residents take nine or more medications on a regular basis [10,11], although these studies used different methods to count the number of medications. Furthermore, studies conducted in Australian RACFs between 1993 and 2009 demonstrate that up to two thirds of residents receive psychotropic medications [12–15]. Recent and unpublished data suggest the prevalence of antipsychotic use in RACFs may be decreasing over time, while the prevalence of antidepressant and opioid use is increasing [16,17]. Treatment with psychotropic medications such as antipsychotics, benzodiazepines or antidepressants is indicated for some residents; however, these medications are sometimes used inappropriately, for longer periods than necessary or in high doses [18]. Additionally, data from medication review reports for residents of aged care facilities in Australia report an average of two to five medication-related problems per resident [19]. Together, these findings suggest although care has improved, there is a need to further improve medication management among residents of aged care facilities.

Understanding medication-related policies and practices in residential aged care is essential to translate research and improve care in this setting. This paper provides an overview of medication management in Australian RACFs. Existing policies and practices to optimise medication use in this setting are discussed. We also review Australian research studies published in the last five years that report outcomes of interventions to optimise medication use within RACFs. Search terms are listed in Supplementary File 1.

2. Overview of medication management in Australian aged care facilities

Australian Government policy and clinical practice guidelines recognise that medication management in Australian RACFs requires a multidisciplinary approach [20,21]. Improving our understanding of this process, and times when medication safety can be compromised, can further optimise medication use in aged care facilities. The medication management cycle describes the key steps and background processes that underpin medication use in all settings, including RACFs (Fig. 1) [22]. Importantly, the cycle provides a framework for understanding and improving medication management.

Complex processes underpin prescribing, supply and administration of medications in RACFs [21,23]. Many residents consult a new general medical practitioner (GP) and have medications dispensed from a new community pharmacy after entering the facility. Medications are prescribed by GPs who visit the RACF periodically as required, but are not available onsite. In Australia, aged care providers do not routinely employ GPs, however some providers employ onsite nurse practitioners with prescribing rights [24]. Uptake is low but increasing, with nurse practitioners comprising 0.2% of the residential aged care workforce in 2012 [25]. The use of nurse practitioners is limited by their scope of practice, which is often focussed on a specific area of practice, such as palliative care. A randomised controlled trial of employing GPs in RACFs with primary outcomes including hospitalisations, falls and polypharmacy is currently underway in Tasmania [26].

Medications are dispensed by an off-site community pharmacy based on traditional prescriptions or the National Residential Medication Chart. The pharmacist is often requested to pack oral medications into dose administration aids (DAAs) (also referred to as medication organisers, blister packs or unit-dose sachets) to facilitate administration by RACF staff. Preparations such as inhalers, injections, topical products and medications that are unstable after removal from the original packaging are supplied separately. Medication changes need to be communicated to the community pharmacy in a timely manner so the pharmacy can repack DAAs and/or supply new medications [23]. The community pharmacy usually delivers medications directly to the RACF. At present, it is rare for aged care providers to directly employ pharmacists as members of staff to coordinate or deliver clinical medication services.

The physical separation between pharmacies, GPs and RACFs means that health care providers spend a considerable amount of time communicating between each other. In a previous Australian study, RACF staff reported contacting GPs or the community pharmacy a median of seven times per shift regarding medication issues, with 11% of RACF staff spending more than half an hour per shift communicating with the pharmacy and 13% spending more than half an hour communicating with GPs about medications [27].

The majority of residents are reliant on staff for medication administration. Although relatively uncommon in practice, residents can self-administer medications if they have been assessed as competent to do so [21]. In some RACFs, medications are administered by care workers, who receive additional training to be deemed competent to administer medications, but have less medication training than nursing staff [28]. Staff need to cross-check medication charts and DAAs before administering medications to each resident [28]. Medication administration can be challenging due to polypharmacy, complex medication regimens, resident swallowing difficulties and refusal to take medication [29]. Staff may need to request alternative dosage forms or crush certain medications for residents with swallowing difficulties. Observational data collected from one Australian RACF suggests that facility staff spend between 2.5 and 4.5 h in the morning medication round, averaging 200 s (±119 s) per resident [30]. Nurses and care workers also play a major role in the decision to administer 'pro re nata' (when required or prn) medications [29]. There is limited capacity to administer regular parenteral medications such as intravenous antibiotics and this may necessitate hospitalisation.

An increasing number of RACFs are using electronic medication charts in place of traditional paper-based medication charts. A new cloud-based electronic medication management system in which prescriptions issued by GPs populate RACF records and are sent directly to each resident's pharmacy has been trialled [31]. How-