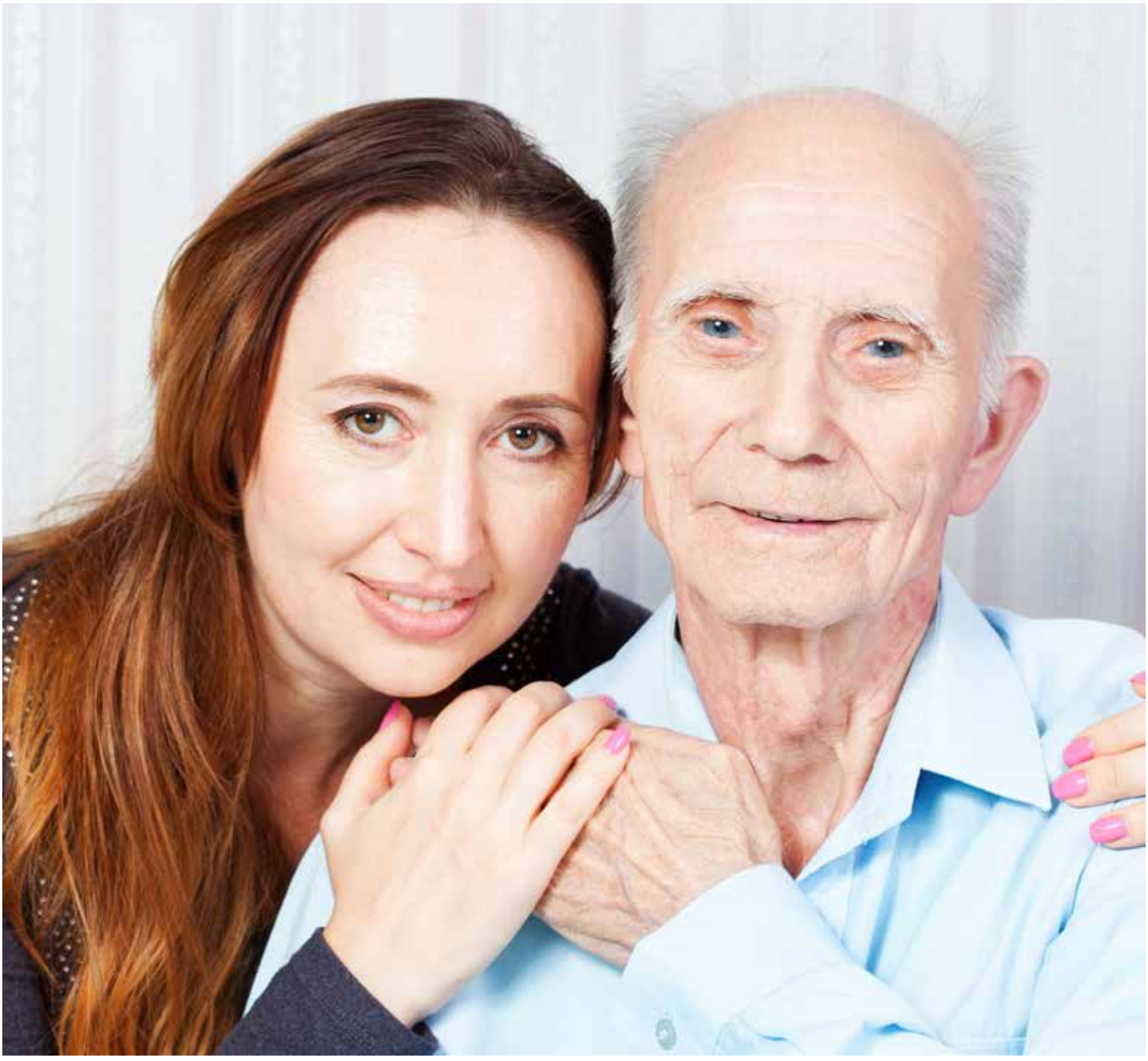
Pharmaceutical Society of Australia

JULY 2019

SUBMISSION TO THE ROYAL COMMISSION INTO **AGED CARE QUALITY AND SAFETY**



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Terms of reference

The Royal Commission into Aged Care Quality and Safety (the 'Commission') is inquiring into the following matters:

a. the quality of aged care services provided to Australians, the extent to which those services meet the needs of the people accessing them, the extent of substandard care being provided, including mistreatment and all forms of abuse, the causes of any systemic failures, and any actions that should be taken in response;

b. how best to deliver aged care services to:

   i. people with disabilities residing in aged care facilities, including younger people; and

   ii. the increasing number of Australians living with dementia, having regard to the importance of dementia care for the future of aged care services;

c. the future challenges and opportunities for delivering accessible, affordable and high quality aged care services in Australia, including:

   i. in the context of changing demographics and preferences, in particular people's desire to remain living at home as they age; and

   ii. in remote, rural and regional Australia;

d. what the Australian Government, aged care industry, Australian families and the wider community can do to strengthen the system of aged care services to ensure that the services provided are of high quality and safe;

e. how to ensure that aged care services are personcentred, including through allowing people to exercise greater choice, control and independence in relation to their care, and improving engagement with families and carers on carerelated matters;

e. how best to deliver aged care services in a sustainable way, including through innovative models of care, increased use of technology, and investment in the aged care workforce and capital infrastructure;

f. any matter reasonably incidental to a matter referred to in paragraphs (a) to (f) or that [the Commissioners] believe is reasonably relevant to the inquiry.

Scope of this submission

The Pharmaceutical Society of Australia (PSA) is pleased to make this submission to the Commission. Noting the broad and complex scope of this inquiry, PSA has focused its comments on issues relating to the scope of professional practice of pharmacists in providing the best care possible for all residents in aged care facilities.

About PSA

PSA is the only Australian Government-recognised peak national professional pharmacy organisation representing all of Australia's 31,000 pharmacists working in all sectors and across all locations.

PSA is committed to supporting pharmacists in helping Australians to access quality, safe, equitable, efficient and effective health care. PSA believes the expertise of pharmacists can be better utilised to address the health care needs of all Australians.

PSA works to identify, unlock and advance opportunities for pharmacists to realise their full potential, to be appropriately recognised and fairly remunerated.

PSA has a strong and engaged membership base that provides high-quality health care and are the custodians for safe and effective medicine use for the Australian community.

PSA leads and supports innovative and evidence-based healthcare service delivery by pharmacists. PSA provides high-quality practitioner development and practice support to pharmacists and is the custodian of the professional practice standards and guidelines to ensure quality and integrity in the practice of pharmacy.

Summary and recommendations

The use of medicines is the most common healthcare intervention. Used appropriately, medicines can transform people's health. We know however that problems with medicine use are also common, particularly amongst older Australians. The Medicine safety: Take care report released by PSA this year showed that 98% of residents in aged care facilities have at least one medicine-related problem and over half are exposed to at least one potentially inappropriate medicine.

Similarly, Dementia Australia has previously reported[2] that about half of all aged care residents, and up to 80% of residents with dementia, were receiving at least one psychotropic medication. This was despite evidence showing only about 20% of patients with behavioural and psychological symptoms of dementia would receive benefit from antipsychotics and that these medicines can be associated with significant adverse outcomes, including falls, cognitive impairment and increased risk of stroke and death.

Disappointingly, pharmacists – who possess unique medicines and medication management expertise – are not routinely considered or included in the delivery of healthcare services. Hence, PSA continues to strongly advocate for greater opportunities for pharmacists to contribute to the care of all Australians. Pharmacists must be recognised as core members of the healthcare team in all settings wherever medicines are used. Pharmacists are best placed to improve decision making to ensure the safe and optimal use of medicines for older Australians.

> The *Medicine safety: Take care* report[1] released by PSA this year showed that 98% of residents in aged care facilities have at least one medicine-related problem and over half are exposed to at least one potentially inappropriate medicine.

To date, during this Royal Commission, medicine-related issues which are negatively impacting on the quality and safety of services and care provided to residents of aged care facilities have already been raised and highlighted. Through this submission, PSA presents some of the issues encountered by pharmacists who are currently delivering care to residents and/or services to facilities. The issues outlined will not be new to the Commission but PSA believes it is important to provide the perspective of pharmacists. Sadly, many pharmacists working with or within aged care facilities echoed concerns about unsafe practices affecting residents.

> Consumers want more from pharmacists and pharmacists want to provide more effective care to consumers.[3]

Pharmacists also expressed frustration and disappointment that in many instances system, cultural or funding barriers meant that residents and facilities were not able to benefit from their medicines and medication management expertise. Nevertheless, being solution-focused, pharmacists shared with PSA examples of how they are working to help resolve or ameliorate some of those issues or overcome barriers.

However, such efforts are not necessarily coordinated, nor sustainable. The service arrangements in place currently and limited funding available are grossly inadequate for pharmacists to deliver on the range of medicine

and medication management services that could benefit the aged care sector, improve quality and safety, and minimise harm to residents.

A pharmacist service delivery model that PSA has been advocating for and would like to re-iterate to the Commission is to genuinely embed pharmacists in aged care facilities.[1] There is some progress being made in this area, and several witnesses to the Commission's hearings and elsewhere have made reference to this arrangement being of benefit. It is PSA's firm view that this is an opportune time to consider this model of care and service delivery to be expanded nationally so that all aged care facilities in Australia can ensure improved medication safety, and provide residents greater access to timely, equitable, efficient and effective medication management services.

RECOMMENDATIONS

The health of the aged care sector matters a great deal to pharmacists. Many pharmacists already contribute to activities and services to improve resident safety and system changes impacting on quality and safety in aged care facilities. However older Australians, particularly aged care residents, deserve more. There must be a stronger connection between health care and aged care.

The workforce of pharmacists is equipped and eager to contribute. Pharmacists' expertise must be recognised more broadly and their skills used widely in aged care. Structural arrangements or funding program business rules must not hinder pharmacists from contributing their unique medication management expertise for the benefit of residents and aged care facilities.

The evidence base of the impact of pharmacists' services to aged care facilities and residents is continuing to build as innovative models of practice and delivery of care are trialled. It is time to expand these to larger scale, national pilot programs and progress to implementation, where appropriate, to benefit everyone in aged care.

Pharmacists are committed to delivering accessible, affordable and high quality aged care services which are resident-centred, evidence-based, collaborative and safe. The following activities or services are highlighted to the Commission for consideration as recommendations arising from this inquiry.

Strengthening the delivery of safe and high quality pharmacy services

- ***Clinical governance principles***. A set of clinical governance principles for pharmacy services was recently released by PSA. This robust framework should now be used to guide pharmacist-delivered aged care services and activities to promote service delivery which is resident-centred, transparent, safe, of high quality and clinically appropriate. PSA should be tasked and supported to undertake this work as a priority.

Improving resident safety and health outcomes through pharmacist-delivered activities and collaborative services which promote quality use of medicines

- ***Education and training of the aged care workforce***. Pharmacists can support the aged care workforce through education and training of facility staff on medicines and medication management issues. This will help address the reported gaps in standards of some facility staff who are required to assist with residents' medication management.
- ***Residential Medication Management Reviews (RMMRs)***. All residents in aged care facilities, but in particular those at risk of medication misadventure, should have timely access to an RMMR conducted by a pharmacist. The opportunity to conduct an RMMR, where clinically warranted, should not be constrained by arrangements of a funding model as they are currently.
- ***Quality use of medicines (QUM) service***. Despite several options for the delivery of QUM services to aged care facilities, the arrangements and funding are inadequate for pharmacists to be able to deliver a service which genuinely benefits residents and facilities. Appropriate investment must be made so that QUM activities are prioritised for the clinical care of residents and to improve quality and safety within aged care facilities.
- ***Dose administration aid (DAA) service***. Similar to patients in the community, residents of aged care facilities should have equitable access to subsidised DAA services when clinically warranted or where use of a DAA is mandated by the facility.
- ***Case conferences***. Multidisciplinary collaborative care is vital in managing complex chronic conditions of older people. An appropriate remuneration framework to enable geriatricians, pharmacists and other health professionals to attend case conferences and contribute to the resident's care is fundamentally important. Residents should not miss out on receiving the best care possible.

Investing in innovative models of care to improve safety and quality in aged care

- ***Embedding pharmacists in aged care facilities***. Residents in aged care facilities deserve to have timely and regular access to the expertise of a pharmacist if they require advice and support with their medicines and medication management. Pharmacists embedded in facilities can also contribute to improving quality use of medicines facility-wide and reducing harm caused by overuse of medicines. Given the successes of a small scale pilot, a national program to embed pharmacists in aged care facilities should be conducted as a priority.

Background

Professional practice of pharmacists

Pharmacy education in Australia

Typically, a person must successfully complete a four-year Bachelor of Pharmacy course (or an equivalent graduate-entry Master of Pharmacy course) followed by a one-year intern training program to be eligible to register and practise as a pharmacist in Australia.

Pharmacists have broad-base scientific training in enabling basic disciplines such as anatomy, biology and microbiology, biochemistry, chemistry, physiology and pathophysiology, epidemiology, mathematics, information and communication technology, and social pharmacy.

Pharmacists possess unique, in-depth knowledge in applied disciplines including medicinal chemistry, pharmaceutics, pharmacodynamics, pharmacokinetics, pharmacology, pharmacy practice and therapeutics.

Framework of professional and ethical standards

The practice of pharmacists is governed and supported by a comprehensive, hierarchical framework of legislation, and professional and ethical standards, as summarised in Figure 1.

FIGURE 1: Hierarchy of standards for pharmacists

A. Commonwealth, state and territory legislation provides the legal framework governing pharmacy practice.

B. The Pharmacy Board of Australia's registration standards define requirements to be met to be registered as a pharmacist in Australia. The Board's codes and guidelines may be used as evidence of what constitutes appropriate professional conduct or practice for pharmacists.

C. Codes of ethics / conduct articulate the values of the pharmacy profession and expected standards of ethical behaviour of pharmacists towards individuals, the community and society.

D. Competency standards describe the skills, attitudes and other attributes (including values and beliefs) attained by an individual based on knowledge and experience which together enable the individual to practise effectively as a pharmacist.

E. Professional practice standards (or quality standards) relate to the systems, procedures and information used by pharmacists to achieve a level of conformity and uniformity in their practice. Quality standards may be applicable to individuals or to organisations.

F. Professional guidelines are generally service- or activity-specific and provide information on how best to deliver services consistent with expected professional standards.

As the pharmacy profession's standards-setting body, PSA is the custodian of the *National competency standards framework for pharmacists in Australia*[1] (document type D in Figure 1), and also develops, maintains and promulgates its own suite of documents, including: *Code of ethics for pharmacists*[2] (C), *Professional practice standards*[3] (E), *Clinical governance principles for pharmacy services*[4] (E/F) and various guidelines (F) to support professional practice activities and pharmacist-delivered health services.

The pharmacist workforce is underpinned by this robust framework and has a strong desire to deliver services to improve the quality use of medicines by all Australians but particularly those considered to be in vulnerable population groups such as residents of aged care facilities. Pharmacists are fundamentally committed to person-centred care, evidence-based best practice, collaborative team care arrangements and quality improvement.

Contemporary pharmacist practice

Pharmacists practise in a wide and diverse range of settings although the public and patients would generally be most familiar with pharmacists in community pharmacies – which provide a strong network of accessible primary health care. As the professional standards-setting and leadership organisation for the profession, PSA is committed to ensuring pharmacists achieve scope-of-practice fulfilment in order to improve healthcare delivery and safety. Pharmacists must be recognised for their key role in health care, whatever the setting, and be supported and remunerated appropriately reflecting their skills, training and expertise.

Collaborative care is one of the fundamental features of pharmacist-delivered care. The true value of pharmacists' medication management expertise is realised when pharmacists and other healthcare professionals assume complementary roles and work cooperatively, sharing responsibility for problem solving, and together make decisions to formulate and implement a person's health management plan.

In early 2019, PSA released *Pharmacists in 2023: For patients, for our profession, for Australia's health system.*[5] The report was informed by the outcome of consultations with consumers and a range of external stakeholders, and with members of the pharmacy profession. It sets a clear agenda for pharmacist roles, now and in the future, and outlines the system changes needed for pharmacists to have greater responsibility and accountability for medicine safety, focusing on how pharmacists can be better utilised in the Australian health system.

The 11 actions for change listed (see Box 1) are what PSA regards as priorities – for patients, pharmacists and the health system – reasonably achievable by 2023.

BOX 1: Actions for change for pharmacists in 2023 to address the health needs of all Australians

1. Medicine safety – Empower and expect all pharmacists to be more responsible and accountable for medicine safety.
2. Community pharmacy – Enhance the role of community pharmacists to have a greater level of responsibility and accountability for medicines management.
3. Care teams – Embed pharmacists within healthcare teams to improve decision making for the safe and appropriate use of medicines.
4. Prescribing – Facilitate pharmacist prescribing within a collaborative care model.
5. Transitions of care – Improve pharmacist stewardship of medicine management to improve outcomes at transitions of care.
6. Health hubs – Utilise and build upon the accessibility of community pharmacies in primary care to improve consumer access to health services.
7. Workforce – Equip the pharmacist workforce, through practitioner development, to address Australia's existing and emerging health challenges.
8. Funding – Establish additional funding models and facilitate access to existing funding models to recognise the value and quality of pharmacist care.
9. Rural and remote – Allow greater flexibility in funding and delivery of pharmacist care to innovate and adapt to the unique patient needs in all areas, with specific focus on regional, rural and remote areas.
10. Research and evaluation – Develop and maintain a research culture across the pharmacist profession to ensure a robust evidence base for existing and future pharmacist programs.
11. Digital transformation – Embrace digital transformation to improve the quality use of medicines; support the delivery of safe, effective and efficient health care; and facilitate collaborative models of care.

Medicine safety in Australia

The use of medicines is the most common intervention made in health care and is steadily increasing. Over 80% of Australians aged 65 years and over, and 70% of Australians aged 45 to 64 years regularly use medicines.[9] When used appropriately medicines can deliver improvements in health and well-being, and quality of life. However, as reported,[10] with older Australians "assistance was most commonly needed for health care tasks… such as taking medications".

> Over 80% of Australians aged 65 years and over, and 70% of Australians aged 45 to 64 years regularly use medicines.

The Australian Government makes significant investments of more than $11 billion annually on medicines. Earlier this year, PSA released a pivotal report on medication safety in Australia.[11] As outlined in that report, it is concerning that 30–50% of prescribed medicines for long term conditions are not used or taken as recommended. Even more alarming are the figures which show staggering rates of medication-related problems in all parts of Australia's health care sector (see summary in Box 2).

Medication safety is a global issue. The World Health Organisation (WHO) has launched the third Global Patient Safety Challenge – *Medication without harm* – and prioritised three areas: polypharmacy, high-risk medicines and transitions of care. The Australian Commission on Safety and Quality in Health Care is developing Australia's national response to the global challenge.

The WHO recently published a technical report on medication safety in polypharmacy. In the report, PSA's Guidelines for pharmacists providing Residential Medication Management Review (RMMR) and Quality Use of Medicines (QUM) services[13] (see Attachment A) has been cited as one of the internationally available guidance documents on appropriate polypharmacy management. More information on RMMR and QUM services are provided later in this submission.

Pharmacists are experts in medication safety and the quality use of all medicines. They are responsible for ensuring medicines are used appropriately and judiciously, and to support individuals to maximise the benefits from the medicines they use. Equally, pharmacists have a role in minimising harm that may be caused by medicines and have the potential to reduce medication-related hospital admissions and adverse medication events. Pharmacists must be involved in the care of people whenever medicines are included as a component of their health management plan.

BOX 2

Medication-related hospital admissions

- 250,000 admissions annually at a cost of $1.4 billion
- 50% of this harm is preventable

After hospital discharge

- Over 90% of patients have at least one medication-related problem
- 3 in 5 discharge summaries prepared without pharmacist involvement have at least one medication error

Residential aged care

- 98% of residents have at least one medication-related problem
- Over half are exposed to at least one potentially inappropriate medicine

Community

- 1 in 5 people are suffering an adverse medication reaction at the time of a Home Medicines Review
- 1.2 million Australians have experienced an adverse medication event in the last 6 months

Medicine safety and medication management in aged care

The care and medication management requirements in aged care are becoming increasingly complex. The health of older and frailer people can be complicated by the presence of many chronic conditions and the need to take multiple medicines.

The risk of adverse medication-related events generally increases with the number of medicines prescribed. Aged-related physical changes and declining function affect how medicines act in the body, often giving rise to medication-related problems. Furthermore, the need for high-risk medicines is greater with conditions being reported[14] in aged care residents such as: 86% with at least one diagnosed mental health or behavioural condition, 52% with dementia and 49% with a diagnosis of depression.

Other information and figures reported include:[15]

- In 2015, 81% of residents were exposed to at least one potentially inappropriate medicine. The use of potentially inappropriate medicines in residents of aged care facilities has been shown to increase their risk of hospitalisation.
- In residents with chronic kidney disease, 16% were prescribed a medicine at a dose which was inappropriate for their level of renal function.

In 2015, 81% of residents were exposed to at least one potentially inappropriate medicine.

Clearly, medication management services play a paramount role in supporting the safe and effective use of medicines for those living in aged care facilities.

The background paper to the Royal Commission reported[16] on deficiencies in the current aged care system, viz.:

- Performance against the medication management standard (2.7) was ranked fourth highest in terms of non-compliance.
- The most common issues raised in complaints were about medication administration and management, personal and oral hygiene, and personnel numbers/ratio.

Pharmacists are particularly concerned about the repeated and ongoing negative citations of medication management issues.

Feedback from pharmacists practising in aged care

To inform this submission, PSA sought input from pharmacists about their professional practice experiences in aged care. Some pharmacists practise in a community pharmacy which has a contract to supply medicines to the facility and assist with quality use of medicines issues. Several pharmacists already work within an aged care facility, while others may be consultants providing medication management review services.

Feedback from pharmacists were grouped as follows (the lists are not exhaustive):

- Issues potentially impacting on residents' safety (Box 3). Pharmacists considered these issues required priority attention.
- Issues considered to be hindering the delivery of high quality services (Box 4). Pharmacists reported that they experienced, observed or were aware of these issues resulting in challenges or suboptimal practices in the delivery of high quality services.

Issues impacting on resident safety – feedback from pharmacists

BOX 3: Issues potentially impacting on residents' safety

Transitions of care

- Processes at transitions of care are routinely disjointed and inefficient, leading to poor resident outcomes. Improvements in clinical handover are urgently needed.

Residents' medication and activities

- Polypharmacy – regular review of medicines and resident outcomes needed to ensure prescribed medicines are in accordance with therapeutic need and resident safety.
- Psychotropic medicine use – level of inappropriate use in aged care generally, requires review and action.
- Antibiotic medicine courses – often charted with no stop date.
- Crushing medicines to aid administration – facility policy on crushing and staff education needed. Inappropriate crushing can render a medicine ineffective and/or cause harm to residents.
- Dose adjustment for residents with impaired renal function – critical for certain medicines but not always implemented.
- Residents with poor swallowing or tendency to chew / spit out medicines – need to appropriately individualise / modify the medicine (e.g. formulation, dose form) or dosing regimen.
- Dose timing – can be optimised to reduce burden on staff and residents and to reflect evidence-based recommendations.
- Creating a stimulating environment for residents – often not attended to routinely or as a priority.

Facility staff

- Staff ratios are declining. Need to address this e.g. increase number of registered nurses, or set minimum number of endorsed enrolled nurses. Declining staffing levels means more work needs to be done by external providers.
- Education level and ability of staff also declining. Staff with low level of English literacy impacting on communication. Trend observed towards employing Personal Care Attendants (rather than nurses).
- Generally, aged care workers deliver appropriate care for their level of competency. However, there is considerable variation in their training and competency in vital areas such as medication management.

Other processes and practices in the facility

- Recognising the changing profile of aged care residents – on first admission they are older and 'sicker', and many more are entering aged care with prior mental health conditions. There is growing need and effort to tailor care to the resident's unique health requirements.
- Medication records are often not consistent between doctor's surgery and facility. This may improve in the near future with more comprehensive implementation of the My Health Record.
- Difficulty in organising prescriptions from doctors – often there is an expectation that 'owing prescription' practices are acceptable.
- Medication charts – there should be sufficient information to enable staff to adequately dose and monitor therapy.
- Medication charts – ability for all charts to be used as prescriptions. Ability to include Schedule 8 medicines (Controlled Drugs). Charting and dispensing medications – process needs to be streamlined.
- Influence of facility staff on new / locum doctors to make changes to sedative / chemical restraint type requests were sometimes observed to be quite high. Further, this typically occurred after the regular doctor and supply pharmacist worked hard on deprescribing.
- Unintended exposure to cytotoxic and teratogenic medicines (including waste products thereof e.g. handling and disposal of continence products) – resources and staff education needed to reduce this.
- Contemporary clinical guidelines not followed e.g. overtreatment of diabetes, wound care, maintaining nutritional needs (e.g. aligning with best management principles). Note that the Commission's background paper[16] mentions concerns being raised about 'food and nutrition' and 'wound management'.

Issues impacting on service quality – feedback from pharmacists

BOX 4: Issues considered to be hindering the delivery of high quality services

Facility-related

- Staff turnover and frequent use of locum / agency staff – often pharmacist needs to start from square one to establish / develop working relationship.
- Medicines 'lost' in the facility. Lost/misplaced medication charts resulting in duplication of charts. Prescriptions (for Schedule 8 medicines) written by the doctor at the facility but not passed on to the pharmacy in a timely manner requiring pharmacist to follow up.
- Procurement of pharmacy services not necessarily conducive to delivering best possible care to residents.

Collaboration and communication

- **Transitions of care.** Pharmacist pressured by facility to provide medications for newly admitted residents based on incomplete records or history from previous facilities/pharmacies. Also, a pharmacy supplies medicines to facility based on the resident's hospital discharge record, only to find the doctor at the facility has made changes within 24 hours.
- **System-level and cultural** changes needed to develop and sustain a trusted relationship between pharmacist, facility, GP and resident/families.
- **Residential Medication Management Reviews** (RMMRs). As pharmacists are not embedded in the facility, physical separation of pharmacist, GP and facility can be a barrier to effective communication of recommendations. Also, supply pharmacist being unaware of RMMR recommendations.
- **Access to information.** Lack of (or limited) access by pharmacists to residents' previous medical history. Also, as a consultant (to the facility), not having access to facility documents, nor to internet; inability to print. Not having access to resources provided by the contracted QUM (quality use of medicines) service provider e.g. forms, policies, education, RMMRs, audits.
- **Limited availability of / access to doctors.** Doctors not participating in regular Medication Advisory Committee (MAC) meetings. One pharmacist cited there had been no GP at MAC meetings for nearly 12 months. Another pharmacist mentioned the GP didn't/couldn't attend meetings even when they had been scheduled according to the GP's preference. Also, inability to engage meaningfully with GPs who rarely attend the facility or who routinely attend after hours.
- **Limited knowledge about pharmacists.** Pharmacists at the medicine supply pharmacy only being considered by facility staff for that purpose and not being actively used as a resource for improving residents' clinical outcomes. Also, attitudes or expectations of some staff and some families as to what is appropriate medication for the resident. This could be resolved or minimised with greater opportunity for pharmacist to provide medicine information and education to facility staff, residents and families, and to genuinely be part of the care team.

Other

- **Lack of funding** – remuneration for pharmacist not available or not commensurate with work contribution. Lack of opportunity/funding for pharmacist to spend more time on site in a clinical role, or to have case conference discussions.
- **'Mismatch' of goals.** Facility requirements and goals heavily influenced by the need to meet accreditation standards, and these may not be clear to the community pharmacy supplying medicines. Pharmacists noted that a facility not meeting standards on medication management is usually with regards to administrative or procedural matters and not in relation to clinical outcomes of residents and their medicine use.

Pharmacists' view of priority issues

Pharmacists working in the aged care sector were asked by PSA to identify short- and long-term priorities for improving safety and quality in residential aged care. Some of their ideas were outlined or touched on above (in Boxes 3 and 4). Other responses are shown below. (Note – the list provides examples only; it is not an exhaustive list.)

SHORT-TERM PRIORITIES
(mostly to improve resident safety)

EDUCATION AND TRAINING

- Identify priority medication-related education requirements and deliver group education sessions to facility staff
- Discuss communication processes between pharmacy and facility to ensure timely delivery of medication orders
- Professional development opportunities and plans for staff
- Improvement in palliative approach
- Educate staff on the comprehensive role of the pharmacist in the aged care facility

CLINICAL GOVERNANCE

- Focus on goals of care for residents
- Identify opportunities to review appropriateness of use of psychotropic medicines / deprescribing
- Demonstrate value of pharmacists in improving residents' care (e.g. through medicines reconciliation, diabetes management)
- Establish better imprest systems in the facility to minimise callouts to supply pharmacy
- Ensure appropriate policies / documentation on issues such as crushing medicines, audits on vaccinations, allergies, medication errors
- MAC meetings – ensuring good clinical governance, regular attendance by all team members, funding for pharmacists to participate
- Regular review of medicine-related incident reports to identify opportunities for systems change

RESIDENT-LEVEL ACTIVITIES

- Educational material for residents and families on role of the pharmacist and directly involving them in residents' care
- Ability for pharmacist to interact directly with resident where warranted (medication management issue)
- Assisting with the development of management plans with a medication component (e.g. asthma)
- Assessment for safe self-administration of medicines (where appropriate)
- Education on specific medicines, diseases or health care topics (e.g. palliative care)
- Greater flexibility in frequency of undertaking Residential Medication Management Reviews, based on resident need

LONG-TERM PRIORITIES
(system changes to improve quality and safety)

EDUCATION AND TRAINING

- Remunerated ongoing / regular training for all facility staff
- Supporting doctors on the use of medication charts in prescribing
- Appropriately remunerated case conferences
- Enable hospital charts / discharge summaries to be written by pharmacists

CLINICAL GOVERNANCE

- Quality framework designed to measure resident outcomes
- Emphasising and implementing an inclusive, collaborative approach in all aspects of care delivery. Better communication between healthcare team members at all stages of care. Seamless transfer of information from hospital discharge to facility doctor and supply pharmacy
- Benchmarking / evaluation of medicines use facility-wide and by individual residents
- Regular audits of residents' medication charts by a pharmacist
- Regular assessment of use of medicines on a 'prn' (when necessary) basis
- Larger antibiotic stock availability in the facility

Pharmacists are integral to quality and safety in aged care

The contribution of pharmacists in aged care encompasses a wide range of professional activities. The knowledge and expertise of pharmacists is essential in the unique situations presented in residential care facilities. Older people requiring medication therapy can often require prescribing of unusual doses or combinations of medicines, or tailoring for individual requirements such as swallowing difficulties. Pharmacists have specific training to respond to individualising medication treatment.

Older people are also at increased risk of adverse or suboptimal effects of medicines, not only as a result of their complex medication regimens and disease states, but also due to frailty and function compared to younger populations. The frequently reported occurrence of medication misadventure in residential aged care facilities has many causative factors including general poor health status, concurrent use of multiple medicines, use of high-risk medicines and the extensive overprescribing of sedatives and psychotropic medicines among this population.

BOX 5

Potential benefits: Aged care pharmacists

- Reduction in the use of psychotropic medicines / chemical restraints, improving quality of life for residents through reduced side effects (e.g. sedation, weight gain, impaired cognition).
- Reduction in hospitalisations from medicine-related adverse events.
- More rational use of opioid medicines, resulting in improved pain management and alertness of residents.
- More rational and targeted use of antimicrobials in accordance with local resistance patterns and treatment recommendations.
- Increased staff access to pharmacist's expertise in medicines and medication management within the residential care facility.

Quality of care standards and guidelines for residential aged care facilities make reference to quality use of medicines such as medication management requirements. There are significant benefits for residents, the health sector and Government with the integration of pharmacists with doctors and nurses as part of the multidisciplinary health care team in aged care facilities. Some of the potential benefits of investing in an aged care pharmacist are outlined in Box 5.[19]

> Pharmacists must have a greater role in the aged care sector to utilise their unique medicines expertise to ensure the safe and optimal use of medicines in residential aged care facilities.

Other health professionals have also spoken about the benefits of including pharmacists in the aged care team but structural or financial barriers prevented this from occurring routinely. Professor Dimity Pond, a general practitioner, gave evidence at the Commission's hearing and stated[20] that for the holistic care of a person, interdisciplinary planning conferences are "enormously helpful". However, Professor Pond also stated that, in her time in residential aged care, case conferences involving health professionals such as geriatricians, pharmacists and other health professionals "very rarely" occurred. This was attributed to the lack of remuneration for those non-GP health professionals to attend. She further remarked "this needs to be sorted".

At a Senate Community Affairs References Committee hearing earlier this year, Associate Professor Edward Strivens, President of the Australian and New Zealand Society for Geriatric Medicine, highlighted[21] the importance of geriatricians working within an extended interdisciplinary team of nursing and allied health

professionals including pharmacists and tailoring interventions through a whole comprehensive, multidimensional, multidisciplinary assessment.

Pharmacists can also provide a valuable role in supporting transition of care. Adverse drug events can occur anytime a change to a medication regimen is implemented, however transitions between care settings have been identified as particularly high risk. The importance of medication reconciliation by a pharmacist is well-evidenced to reduce errors during transitions of care, particularly when transferring from hospital to residential aged care facilities. Often pharmacists share their stories with PSA about how they and other health professionals have gone out of their way to try to ensure a seamless transition for residents and families within the construct of the arrangements of our current health system. Again we note from the Senate Committee hearing transcript[22] a statement by Mr Sean Rooney, Chief Executive Officer of Leading Age Services Australia, that "there are… good practice examples where you have, at the local scale, a local hospital working with primary care and pharmacy and also with residential care to deliver… better outcomes for the older person".

It is important to note that many older people, particularly those with one or more chronic diseases, will likely have an established 'relationship' with community pharmacists prior to entering an aged care facility. Being on medicines to manage chronic conditions means regular visits to a pharmacy to have prescriptions dispensed and other health conditions attended to. The accessibility of community pharmacy staff also provides the elderly with a regular contact point socially and for non-health matters.

Pharmacists must have a greater role in the aged care sector to utilise their unique medicines expertise to ensure the safe and optimal use of medicines in residential aged care facilities. Collaborative care is a cornerstone of best practice pharmacist care and this is particularly important in aged care settings where residents require chronic complex care.

In the following section, several core pharmacist-delivered services or activities are outlined. These are what pharmacists currently deliver but to varying extents, and PSA asserts that broader implementation is warranted to maximise benefits particularly for the aged care sector.

Supporting safe use and quality use of medicines in aged care

Clinical governance principles for pharmacy services

Recently, PSA released clinical governance principles[23] to support the design and delivery of pharmacist services underpinned by safety and quality. It had been noted by PSA that clinical governance was being progressively incorporated into health service sectors such as hospitals, commissioning bodies (e.g. Primary Health Networks), general practices, community pharmacies and Aboriginal Community Controlled Health Services, but overall not in a comprehensive manner.

The PSA's principles framework is relevant to all settings where pharmacy services are delivered, including aged care. The framework of principles builds on the work of the Australian Commission on Safety and Quality in Health Care and is promoted as a key mechanism to ensure pharmacist-delivered services provide the best possible care to individuals.

Thus, principles fundamental to good clinical governance in pharmacy services include:

1. **Partnering with consumers** – co-design; patient-centric; empowering consumers through health literacy; measuring and improving consumer experience
2. **Governance, leadership and culture** – commitment to safety and quality culture; clinical leadership
3. **Clinical performance and effectiveness** – scope and standards; evidence-based care; transparency; education and training; measurement and monitoring
4. **Patient safety and quality improvement systems** – risk management; adhere to codes, guidelines and quality systems; continuous quality improvement
5. **Safe environment for delivery of care** – environment; cultural safety.

With the formalisation of a pharmacy-profession specific clinical governance framework, PSA is working with pharmacists and organisations involved in the provision of pharmacy services to fully utilise and be guided by the new framework to improve safety, quality and consistency in service delivery.

Community pharmacy

Community pharmacies have an important role in providing pharmacy services to aged care facilities to support the health and therapeutic needs of residents as well as the pharmaceutical needs of the facility. Generally, a facility would contract a pharmacy to deliver a range of pharmacy and quality use of medicines services. The type and frequency of services delivered by the community pharmacist would be based on the needs of the facility, and may include:

- responding to queries from the facility on medicines and medication management issues
- having scheduled deliveries of medicines including emergency delivery arrangements
- assisting facility staff with correct medicine storage, administration techniques, handling of waste
- providing medicine and health information to residents and staff, and delivering education sessions to health professionals in the facility
- attending and participating in MAC meetings
- assisting the facility with accreditation processes
- assisting with the development, periodic review and implementation of policies and procedures relating to medicines, medication management, wound management, infection control
- conducting medication chart audits and medicines use evaluations
- assisting with necessary actions in the event of a medicine shortage or a recall of a therapeutic good
- providing information or assisting with the reporting of adverse events relating to the use of medicines, vaccines or medical devices
- participating in quality assurance and quality improvement activities.

Although community pharmacists have the capability and desire to deliver these services, activities designed to improve quality use of medicines are generally not prioritised by aged care facilities. Therefore contracts between a pharmacy and facility would tend to be limited to the dispensing and delivery of medicines and responding to medicine-related queries on an ad hoc basis.

Based on what pharmacists have experienced, the focus that aged care facilities give to medication management issues are primarily in the context of complying with accreditation standards. There also appears to be a lack of awareness of the potential benefits of pharmacist-delivered QUM services on the care of residents by facility leaders as well as aged care sector policy makers.

Medication management review

A comprehensive medication management review is a structured, critical examination of a person's medicines conducted by an appropriately trained and credentialed pharmacist (often referred to as an accredited pharmacist) in collaboration with the prescriber. These systematic review services are aimed at identifying and resolving medication-related problems to optimise the impact of medicines on a person's health outcomes. The type of services includes hospital inpatient medication review, MedsCheck and Diabetes MedsCheck (in-pharmacy medicine reviews for eligible patients living at home in a community setting), Home Medicines Review (HMR; for eligible patients living in a community setting) and Residential Medication Management Review (RMMR; for eligible permanent residents of an Australian Government funded aged care facility). Currently, the Sixth Community Pharmacy Agreement (6CPA) provides funding for the services listed above except the hospital inpatient medication review.

The RMMR service was introduced in 1998 and has been funded through successive Community Pharmacy Agreements (CPAs). The benefits of RMMRs are accepted, however, in recent years access to the service by residents has been reduced due to changes to the program business rules of the CPA. Thus, a review is currently permitted once every two years (rather than what was previously up to one review annually). Therefore PSA contends that some residents at risk

of an adverse outcome from their medication may be missing out on the opportunity for an RMMR to be conducted in a timely manner by a pharmacist.

The review of national aged care quality regulatory processes[24] identified the need to ensure assessment against aged care standards is consistent, objective and reflective of current expectations of care. In order to address issues such as polypharmacy, it was recommended that an RMMR must be conducted on admission for residents to an aged care service, after hospitalisation, upon deterioration of behaviour or any change in medication regimen.

Of particular concern noted in the report was that, despite these issues, the number of claims for RMMRs had decreased by approximately 18% between 2008–09 and 2015–16. This was largely due to the change in the permitted frequency of reviews mentioned above.

Dr Kay Patterson, the Age Discrimination Commissioner, recently spoke[25] of her concerns about medication in aged care – that it is vital to ensure the resident's medication is appropriate. She commented of the lack of medication reviews particularly in the context of residents returning from hospital; that information about discharge medicines are not filtering to their GP and medication reviews are not conducted in a timely manner. With the implementation of My Health Record, PSA acknowledges that timeliness of health-related communication may improve.

Further, with regards to ensuring residents are receiving the best outcome from the multiple medications they are taking, Dr Robert Herkes, Chief Medical Officer of the Australian Commission on Safety and Quality in Health Care, remarked[26]:

> ***One of the things we were keen to think about adding to the standards is around medication review. It's around the appropriate use of medications, and it's around making sure that high-risk medications, like antipsychotics, are treated with respect rather than handed out without due diligence.***

Quality use of medicines support

Under the 6CPA, funding is currently available for pharmacists to deliver a QUM service as a component of the program which includes the RMMR service. The aim of the QUM service is to improve practices and procedures relating to the quality use of medicines in an Australian Government funded aged care facility. The service is "designed to assist facilities in meeting the healthcare needs of residents",[27] and a pharmacist (accredited pharmacist or registered pharmacist) may deliver QUM activities covering areas such as:

- **medication advisory activities** (e.g. advising on medicine issues such as dose forms, compatibilities or adverse effects; assisting in the development of nurse-initiated medication lists; developing policies and procedures to address medication management concerns such as sleep, bowel or pain management, and infection control)
- **education activities** (e.g. providing medicine information to medical practitioners and facility staff; in-service sessions for residents or nursing staff on medication management or disease state management)
- **continuous improvement activities** (e.g. assessing competency of residents to self-administer medicines; conduct medication administration audits; assist facility to meet and maintain medication management accreditation standards; assist with development and report on quality indicators and other quality measures).

The CPA-funded QUM service is similar in scope to the range of services that a community pharmacy may deliver to a facility under contract. Therefore facilities currently have two options to select from to engage a pharmacist to deliver services which focus on improving facility practices and procedures relating to QUM.

The QUM component of the RMMR program was evaluated in 2017–18.[28] Participants (pharmacists and facilities) largely felt that the QUM program was effective and positively impacting on medication management practices in residential aged care facilities. It had national reach and was being accessed by facilities of all sizes and by the full spectrum of socio-economic status.

There were, however, ways identified to strengthen the program, for example, better aligning QUM activities to their evidence base, establishing a performance measurement system to assess effectiveness, and improving the data system to enable timely and cost-effective analysis.

Although the funding made available under 6CPA for QUM services is welcome, in reality it is so limited that it cannot consistently support the delivery of services that truly benefit residents or the facility. This is even reflected in the program rules that pharmacists "must provide at least one QUM service each quarter". In PSA's view, this is a very conservative expectation of the service. Case scenario 1 helps to illustrate the frustration experienced by pharmacists.

Deprescribing

Deprescribing aims to ensure a person's medication regimen is aligned with their preferences and goals of care. It is a systematic process of identifying and discontinuing medicines where existing or potential harms outweigh existing or potential benefits within the context of the person's care goals, current level of functioning, life expectancy, values and preferences.[29] The process is undertaken in a resident-centred, collaborative manner so that pharmacists can best support the understanding and expectations of residents, prescribers and facility staff and maximise the beneficial outcomes.

Opportunities to consider deprescribing include:[30]

- polypharmacy – since older people are at greater risk of adverse outcomes from the use of multiple medicines
- lack of efficacy of treatment – if the desired therapeutic effect is not evident, continuation of therapy should be re-considered
- change in treatment goals (which may relate to onset of terminal illness, dementia or frailty)
- adverse reactions to medicines – in the elderly, falls or cognitive decline may be regarded as part of the aging process rather than an adverse consequence of medicine use.

Various pharmacist-led deprescribing interventions have been shown to reduce polypharmacy and improve outcomes for patients, particularly older people[31, 32, 33] See also the section on *Reducing use of sedatives* later in this submission.

CASE SCENARIO 1

6CPA-funded QUM service

"My community pharmacy is contracted to deliver QUM services to the local 100-bed aged care facility. However, the payment we receive for this can only fund a pharmacist for approximately four hours per month. It's almost impossible to provide a quality service at this rate and difficult to establish a meaningful relationship with facility staff and residents to make a difference. It's extremely frustrating as my pharmacist staff would like to do more for them."

Under-use of medicines

For older people, undertreatment can pose at least as much risk as the use of multiple medicines. Under-use of appropriate medicine treatment is reported in conditions common in older people such as heart failure, pain and osteoporosis. Pharmacists can support prescribers, residents and facilities in considering factors such as evidence of clinical benefit in the elderly population, polypharmacy, treatment burden, adherence and cost.

Medication adherence

Pharmacists are aware that older people may experience particular challenges with medication adherence. Apart from an increase in the number of prescribed medicines, they may find that other factors impact on their medicine taking, for example:

- impaired physical dexterity –difficulty opening medicine packaging, halving tablets, or operating therapeutic devices
- impaired sight, hearing and cognition – difficulty reading medicine labels and understanding or remembering dosing instructions
- beliefs about the effectiveness of medicines, or concerns about adverse effects and cost leading to intentional non-adherence.

Therefore additional attention or consideration by the pharmacist is regularly required in supporting older people to take/use their medicines as intended.

Dose administration aid service

A dose administration aid (DAA) is a tamper-evident, well-sealed device or packaging system that allows organisation of doses of medicine according to the time of administration.[36] Pharmacists provide holistic DAA services which encompass medication assessment and reconciliation, packing of DAAs and professional support to ensure the optimal use of DAAs. The service aims to support safe and effective administration of a person's medication and improve adherence, and may particularly benefit those taking five or more medicines daily or with a complex regimen of medicines.

Currently some DAA services are subsidised, for example, through the 6CPA or the Department of Veterans' Affairs. The eligibility criteria for these two programs, however, specifically exclude aged care facility residents. Pharmacists have expressed significant ongoing concerns to PSA that aged care residents are disadvantaged by not having access to subsidised DAAs even when clinically warranted or where use of a DAA is mandated by the facility.

Antipsychotic stewardship

The inappropriate overuse of antipsychotic medicines in aged care has been widely reported in recent years and to the Commission. Pharmacists continue to be significantly concerned about published Australian studies which provide clear evidence of high rates of antipsychotic prescribing in residential aged care facilities.[37, 38] Australian evidence suggests that between 40% and 50% of residents could be receiving potentially inappropriate medications, such as sedatives and anticholinergic drugs.[39]

The Third Australian Atlas of Healthcare Variation specifically reports on antipsychotic prescribing in older people, and notes ongoing concern about excessive prescribing outside of best practice guidelines.[40] It is no surprise to PSA that the report describes[41] the level of antipsychotic use for behavioural and psychological symptoms of dementia in aged care homes as "a matter of grave concern".

As part of its Choosing Wisely recommendations, PSA has stated as follows:

> ***Do not continue benzodiazepines, other sedative hypnotics or antipsychotics in older adults for insomnia, agitation or delirium for more than three months without review.***

This is because the use of these substances is associated with a range of adverse effects including falls and impaired cognition. Non-pharmacological interventions can be an effective substitute and use of these medicines should be for the shortest duration possible. Reductions in the use of these medicines can be achieved following pharmacist review, interdisciplinary input, staff education and feedback from audits. (See also an article for pharmacists on this subject at Attachment B.)

Reducing use of sedatives

The Commission would be familiar[43, 44] with the national trial of the Reducing Use of Sedatives (RedUSe[45]) program in 150 aged care facilities which achieved a significant reduction in the proportion of residents using antipsychotic medicines (13% reduction) and benzodiazepines (21% reduction).

In order to translate the positive research findings into practice, PSA, as the peak body for pharmacists, worked with the RedUSe program researchers to produce practitioner development resources and practice support materials. These included the following:

- educational video incorporating expert advice from prominent psychogeriatrician, Professor Henry Brodaty
- continuing education for pharmacists on the management of old age mental health in aged care facilities
- quality use of medicines pack for pharmacists to deliver to aged care facilities
- contributing to the review of educational content for high-quality, evidence-based education for pharmacists and nurses on psychotropic use.

It should be noted that a pharmacist working within an aged care facility would be best placed to generate regular reports on antipsychotic use by individual residents as well as facility wide. Based on the outcome of the report, the

pharmacist can then work closely with facility staff and GPs to implement quality improvement activities as necessary.

The success of programs such as RedUSe invariably suffer from lack of ongoing funding to sustain those practice models or arrangements. Hence PSA is advocating for embedding pharmacists into aged care facilities as a long-term solution for the benefit of all residents and those facilities (see later in this submission).

Antimicrobial stewardship

In relation to Australia's strategy on antimicrobial resistance,[46] PSA welcomed and supported its implementation given the core role that pharmacists have in antimicrobial stewardship. The quality use of antimicrobial medicines are particularly important in hospital and aged care settings, but also increasingly in the community.

Generally, public-facing messages focus on not using antibiotics to help address the rise in antibiotic resistance trends. However, an equally important consideration is that antimicrobial medicines are used appropriately i.e. when antimicrobial treatment is warranted, the right medicine is selected and used correctly with regards to dosage, route of administration and treatment period. Thus, pharmacists play a fundamental role in facilitating appropriate and optimal use of antimicrobials and minimising the development of antimicrobial resistance.

The work of the Australian Government Department of Health and NPS MedicineWise in reducing inappropriate use of antibiotics is acknowledged. However, PSA believes substantial and ongoing efforts to educate and support prescribers and facility staff to minimise inappropriate prescribing and use of antibiotics are warranted. This view of PSA is based, in particular, on reported data as summarised in Box 6.[47]

As PSA commented in relation to the proposed changes to the listing of subsidised antibiotic repeats on the Pharmaceutical Benefits Scheme (PBS), reducing inappropriate use of antibiotics requires a multifaceted approach. This may include, for example: implementing changes to prescribing software; educating prescribers, facility staff, residents and families; providing best practice guidance tailored to type of prescriber (e.g. general practitioners, non-GP medical practitioners, dentists, optometrists, midwives and nurse practitioners); shortening the expiry date of short course prescriptions for antimicrobial medicines; timely alignment of PBS listings with relevant reviews of evidence-based treatment guidelines.

As stated in its Choosing Wisely recommendations,[14] PSA's position on the use of antibiotic repeats is as follows (see also an article for pharmacists on this subject at Attachment C):

> ***Do not dispense a repeat prescription for an antibiotic without first clarifying clinical appropriateness.***

It is also worth noting that antimicrobial stewardship interventions can be influenced or guided by factors relating to workflow (e.g. staffing, institutional policies / guidelines) or culture (e.g. pressure or expectations of residents, families or the institution) within the residential aged care facility as reported.[15]

BOX 6

Inappropriate antimicrobial use in aged care homes (2017)

- More than half (55.2%) of the antimicrobial prescriptions were for residents with no signs and/or symptoms of infection in the week prior to the start date.
- Of all antimicrobial prescriptions dispensed for residents with signs and/or symptoms of infection, only 18.4% met internationally recognised infection definitions.
- For 26.9% of antimicrobial prescriptions, the start date was greater than six months prior to the survey date.
- The indication for commencing an antimicrobial was not documented for 23.7% of prescriptions.
- The antimicrobial review or stop date was not documented for 55.6% of prescriptions.
- A third (33.1%) of antimicrobial prescriptions were for topical use. (Generally, most minor skin infections are self-limiting and resolve with standard skin hygiene care without the use of an antibiotic.)

Palliative care, end of life care and voluntary assisted dying

With health care approaches and options evolving, it is expected that the role of pharmacists in palliative care, end of life care and voluntary assisted dying will continue to develop and change.

Palliative care

Some pharmacists specialise in palliative care. As part of a multidisciplinary palliative care team in aged care, their role may include the following[50,51]:

- provide information and advice to residents, families and facility staff about palliative care medicines during advance care planning stage and beyond
- assist in deprescribing of medicines or provide information on off-label use of medicines for palliative care
- assist in accessing medicines with different access arrangements (e.g. Special Access Scheme) and liaise with community pharmacists to ensure appropriate ongoing supply of medicines
- support all aspects of medication management including advice on appropriate drug doses, alternative routes of administration of medicines when resident is unable to tolerate oral medicines.

With increasing focus on advance care planning, it is important that pharmacists are included in discussions with residents to support information and advice or accessible all members of the healthcare team, including pharmacists, have a coordinated approach in supporting a resident's advance care planning and a common understanding of their preferences in future health care.

Voluntary assisted dying

A legal framework for voluntary assisted dying (VAD) has recently been implemented in Victoria to enable people who are suffering and dying to choose the manner and timing of their death. Under the Victorian legislation there are strict requirements with regards to the pharmacist's role in the handling of VAD medicines; currently these include[16]: appropriate authorisations, dispensing a prescription for a VAD medicine, specific labelling, information on storage and administration, and handling of returned unused VAD medicines.

Pharmacists working to improve standards of care

Pharmacists are solution-focused and committed to improving standards of care. Examples of contributions that pharmacists have made to improve the care of residents or the operation of the facility are shown in Table 1. Additional example case scenarios (2–5) are also provided to outline the experience of pharmacists in providing care.

TABLE 1: Pharmacist-initiated activities to benefit residents and facilities

Activity	Benefits
Improved standards on imprest (medicine) stock and 'stat' (immediate) doses	Allowed residents to have timely access to necessary antibiotic treatment
Changed the type of medicine packing system (from a multidose system to a unit dose system) used, in consultation with facility staff	Improved accuracy of medication being administered to residents particularly after medication changes were made on charts
Facilitated contact between the facility and a (different) pharmacy offering an out-of-hours service to supply palliative care medications	Provided reassurance for the facility which had particular concerns regarding the availability of this service
Instigated regular team meetings with facility staff and doctors, an 'open door' policy for regular phone contact	Built a stronger working relationship, ability to resolve issues promptly, and improvements in residents' care
Analysed blood glucose level monitoring protocols, converted use of syringes to pens (as per best practice), helped manage risks of hypoglycaemia due to new medications	Better insulin management practices in the facility and better care for residents
Developed / wrote aged care-specific case studies for pharmacists and GPs (ongoing)	Better informed GPs
• Provided step-by-step instructions on safe crushing / dispersing of individual medicines • Replaced luer-lock syringes with oral syringes for administration of non-parenteral medications	Implemented individualised dose modification for better and safer dosing
Routinely acquired Health summaries from GPs for all existing residents and as mandatory documentation required for new residents	Improved clinical records
Formulated policies on: nebuliser use, dose modification, use of syringe drivers, urgent stock holdings	Supported facility with policy development
• Reduced the use of nebulisers • Implemented a cytotoxic register • Implemented a system to identify teratogenic medicines on primary medication charts	Improved safety for facility staff and residents
Identified and provided resources and facilitated discussions on clinical issues (e.g. deprescribing, crushing medicines, palliative care, methotrexate, prescription prices, polypharmacy)	Delivered opportunistic education and resources to support GPs and facility staff
• Completed medication reconciliation • Undertaking self-medication audit (in progress)	Improving safety and quality use of medicines for all self-medicating residents
• Conducted meetings to discuss medication issues • Organised meetings with family members especially where behavioural issues are present	Improved liaison with health professionals and with residents and families
Provided monthly reports on the use of antipsychotic medicines (ongoing; this can also be extended to the reporting of any other high-risk medicine, or medicine for the management of specific chronic diseases)	Improved understanding of medicine use trends in the facility and improving safety and quality use of medicines

Education and training of facility staff

A strong theme arising from feedback that PSA has received from pharmacists relates to the lack of training of aged care staff. We understand that evidence heard by the Commission to date has also touched on this issue. Many pharmacists reported (see Boxes 3 and 4) they have observed a decline in the competency level of staff and this is compounded by the declining ratio of qualified to unqualified staff – and that this is impacting on the care of residents as well as the operation of the facility.

CASE SCENARIO 2

Continuation of unnecessary therapy

A female resident apparently had a skin infection earlier in the year.

Treatment with a corticosteroid cream was continued by the GP and facility for nine months.

The extended course of unnecessary treatment only came to light when the resident's son queried with the pharmacist at the supply pharmacy why the cream needed to be dispensed every week for his mother.

This highlights the importance of good communication between the GP, pharmacist and facility staff in coordinating quality use of medicines for residents.

CASE SCENARIO 3

Implementing best practice guidelines

Due to use of outdated wound management practices in a facility, a resident's treatment was delayed, resulting in a skin infection for which antibiotic treatment was required. This impacted on the resident's quality of life as well as unnecessary resources and treatment costs.

Pharmacists can assist with ongoing staff education and implementation of best practice guidelines.

Pharmacists have a role as educators to support or contribute expertise to the professional development of other health professionals. We would strongly suggest that pharmacists could support the aged care sector, for example, by:

- delivering structured education sessions or programs to facility staff on medicines and medical devices
- providing expert advice on the design, development and delivery of education modules or materials for aged care staff on relevant medication management and quality use of medicines topics.

CASE SCENARIO 4

Resident's pain not considered as a contributor to other health issues

Aged care facilities maintain good pain charts for residents. Pain can result in situations where it may be contributing to other problems – and a pharmacist's medication knowledge may be helpful. For example:

- **Suboptimal pain management may lead to a resident not sleeping well, or being restless or disruptive.**
- **Constipation can lead to pain issues and the discomfort can increase irritability.**

A pharmacist working within the facility's team can help connect the issues relating to medications and the resident's health status. Increase in irritability, lack of tolerance to others or poor sleep may require a comprehensive assessment before another medicine is prescribed in an attempt to address those issues.

A pharmacist embedded in the aged care facility can support the health care team and improve the resident's health.

CASE SCENARIO 5

Embedding a pharmacist in an aged care facility

Last year Richard Thorpe became the first pharmacist in Australia appointed to a full-time position in an aged care facility (at Goodwin Aged Care Services, ACT). See also Attachment D.

What does your role involve?

RT: *I attend the morning handover and prioritise my workflow for the day based on the needs of the residents. I'll regularly attend morning medication rounds, which has been particularly effective when carers have residents who have been refusing doses consistently. Observing these interactions allows me to both 'coach' staff and provide feedback to the GP or enduring power of attorney (EPOA) if needed.*

My work activities are divided into about eight different areas. GP and pharmacy liaison have taken priority early on, however in the months ahead I expect to provide input into policy and procedure. Staff training will also be prioritised. I also conduct formal RMMRs, attend case conferences, and co-ordinate and run training for medical assistants.

What feedback have you received?

RT: *Residents, EPOAs and family members who have attended case conferences have provided feedback on my ability to encourage residents to make informed decisions around medicine use. The GPs have said that having a pharmacist present allows more informed discussions, particularly where deprescribing is concerned.*

The Registered Nurses (RNs) and care staff have indicated they appreciate advice regarding the administration of medications – whether medications can be crushed safely, and if not, what alternatives are available; clarification of regimens when residents return from hospital; timely charting and supply of medications for new admissions. Residents are also getting used to seeing me each day. Some pull me aside seeking advice or reassurance, which allows me to become their advocate to the GP, RN or care staff if necessary.

What do you hope to achieve in this role?

RT: *With my knowledge base and experience, I feel I'll be able to provide valuable input to encourage residents and their EPOAs to make high-quality decisions regarding medication management.*

I will have an impact on policy and procedure and will be chairing the Medication Advisory Committee (MAC) meetings in 2019. I'll also be part of the Antibiotic Stewardship Committee and provide opinion to the Clinical Governance Committee.

While these 'management' type roles will help mould the DNA of the organisation, I also want to maintain my presence on the facility 'shop floor' to provide support to staff on a daily basis.

Delivering and consolidating innovation in aged care

Pharmacists in collaborative care teams

As referred earlier, PSA is continuing to advocate for greater recognition of pharmacists' expertise and implementation of collaborative and integrated practice models in various healthcare settings such as Aboriginal and Torres Strait Islander healthcare services, residential care facilities, general practices, chronic disease clinics and Health Care Homes. Through various consultations, PSA has proposed ways to involve pharmacists more efficiently and effectively to improve outcomes for residents, patients and carers. Pharmacists should be embedded in every setting where medicines are used, in particular prioritising the care of vulnerable population groups and those who live with chronic diseases.

As a result of PSA's work and policy-related advice to governments, there have been some positive outcomes for the profession which should begin to translate to improved outcomes for Australians. Some examples of these initiatives are listed in Box 7.[53,54,55,56]

Pharmacists in general practice teams

There has been increasing effort to formalise a role for pharmacists to be integrated into general practice teams. A pharmacist in a general practice would undertake activities to support patients, clinicians and practice systems tailored to the needs and priorities of that practice.[57]

BOX 7: Examples of PSA-recommended initiatives in progress

Pharmacists in aged care

In the 2019-20 Federal Budget, funding was allocated for a two-year trial to embed a part-time pharmacist in all 27 residential care facilities in the Australian Capital Territory to improve medication management.[53]

Pharmacists in Aboriginal Community Controlled Health Services

The Integrating pharmacists into Aboriginal Community Controlled Health Services to improve chronic disease management (IPAC trial)[54] is in progress across 22 sites in Victoria, Queensland and Northern Territory. Pharmacists are providing medication management services to Aboriginal and Torres Strait Islander people and supporting other health professionals to deliver evidence-based services.

Pharmacists in general practice

The Workforce Incentive Program[55] announced as part of the 2018-19 Federal Budget will enable pharmacists to be integrated into general practice clinics to help patients with their medication management and support GP prescribing and practice staff. The program is scheduled to commence on 1 January 2020.

Medicare Benefits Schedule Review Taskforce

Despite the central role of medicines in the care and treatment of people with chronic disease, the MBS Chronic Disease Management (CDM) service is under-utilised, partly due to the exclusion of pharmacists as eligible allied health practitioners. In 2018, the Allied Health Reference Group issued a recommendation to the Taskforce to "add non-dispensing pharmacists to the list of eligible allied health professionals under the MBS" (Recommendation 17).[56] The Taskforce's consideration and final recommendation are pending.

Medicare Benefits Schedule review

In the context of the current review and reforms of the Medicare Benefits Schedule, PSA has strongly advocated for the inclusion of pharmacists as eligible allied health professionals to be able to access chronic disease management items. This will support pharmacists to deliver timely care through a collaborative care team.

These initiatives are helping to increase recognition of pharmacists' expertise and create appropriately remunerated opportunities to deliver care to patients. Overall however, PSA strongly suggests that much more expansive changes and sustained efforts are required to recognise and use pharmacists' expertise to improve patient outcomes.

Embedding pharmacists in aged care to benefit residents and facilities

The ACT aged care pharmacist trial

As referred earlier, given the high rates of medication misadventure in aged care settings and suboptimal use of medicines by residents, PSA has been calling for pharmacists to be comprehensively integrated into residential care facilities. To this end, PSA has welcomed the recent funding allocation through the 2019-20 Federal Budget to conduct a trial whereby a part-time pharmacist will be embedded in all 27 residential care facilities in the ACT. At present, PSA is working with the Capital Health Network to progress the trial.

The genesis of the Australian Government-funded ACT trial stems back to earlier work undertaken in Canberra where an innovative model of best practice aged care service delivery was piloted. Working towards a "restraint-free philosophy of care", Goodwin Aged Care Services in Canberra undertook an Australian-first trial in 2018 to integrate a pharmacist in their residential care facilities.[58] The six-month pilot study, in partnership with the University of Canberra, found the pharmacist's input and advice resulted in positive outcomes for residents and the facilities, as summarised in Box 8.[17,18,19,20]

While the clinical and economic outcomes are critical, feedback of staff was equally important. A survey of the staff and residents of the facilities involved found they were extremely positive about the role of the pharmacist, strongly agreeing that employing an on-site pharmacist would be beneficial.

As a result of the highly successful trial, a pharmacist was engaged in an Australian-first full-time on-site capacity in aged care[63,64]; further details are outlined in Case scenario 5 and Attachment D. The pharmacist, Richard Thorpe, has highlighted that being integrated in the facility's team provides the opportunity to be involved in the delivery of resident-centred care through, for example: being the liaison point between all members of the health care team i.e. residents, family members, GPs, nurses and other facility staff; providing an interface between aged care (facility) and primary health care (community pharmacy); supporting the facility to consistently improve and deliver high quality care by influencing policies and procedures; and participating in clinical governance activities.

"Integrating" or "embedding" a pharmacist – what does it mean?

When we refer to "integrating" or "embedding" a pharmacist into an aged care facility, it means a pharmacist is working on site within the facility as a member of the facility's health care team.

The practice contribution of a pharmacist is based on the needs of the facility and its residents. Indicative ratios ranging between 0.4–0.5 full time equivalent (FTE) pharmacist per 100 aged care facility beds to 1.0 FTE pharmacist per 100 beds have been reported to PSA.

A national roll-out to benefit all Australians in residential care

Ultimately, however, PSA would like to see residents in aged care facilities Australia-wide to have timely and regular access to the expertise of a pharmacist if they require advice and support with their medicines and medication management. Further, pharmacists can support and advise facility staff and work with other health professionals to improve policies and practices that impact on the whole facility.

The evidence[65] of the Chief Medical Officer of the Australian Government, Professor Brendan Murphy, provided at a hearing of the Commission was also noted by PSA, in particular:

- that the "highest priority" is the embedding of pharmacists in aged care facilities as results of previously funded trials showed benefit and there is "available pharmacy workforce now", and
- that the option of embedding part-time pharmacists in aged care facilities is being considered "to promote the clinical governance around medication more broadly, not just psychotropic medication".

A *Proposal to embed pharmacists into aged care facilities* as a national program has previously been presented to the Federal Minister for Health and is included in this submission (see Attachment E). Briefly, PSA's proposal to embed pharmacists in residential aged care facilities nationally focuses on improving the quality use of medicines and in particular to reduce harm caused by overuse of psychotropic medicines, opioids and antibiotics. As a possible model, it was suggested that facilities experiencing challenges in meeting the medication management accreditation standard could have access to a pharmacist for a 12-month period. Pharmacists would be involved in education and training, clinical governance activities and resident-level activities based on the specific needs of the aged care facility.

It is on the basis of PSA's national proposal that the ACT trial has been allocated funding through the recent Federal Budget announcement. However, PSA has stated[66] that commitment to a national roll-out is urgently needed.

As mentioned above, PSA is committed to progressing the ACT trial. However, PSA strongly suggests that the evidence being presented to the Commission regarding aged care quality and safety and the resulting impact on Australian residents indicate that immediate national level action is warranted. As such PSA continues to strongly advocate for this model of embedding pharmacists in facilities nationally, and encourages the Commission to consider a recommendation in this regard for the benefit of all Australian residents in aged care facilities.

Attachments

Attachment A: *Guidelines for pharmacists providing Residential Medication Management Review (RMMR) and Quality Use of Medicines (QUM) services* (Pharmaceutical Society of Australia, 2017)

Pharmaceutical Society of Australia

6th Community Pharmacy Agreement

Guidelines for pharmacists providing Residential Medication Management Review (RMMR) and Quality Use of Medicines (QUM) services

PSA Committed to better health

The update of the RMMR Guidelines is funded by the Australian Government Department of Health and Ageing , Reviewed by the Pharmaceutical Society of Australia [November 2018].

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Disclaimer

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Updated October 2011

Contents

1. About the document

1.1 Introduction

Pharmacists play a pivotal role in improving resident health outcomes in aged care facilities (ACF) through the provision of medication review services and quality use of medicines (QUM) services. Communication and collaboration with relevant healthcare providers and the development, implementation and monitoring of models of good pharmaceutical practice are all essential to this process.

Pharmacists providing services to ACFs focus on two broad areas:

- resident-focussed activities, such as Residential Medication Management Reviews (RMMR), which aim to ensure that residents are receiving appropriate drug therapy and monitoring; and
- QUM facility-focussed services such as implementing and monitoring policies, and activities for the safe and effective prescribing and administration of medicines. QUM services assist the facility in providing optimum care to all residents, as well as supporting appropriate medicine use processes.

A RMMR service is a comprehensive medication review, by an accredited pharmacist, that is resident-focussed involving a systematic evaluation of the resident's complete medication regimen and management of that medicine. A RMMR aims to optimise the benefits of medicine use, improve therapeutic outcomes for the resident and ensure the judicious, appropriate, safe and effective use of medicines.[1]

A QUM service is separate to a RMMR service and has a focus on improving practices and procedures as they relate to quality use of medicines in an ACF. QUM services cover areas such as medication advisory activities, education and continuous improvement.

Successful medication management services rely on:

- a strong culture of appropriate information sharing
- the establishment of trust between parties;
- regular face-to-face interactions; and
- a commitment to teamwork and collaboration.

1.2 Background

Since the Second Community Pharmacy Agreement in 1997, pharmacists have been remunerated by the Commonwealth (via Medicare Australia) for the provision of medication management reviews for residents of ACFs. Subsequent agreements have extended these arrangements, promoting greater collaboration between healthcare providers.

The RMMR initiative arose from recommendations of the National Preventative Health Strategy Report[2] and published studies regarding medication misadventure in residents of ACFs. These studies demonstrated the incidence of such medication misadventure could be attributed to generally poor health status, high use of medicines, polypharmacy and extensive prescribing of psychotropic medicines among this population.[3,4] Such reports recommended strategies including regular medication reviews, the establishment of Medication Advisory Committees (MAC) and regular nurse education to support appropriate prescribing and medicine use.

The QUM section of Australia's National Medicines Policy considers all medicines should be used safely and effectively, selecting management options wisely and choosing suitable medicines if a medicine is considered necessary.[5] QUM activities and systematic approaches to medication review processes are actively supported by the Australian Government through the development of the *Guiding principles to achieve continuity in medication management* by the Australian Pharmaceutical Advisory Committee (now the National Medicines Policy Committee). These principles aim to achieve continuity in medication management as residents move from one episode of healthcare to another.[6] In addition, the literature on medication reviews provides evidence of improved health outcomes associated with such services in ACFs.[7]

1.3 Purpose

These Guidelines have been developed by the Pharmaceutical Society of Australia (PSA) for pharmacists providing RMMR and QUM services to ACFs. They are designed to assist pharmacists to exercise their professional judgement in individual circumstances, promote a consistently high quality of service and provide guidance to accredited and registered pharmacists on professional issues related to RMMR and QUM activities.

Changes to the funding and administrative arrangements have resulted in separation of RMMR and QUM services and necessitated the review of these Guidelines.

It is important that pharmacists read these Guidelines in conjunction with relevant professional practice standards. Refer to the *Professional Practice Standards*, version 5, 2017 published by PSA.[8]

In general terms, **guidelines** are not definitive statements of correct procedure but are designed to provide advice or guidance to pharmacists on professional process issues, desired behaviour for good practice, and how responsibilities may be best fulfilled.

Standards are prescriptive statements of the minimum requirements necessary to ensure a service is delivered with a desirable level of acceptable or intended performance or results. Standards relate to the systems pharmacists should have in place for the delivery of a service and provide a benchmark against which performance can be assessed.

1.4 Scope

These Guidelines are based on the delivery of RMMR and QUM services to ACFs. It should be noted that the Guidelines concentrate on the best practices for implementation of RMMR and QUM services at ACFs, and are not intended to provide any clinical information. It is the responsibility of individual pharmacists to maintain their clinical skills, knowledge and competency.

Details of legislative requirements are not addressed in these Guidelines. It is expected that pharmacists will comply with relevant Commonwealth, State or Territory legislation governing therapeutic goods, drugs and poisons, pharmacists (health practitioners), pharmacies (premises), and privacy and confidentiality in the provision of these services.

It is expected that pharmacists will apply professional judgement in providing professional services and managing any risks associated with the provision of these services. Pharmacists will need to make risk-benefit assessments and other professional judgements from time-to-time based on the best available information. Any significant decisions should always be documented.[8] Pharmacists are reminded that they have a professional and legal responsibility to ensure that medicine is appropriate and safe for residents to use.[8]

1.5 Terminology

- **ACF** means an aged care facility which receives residential care subsidy in accordance with the *Aged Care Act 1997*[9] and includes nursing homes, hostels and multipurpose services (MPS).
- **Resident** means a person living permanently in an ACF who is not eligible for a Home Medicines Review.
- **Accredited pharmacist** means a registered pharmacist who holds a valid accreditation certificate from an accreditation body – the Australian Association of Consultant Pharmacy (AACP) or the Society of Hospital Pharmacists of Australia (SHPA).
- **Approved QUM MPS service provider** means a registered pharmacist or business that employs or has a service contract with one or more registered pharmacists to provide QUM services in a MPS on their behalf and has been approved to provide QUM services by the Department of Health and Ageing (DoHA).
- **Approved QUM service provider** means a registered pharmacist or business that employs or has a service contract with one or more registered pharmacists to provide QUM services in an ACF on their behalf and has been approved to provide QUM services by Medicare.
- **Approved RMMR MPS service provider** means a registered pharmacist or business who is either accredited, employs, or has a service contract with one or more accredited pharmacists to conduct RMMR services in a MPS on their behalf and has been approved to conduct RMMR services by DoHA.
- **Approved RMMR service provider** means a registered pharmacist or business who is either accredited, employs, or has a service contract with one or more accredited pharmacists to conduct RMMR services in ACFs on their behalf and has been approved to conduct RMMR services by Medicare.
- **Comprehensive medical assessment (CMA)** includes a detailed medical history, medical examination, list of diagnoses or problems and written documentation of findings undertaken by a general practitioner (GP) of a resident in an ACF under Medicare Benefits Schedule Items 701, 703, 705 and 707.[10–12]
- **Healthcare team** may include the resident, carer, family member and/or next of kin, pharmacist, GP, nurse, ACF care team or other healthcare providers.
- **Medicare** means the Department of Human Services – Medicare (formally known as Medicare Australia).
- **Medication Review Standard** refers to Standard Four: Medication Review of the *Professional Practice Standards*, version 4, 2010 published by the PSA (see Appendix 3).
- **Multipurpose service (MPS)** means an integrated health and aged care service that provides flexible and sustainable service options for small rural and remote communities.[13]
- **MPS QUM service agreement** means an agreement between a QUM service provider and a MPS which details the scope of QUM services to be provided to that MPS.
- **MPS RMMR service agreement** means an agreement between a RMMR service provider and a MPS which details both the scope and provision of RMMR services to that MPS.
- **Pharmacist RMMR** means an Australian Government-funded service provided by an accredited pharmacist without GP referral. This can only occur in exceptional circumstances with prior approval from DoHA. Exceptional circumstances are determined by DoHA.
- **QUM service** means a service designed to assist ACFs in meeting the healthcare needs of residents and includes activities such as medication advisory activities, education and continuous improvement.
- **QUM service agreement** means an agreement between a QUM service provider and an ACF which details the scope of QUM services to be provided to that ACF.
- **RMMR** means an Australian Government-funded service that is characterised by the participation of both the GP and the accredited pharmacist in the medication review process, consistent with the business rules for Item 903 of the Medicare Benefits Schedule (MBS).
- **RMMR service agreement** means an agreement between a RMMR service provider and an ACF which details both the scope and provision of RMMR services to that ACF.

2. Establishing RMMR services

2.1 Aim and focus

A RMMR aims to identify, prevent and resolve actual or potential medication-related problems, optimise pharmacotherapy and assist in positive healthcare outcomes.

The RMMR is a resident-focussed, collaborative, comprehensive medication review involving the systematic evaluation of the resident's complete medication regimen and management of that medicine in the context of other relevant clinical information and the resident's health status.

For a flow chart of the RMMR process see Appendix 1.

2.2 Accreditation requirements

An Australian Government-funded RMMR must be conducted by an accredited pharmacist in collaboration with a GP. An accredited pharmacist is a registered pharmacist who holds a valid accreditation certificate from an accreditation body to provide

medication management reviews. AACP and SHPA are the only approved accreditation bodies. AACP and SHPA have developed criteria for assessment and accreditation to recognise those pharmacists who have the appropriate experience, knowledge and skills to provide medication reviews to the required standard. AACP requires mandatory reaccreditation assessment every three years and yearly evidence of completing continuing professional development. SHPA has annual reaccreditation requirements and full reassessment and certification every five years to ensure knowledge remains relevant and current.

Further information available at: www.aacp.moodle.com.au and www.shpa.org.au

2.3 RMMR service agreement

All Australian Government-funded ACFs are eligible to obtain access to RMMR services by entering into a RMMR service agreement with a RMMR service provider. The agreement may be terminated by the ACF or the approved RMMR service provider with 30 days' prior written notice.

Further information is available at: www.medicareaustralia.gov.au/provider/pbs/fifth-agreement/files/model-rmmr-service-agreement.pdf

2.4 RMMR service provider

To become an approved RMMR service provider for an ACF, the applicant is required to:

a) be a registered pharmacist who is either an accredited pharmacist or employs or has a service contract with one or more accredited pharmacists to conduct medication reviews on their behalf; or

b) be a business that employs or has a service contract with one or more accredited pharmacists to conduct medication reviews on their behalf;

c) hold a current, valid RMMR service agreement with an Australian Government-funded ACF to provide RMMR services in that facility;

d) complete and sign the required application form, and send it to Medicare for approval along with the RMMR service agreement that has been signed by an authorised signatory of an ACF; and

e) have the above application approved by Medicare.

Further information available at: www.medicareaustralia.gov.au/provider/pbs/fifth-agreement/residential-medication-management-review.jsp

To become an approved RMMR service provider for a MPS, a MPS RMMR service agreement must be in place. Applications are approved by DoHA. A MPS RMMR service agreement and application form must be completed and submitted to DoHA for approval.

Further information available at: www.health.gov.au/internet/main/publishing.nsf/Content/fifth-community-pharmacy-agreement-professional-programs

2.5 Professional collaboration

Accredited pharmacists providing RMMRs to ACFs are strongly encouraged to collaborate with GPs, facility staff, residents and their families allowing for the successful implementation and continuation of RMMR services in ACFs.

A major benefit of creating an environment of collaboration is the establishment of relationships with key participants in the RMMR service. Holding face-to-face meetings with GPs and facility staff and associated healthcare providers has been shown to be critical in the establishment of effective working relationships. It is this relationship development that can be responsible for the effective uptake of the RMMRs by GPs and the facility.

Education and information sessions can be conducted by pharmacists to increase the awareness of the service and demonstrate how RMMRs can be integrated into the healthcare cycle of residents. GPs are able to access a range of Medicare items for health assessments in particular groups of people which may lead to the identification of a resident's need for a RMMR. These include general consultation items, specific health assessment items and chronic disease management items.

A RMMR is intended to assist the GP by identifying and advising on relevant medication-related problems. The accredited pharmacist collaborates with the GP and suggests strategies for effective and improved medication management with the resident's GP so optimal health outcomes for the resident can be achieved. This process is facilitated if the accredited pharmacist and GP have an established professional relationship and an environment of trust exists between them.[14]

Further information on GP involvement in ACFs is available at: www.racgp.org.au/guidelinesGuidelines/silverbook

The RMMR service provider should collaborate with the QUM service provider, if they are different, to identify QUM activities that would most benefit the facility and its residents.

3. RMMR process

3.1 Resident identification

The resident's GP, a community or accredited pharmacist, nursing staff, another member of the healthcare team, the resident themselves or their carer may identify the potential need for a RMMR.

A resident is eligible for a RMMR if they are a holder of a current Medicare or DVA card, and a permanent resident of a facility in which residential care services are provided, as defined in the *Aged Care Act 1997*.[9]

Generally, new residents should receive a RMMR as soon as possible after admission. Resident consent to participation in the RMMR is gained at the time of admission. It is the RMMR service provider's responsibility to ensure consent has been granted. For further information refer to section 6.1 Residents' rights, confidentiality and consent.

RMMRs are available to current residents on a clinical needs basis. Medicare benefits entitle eligible residents to one RMMR in any 12-month period; however, additional medication reviews may be clinically indicated when there has been a change in medical conditions or medication regimens, including but not limited to:

- discharge from hospital in the previous four weeks;
- significant change to medication regimen in the past three months;
- change in medical condition or abilities (including falls, cognition, physical function);
- prescription of a medicine with a narrow therapeutic index or requiring therapeutic monitoring;
- presentation of symptoms suggestive of an adverse drug reaction;
- sub-therapeutic response to therapy;
- suspected non-compliance or problems with managing medication-related devices; or
- risk of, or inability to continue managing own medicines, due to changes in dexterity, confusion or impaired vision.

In such cases, an additional RMMR can be requested by the resident's GP. The RMMR service provider may notify the resident's GP when the clinical need for a RMMR arises. For residents indicated as being in urgent need of a medication review or who have been re-admitted following discharge from hospital, the RMMR should be completed within 7 –10 days of receiving the referral. The accredited pharmacist or ACF staff can contact the GP to initiate the review process.[8]

3.2 Conducting RMMR services

RMMR services must be conducted by an accredited pharmacist in collaboration with a resident's GP. All aspects of a RMMR, including resident and staff interviews, data collection, clinical assessment and report writing, must be conducted by an accredited pharmacist.

The RMMR process starts when the resident's GP provides the written referral and clinical information to the RMMR service provider. The medical practitioner and RMMR service provider should agree on a preferred means for communicating issues and information relating to the provision of the RMMR. This should include the method(s) of initiating the RMMR, exceptions to the post-review discussion, and the preferred method of communication, which can be done on a facility basis rather than on a resident-by-resident basis.

Only in exceptional circumstances, with prior approval from DoHA, can a RMMR be conducted by an accredited pharmacist without a referral from the resident's GP. Exceptional circumstances are determined by DoHA.

Further information is available at: www.health.gov.au/internet/main/publishing.nsf/Content/fifth-community-pharmacy-agreement-professional-programs

The accredited pharmacist should adopt a systematic approach when conducting the RMMR, which they should perform methodically, using an organised procedure to gather data, identify potential and actual medication-related problems, consult and decide upon the most appropriate options to remedy such problems and document findings and recommendations.[8]

The RMMR is based on the resident's clinical need and the approved RMMR service provider should notify a resident's GP if that need arises. In such cases, the GP then has the opportunity to initiate a RMMR. Procedures for obtaining a referral for a RMMR may be discussed with individual GPs and the facility through Medication Advisory Committees.

RMMR referrals are valid only if received on or before the date of the RMMR. Referrals cannot be made retrospectively. Referrals from GPs should meet the RACGP Standards stating the purpose of the referral as well as patient identification. RACGP Standards also state that "the person to whom the patient is referred receives sufficient relevant information to manage the patient". In the case of RMMRs, that resident information is readily available in the resident's notes at the aged care facility. Essentially, referrals from GPs need to be in a manner that their peers would agree is suitable for the appropriate treatment of their patients and good medical practice. Referrals need to be signed and dated by the GP.

3.3 Gathering resident data

The accredited pharmacist gathers resident data and establishes a resident profile for each resident having a RMMR. The profile can be updated at each subsequent review to enable monitoring of clinical progress. Regular review of the resident's profile is vital to assess the appropriateness of the medication regimen in the context of a resident's clinical status.

Gathering resident information can be obtained directly from the resident, if appropriate, or from talking to their family, next of kin and staff members about the resident's history or current health issues.

The type and range of information gathered should include:

- demographic and/or personal information (resident name, Medicare/DVA/concession details, location in the facility, date of birth, gender, weight, height, body mass index);
- relevant social history (previous occupation, lifestyle, cultural factors, family and/or social support systems including authority/consenting rights, attitudes to health, illness and treatment, general understanding of current situation, health status, expectations);
- patient history (medical, surgical and/or specialist history, current conditions or co-morbidities, pathology and/or radiology investigations and results, allergies, previous adverse drug reactions); and
- resident assessment (status regarding frailty, vision, hearing, balance, cognition, memory, mood, gait, mobility, dexterity and rehabilitation, swallowing, oral and dental care, psychological status, nutrition and hydration, skin care and management of pain, continence, behaviour, sleep).[15]

The comprehensive information gathered about the resident and their medicine use provides context for the accredited pharmacist to use when identifying any medication-related problems.

3.4 Medication-related problems

A medication-related problem can be described as any undesirable event experienced by the resident that is thought to involve drug therapy, and that actually or potentially interferes with a desired outcome. These may include:[16]

- medicine use without indication – the resident is prescribed medicine in the absence of medical evidence, with no medically valid indication or PBS indication;
- untreated indication – the resident has a medical problem that requires drug therapy but is not receiving the appropriate therapy;
- improper drug selection – the resident has a medical indication but is prescribed the incorrect drug, or is taking a drug that is not the drug of choice or the most appropriate for the needs of the individual resident;
- sub-therapeutic dosage – the resident has a medical issue and is being prescribed too little of the correct medicine;
- over dosage – the resident has a medical issue and is being prescribed too much of the correct medicine;
- unnecessary medicine – the resident continues to take a medicine for a medical condition that has resolved;
- ineffective medicine is continued with evidence of a lack of desired outcome;
- adverse drug reactions – the resident has a medical issue that is the result of an adverse drug reaction, toxicity or adverse event;
- incorrect administration of a medicine e.g. crushing a sustained-release product or dosing at the wrong time;
- the medication order is poorly written or ambiguous creating confusion for facility staff;
- drug interactions – the resident has a medical issue that is the result of a drug-drug, drug-food or drug-laboratory test interaction; or
- failure to receive medicine – the resident has a medical issue but is not receiving prescribed medicine.

Evidence demonstrates that exposure to potentially inappropriate medicines in the elderly is associated with increased hospitalisation and attendance to emergency departments, increased harm, poorer health outcomes and even death.[17]

To aid accredited pharmacists to recognise possible medication-related problems, there are several prescribing indicator tools that are designed to identify potentially inappropriate medicine prescribing especially in those over the age of 65 years. These include:

- START (Screening Tool to Alert doctors to the Right Treatment) which includes criteria indicating medicines that are considered beneficial, arranged according to physiological systems.[18]
- STOPP (Screening Tool of Older Persons' potentially inappropriate Prescriptions) which includes criteria indicating medicines which are considered inappropriate in the older person, including drug-drug and drug-disease interactions, medicines which adversely affect older consumers at risk of falls and duplicate drug class prescriptions, arranged according to physiological systems.[19]
- Drug Burden Index, an evidence-based tool that measures a person's total exposure to medicines with sedative and anticholinergic properties which have been shown to impair cognitive and physical function.[20]
- Beers criteria, a list of medicines or classes of medicines that are considered inappropriate in the elderly population which remains a valuable tool for initial screening of prescribed medicines.[21]
- McLeod criteria, which is Canadian data similar to the Beers criteria.[22]
- The Medication Appropriateness Index (MAI) is an indexing system that measures drug therapy appropriateness for elderly consumers, using 10 criteria for each medicine prescribed.[23]
- Prescribing Indicators tool (Australian) has been developed to identify inappropriate medicines based on diseases commonly identified in older Australians aged over 65.[24]

Such tools can form an important part of the medication review process and should be considered as a reference and guide for accredited pharmacists.

3.5 RMMR report

Once identified, the clinical relevance of the medication-related problem should be assessed and prioritised. The accredited pharmacist should also consider the efficacy of the resident's medicine in the context of the resident's clinical status. A review of the appropriate alternatives and options should be conducted and prioritised for consideration by the GP.

The accredited pharmacist reviews the information collected from the resident profile, resident and staff interviews and other sources such as resident sleep, pain and incontinence charts to formulate recommendations for resolution or prevention of any identified medication-related problems. These recommendations may include medicine changes, resident education, nursing or care staff, strategies for improved medication adherence and further monitoring as well as comments on the actual or potential impact of the medicine on the resident.

A written report is provided to the GP containing details of any medication-related problems identified, as well as suggestions for resolution of these problems. Such strategies or recommendations need to be prioritised. Any critical issues should be verbally communicated to the GP. The written report for consideration by the GP should be communicated in a manner agreed upon by the facility and the GP. The GP retains responsibility for diagnosis, treatment decisions and prescribing. Changes to the resident's medication regimen will be determined by the GP, in consultation with the resident and/or resident's family, the facility, and the accredited pharmacist, after consideration of the RMMR report in the context of the clinical and social status of the resident.

3.6 Documentation and reporting

The RMMR should be conducted and reported on in a timely manner. In general, the accredited pharmacist should complete the RMMR within two to four weeks of receiving the referral, or

notify the referring healthcare provider if there is to be a delay (see Appendix 3 Criterion 4).

The accredited pharmacist should document that a RMMR has been conducted both in the resident's case notes, and also on their medication chart. A copy of the RMMR report and the GP medication management plan should be filed in the resident's case notes.

Any documentation should be presented in a manner that allows all parties involved in the RMMR process to view the identified problems, any recommendations, interventions and follow-up activities suggested, the date on which any action was taken and by whom. A record of the names of the resident, GP, specialist, pharmacy and/or nursing staff with whom contact was made and the dates of contact should also be included. All documentation should be stored in a safe and secure environment, for a minimum of seven years, which allows for timely retrieval and avoids unauthorised access to maintain privacy and confidentiality.

The accredited pharmacist should also provide medicine information and advice to nursing staff and carers, including requirements for medicine to be safely and correctly administered. The information should be designed to address staff or resident concerns, reduce confusion, and promote safe and appropriate use of medicines and adherence with the prescribed medication regimens. Information and advice regarding therapeutic device usage, storage, drug preparation and drug administration should also be included. The information should be provided both verbally and in written form, including the supply of consumer medicine information (CMIs) leaflets.

These processes assist in meeting Criterion 8 of the Medication Review Standard (see Appendix 3).

3.7 Follow-up and monitoring

The RMMR service involves a post-review discussion between the GP and the accredited pharmacist, unless exceptional circumstances apply.[25] It is strongly recommended that such communication involve a face-to-face component to develop trust and collaboration between the GP and the accredited pharmacist. Exceptions to mandatory post-review discussion should be stated in the communications agreement between the GP and the pharmacist.

The post-review discussion is not mandatory if: [25]

- there are no recommended changes from the review;
- changes are minor in nature and do not require immediate discussion; or
- the pharmacist and GP agree that issues from the review should be considered in a GP multidisciplinary case conference.

Accredited pharmacists have a critical role to play in the effective monitoring of the efficacy and/or harm of each medicine used by the resident. They may recommend monitoring parameters for the resident, and then review results of monitoring to help evaluate therapeutic outcomes and recommend any required changes as a result of the monitoring process. The accredited pharmacist should follow-up and document outcomes from any subsequent visits and provide additional comments and recommendations where appropriate (see Appendix 3, Criterion 6).

3.8 Payment

Payments of a single prescribed fee for each RMMR conducted in an ACF are made by Medicare. The RMMR service fee is paid according to the date of service and is paid monthly once the claim form is submitted and approved by Medicare.

Payment for RMMRs conducted in a MPS is made by DoHA.

Medicare provides a rebate for GP involvement in a RMMR service. To claim a MBS Item 903 – RMMR, the GP needs to actively participate in the RMMR process by: [25]

- discussing and seeking consent for a RMMR from the eligible resident;
- providing input from the resident's comprehensive medical assessment and/or providing relevant clinical information which assists the accredited pharmacist in providing RMMRs to the resident;
- collaborating with the accredited pharmacist and discussing, where necessary, the pharmacist's recommendations and proposed medication management strategies;
- developing or revising a written medication management plan for the resident; and
- consulting with the resident (where possible) and/or next of kin/family to discuss the medication management plan and its implementation.

Further details of the claiming process available at: www.medicareaustralia.gov.au/provider/pbs/fifth-agreement/residential-medication-management-review.jsp

4. Establishing QUM services

4.1 Aim and focus

QUM services focus on improving practices and procedures relating to medicine use in ACF. Services such as medication advisory activities, education and continuous improvement activities are designed to help facilities better meet the healthcare needs of residents.

Effective QUM services require committed teamwork between all members of the healthcare team including GPs, community pharmacists, nurses, facility staff, carers and management. Pharmacists play an important role in QUM through their promotion of appropriate treatment choices; effective communication with residents, prescribers and medicine administration staff; and assisting communication and collaboration between these parties.

4.2 QUM service agreement

A QUM service agreement is an agreement between a QUM service provider and an ACF, for the provision of QUM services. All Australian Government-funded ACF are eligible to access QUM services.

The QUM service agreement must include a work plan that details the agreed QUM activities between the facility and the approved QUM service provider. The QUM service provider, in consultation with the ACF, identifies a range of QUM activities that will assist in improving practices and procedures relating to medicine use in the ACF. A facility-wide approach to QUM must be adopted and all parties involved need to understand how such activities relate to the needs of the facility and the residents. Activities such as medication advisory activities, education and continuous improvement are specifically tailored to meet the needs of the facility.

The need for continuous improvement activities such as assessing residents' ability to self-administer medicine and medication audits and surveys may be identified by the accredited pharmacist during a RMMR. The QUM service provider should collaborate with the RMMR service provider, if they are different, to identify QUM activities that would most benefit the facility and its residents. The type and frequency of QUM services are documented in the service agreement between the QUM service provider and the ACF. The QUM activities decided upon must include activities from the approved list of QUM activities. However, other QUM activities may be conducted as detailed in the QUM service agreement. For examples of these activities see Appendix 3.

Only one QUM service provider may be approved for each ACF.

Further details are available at: www.medicareaustralia.gov.au/provider/pbs/fifth-agreement/files/model-qum-service-agreement.pdf

4.3 QUM service provider

To become an approved QUM service provider for an ACF the applicant is required to:

a) be a registered pharmacist or employ, or have a service contract with, one or more registered pharmacists to conduct QUM services on their behalf; or

b) be a business that employs or has a service contract with one or more registered pharmacists to conduct QUM services on their behalf;

c) hold a current, valid QUM service agreement with an Australian Government-funded ACF to provide QUM services in that facility;

d) complete and sign the required application form, and send it to Medicare for approval along with the QUM service agreement that has been signed by an authorised signatory of an ACF; and

e) have the above application approved by Medicare.

The approved QUM service provider ensures that QUM services are conducted by a registered pharmacist who is able to respond appropriately to requests from the ACF and the provided services adhere to recognised professional standards. The approved QUM service provider is responsible for ensuring that the service agreement entered into with the ACF constitutes a valid QUM service agreement.

To become an approved QUM service provider for a MPS, a QUM MPS service agreement must be in place. Applications are approved by DoHA. A QUM MPS service agreement and application form must be completed and submitted to DoHA for approval.

Further information is available at: www.medicareaustralia.gov.au/provider/pbs/fifth-agreement/files/4640-mmr-programs-app.pdf

5. Quality Use of Medicines (QUM) services

5.1 QUM services

QUM services for which the QUM service provider may be entitled to remuneration from Medicare as listed in the QUM service agreement include the following general categories:

- Medication advisory activities
- Education activities
- Continuous improvement activities.

The QUM service provider must conduct at least one of the QUM services included in Schedule 1 of the agreement per quarter to be eligible for remuneration by Medicare. Other QUM services may be agreed with the ACF but these services are not entitled to remuneration by Medicare.

Further information is available at: www.medicareaustralia.gov.au/provider/pbs/fifth-agreement/quality-use-of-medicines.jsp

5.2 Payment

Payment for QUM services provided by approved QUM service providers to ACF in accordance with the signed service agreement, are paid by Medicare. QUM payments are based on the number of eligible aged care places at the facility as stated in the application form. A minimum of one QUM service must be provided each quarter to receive the QUM payment.

Payment for QUM services provided by an approved MPS QUM service provider to a MPS in accordance with the signed service agreement, are paid by DoHA.

6. Essential components of RMMR and QUM services

6.1 Residents' rights, confidentiality and consent

Each resident's right to privacy, dignity and confidentiality should be recognised and respected. An integral part of best practice in medication management in ACFs is observing residents' rights. These rights and responsibilities are provided under the *Aged Care Act 1997*, Part 4.2 (User Rights Principles 1997) and are outlined in the Charter of Residents' Rights and Responsibilities in *The Residential Care Manual* developed by the Department of Health and Ageing.[26]

Pharmacists should respect and safeguard the resident's right to privacy and confidentiality at all times. Confidentiality needs to be maintained through the development of secure files (either electronic or in a secure filing cabinet). This includes ensuring that any resident information that is transmitted electronically uses encrypted or secure electronic messaging to enhance security. At no time should resident information be shared with unauthorised people, the resident's relatives or other healthcare providers without the consent of the resident or their representative.

Pharmacists should refer to any State or Territory privacy legislation or health privacy frameworks. Pharmacists are also required to meet the relevant professional practice standards. Refer to Criterion 3 of the *Fundamental Pharmacy Practice* Standard of the *Professional Practice Standards*, version 4 in the provision of RMMR services.[8]

Where resident data is required to be disclosed to staff from the Department of Health and Ageing, Medicare or the Standards and Accreditation Agency, informed consent has to be obtained from the resident or their representative.

Resident consent also needs to be obtained for medication reviews and QUM services to be conducted and the associated sharing of necessary information between healthcare providers. This should be obtained as part of the ACF's admission procedures. The approved RMMR and QUM service providers should confirm with the ACF that appropriate consent has been obtained from eligible residents before RMMRs and QUM services are conducted.

6.2 Communication

All staff involved in residents' care need to be aware that medication management is not an isolated pharmacist activity, but rather collaborative and multidisciplinary where all stakeholders play a role. All pharmacists working in ACFs can use their specialist drug knowledge and experience in developing safe systems for medicines and monitoring medication use to make an important contribution to the work of multidisciplinary teams. [27]

It is critical to the success of RMMR and QUM services that effective communication and collaborative working relationships are established and maintained with all members of the healthcare team. The approved RMMR and the approved QUM service providers play pivotal roles in ensuring adequate communication exist between the pharmacist and the residents' GPs, the Director of Nursing or authorised representative, ACF nursing and other staff, other healthcare providers and the pharmacy supplying the residents' medicines. Regular face-to-face communication should be encouraged whenever possible to foster better working and collaborative relationships. The quality of any interaction is dependent on trust as healthcare team members need to be confident that the information they receive from each other is reliable and accurate. This is an essential element of establishing relationships of trust, which is the basis for cooperation.[14]

RMMR and QUM service providers need to communicate with residents, GPs, staff members, other health providers and to each other to gather and convey relevant medication-related information. When the RMMR and QUM service providers are different, communication needs to exist to allow optimal transfer of information. The RMMR service provider, when conducting RMMRs may identify QUM activities that may be beneficial in the ACF such as specific drug usage reviews. This needs to be communicated to the QUM service provider. QUM service providers may need to communicate results from surveys and reviews and provide educational sessions to the local and regional MAC, GPs and facility staff using the established facility protocols for communication.

Formal arrangements for structured and documented communication and coordination should be in place between all involved parties. Any reports and communication on issues and information relating to the RMMR and QUM services should be communicated in a way agreed upon by all parties involved, with confidentiality of the information a prime consideration. This may include postage, personal delivery and fax with coversheet containing disclaimer. Emails should only be provided if they are encrypted to ensure secure messaging. These processes are consistent with Criterion 3 of the Medication Review standard (see Appendix 3).

6.3 Policy, procedures and documentation

a) Resident and record access

After both the RMMR and QUM service agreements have been developed and signed, the RMMR and QUM service providers are required to develop and agree to protocols regarding access to residents, medical records and ACF staff by the pharmacists.

b) Documentation

Effective documentation is essential to maximise safety, quality and efficiency throughout the RMMR and QUM services. All pharmacists involved in the RMMR and QUM services must maintain accurate documentation for all services provided, record all activities undertaken and strategies developed. Both the RMMR and QUM service providers must keep full and accurate records and reports of each service that has been provided for seven years. Storage of all documentation should be done in a safe, systematic and secure manner that allows timely and accurate retrieval while reducing the risk of unauthorised access and failure

of confidentiality. These processes assist with meeting Criterion 5 of the Medication Review Standard (see Appendix 3).

Further information available at: www.medicareaustralia.gov.au/provider/pbs/fifth-agreement/files/model-qum-service-agreement.pdf

The RMMR service provider should create and maintain a comprehensive medication profile. This information may come from several sources, including the medication chart and resident case notes. CMAs, hospital discharge summaries, reports from other health professionals and laboratory test results should also be considered (see Criterion 7 of the Medication Review Standard at Appendix 3).

The medication profile should include:

- all current medicines, including prescription and non-prescription, complementary medicines, dose administration aids, therapeutic devices and appliances;
- dose, strength, dose form, directions, route of administration and duration of therapy for each medicine;
- when necessary ('prn') medicines and the frequency of their administration;
- short term medicines (e.g. antibiotic courses); and medicine administration instructions.

6.4 Standards and Guidelines for aged care facilities

The Accreditation Standards and Guidelines for aged care facilities, detailed in the *Quality of Care Principles* of the *Aged Care Act 1997*, *Residential Care Manual,*[26] *Standards and Guidelines for Residential Aged Care Services Manual*[28] and *Documentation and Accountability Manual* reflect the quality management and services expected of a residential aged care service. Residential aged care services are assessed against these standards to determine their suitability for accreditation by the Aged Care Standards and Accreditation Agency.[14] To ensure 'residents' medicine is managed safely and correctly' as detailed in Standard 2.7 (Medication Management) of the ACF accreditation standards, ACFs should have policies and practices to ensure that:

- there is safe administration and storage of medicines;
- incident reporting mechanisms are present, functional and acted upon;
- medication orders are written legibly and are available to administering staff; and
- residents' medicine is regularly reviewed by appropriate health professionals.

RMMR and QUM services provided to ACFs may also assist in achieving expected outcomes in a number of other accreditation standards. Further information available at: www.accreditation.org.au/accreditation/accreditationstandards

The *Guidelines for medication management in residential aged care facilities* were developed by the Australian Pharmaceutical Advisory Council (APAC) to reflect the accreditation standards for aged care facilities and other relevant legislation.[29] The recommendations made in the Guidelines relate to policies and procedures in individual facilities to ensure that all areas of medication management and decision making function together as a coordinated program utilising the skills of multi-disciplinary teams.

A resource kit has been developed to assist pharmacists by providing practical, easy-to-use tools and templates to assist with the implementation of the APAC Guidelines available at: www.health.vic.gov.au/dpu/resource-kit.htm

7. Resources

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Appendix 1. RMMR Flowchart

RMMR services

Establish a RMMR service agreement between a RMMR service provider and an ACF for the provision of RMMR

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Resident identification

e.g. ≥5 regular medications; ≥12 doses of medication per day; ≥3 medical conditions; admission to facility or hospital in past 4 weeks; significant changes to medication regimen in past 3 months; medication with narrow therapeutic index or requiring therapeutic drug monitoring; symptoms suggestive of adverse drug reaction (ADR); sub-therapeutic response to treatment; suspected non-compliance/problems managing medication-related therapeutic devices; risk due to language difficulties, dexterity problems, impaired sight or cognitive difficulties; increasing frailty, etc.

↓

RMMR is clinically indicated. GP refers resident for RMMR.

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Gathering resident data. Resident profile is established

Demographic/personal info: name; Medicare/RPBS number; room number; date of birth (DOB), gender, weight (including recent changes), height.
Social history: (previous) occupation, lifestyle, cultural factors; family/support systems; attitude to health, expectations, concerns or preferences.
Medical history: past medical/surgical history; current condition(s) and signs/symptoms; lab results; allergies/previous ADRs.
Medication history: collate information from medication chart, admission summary, discharges summaries and other sources.
Resident assessment: clinical interviewing, observational and physical assessment skills employed to integrate information.
The resident should be as actively involved in this step as appropriate.

↓

Information gathered

In addition to medication chart review, the following sources may be used to collate information:

- admission records/comprehensive medical assessment (CMA); prescriber(s) progress notes; hospital discharge summaries;
- nursing progress notes/care plans;
- medication dispensing history; laboratory test results;
- discussion with nursing staff, resident or GP where appropriate.

The resident should be as actively involved in this step as appropriate.

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Identification of medication-related problems

Medication use without indication; untreated indication; improper drug selection; sub-therapeutic dosage; over dosage; adverse drug reaction; drug interactions; failure to receive medications.

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Optimisation of medicine

Accredited pharmacists should also consider the efficacy of the resident's medications in the context of the clinical status of the resident.
A review of the appropriate options should be conducted and prioritised for the consideration of the GP.

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RMMR Report

Recommendations may fall into three categories:

- medication changes;
- education and adherence;
- monitoring.

Recommendations should address medication-related problems, summary of actual or potential impact on resident, and options.
Accredited pharmacists should also provide medication information or advice to nursing staff and carers.

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Documentation and reporting

The accredited pharmacist should document that a RMMR has been conducted in the resident's chart and progress notes.
A record should be kept of all problems identified, recommendations, interventions and follow-up activities (including date and time).
The accredited pharmacist provides a report for consideration by the GP. This should be communicated in a way agreed to by the GP and ACF. A copy of the final agreed medication management plan should be included in resident's care notes.
All documents should be stored in a safe, secure environment.

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Follow-up and monitoring

The report will record outcomes resulting from interventions and recommendations when they are known at the time of reporting.
The accredited pharmacist should follow-up and document outcomes at subsequent ACF visits and provide additional recommendations where appropriate.
The accredited pharmacist may recommend monitoring parameters for the resident, and then review results of monitoring to help evaluate the outcomes of therapy and recommend any needed changes.
The resident should be as actively involved in this step as appropriate.

↓

Clinical intervention

Residents should have access to a RMMR upon admission and when deemed clinically appropriate.

Appendix 2. QUM Flowchart

QUM services

Establish a QUM service agreement between a QUM service provider and an ACF for the provision of associated QUM services.

Types of QUM activities[30]

A range of facility-focused activities, best catered to the facility in question, should be provided. These may include:

Medication advisory

- Participate in drug usage evaluation (DUE).
- Advise members of the healthcare team on a range of issues, including storage, administration, dose forms, compatibilities, therapeutic and adverse effects and compliance.
- Participant in MACs.
- Assist in the development of nurse-initiated medication lists.
- Participate in policy and procedure development activities.
- Assist in the development of policies and procedures to address medication management concerns, for example, sleep, bowel or pain management and infection control.

Education

- Provide in-service sessions for nursing staff and carers or residents on medication therapy, disease state management or prescribing trend issues.
- Provide drug information for medical practitioners and ACF staff, including provision of newsletters.

Continuous improvement

- Assist the facility to meet and maintain medication management accreditation standards and to comply with regulatory requirements.
- Assess competency of residents to self-administer medications
- Advise on and assess medication storage requirements, monitoring and standards, including: storage and labelling; expired stock; security of medication storage areas; safe disposal of unwanted medications.
- Conduct medication administration audits and surveys on medication errors, altered dosage forms and psychotropic drug use.
- Conduct medication administration audits and surveys on medication errors, altered dosage forms and psychotropic drug use.

Appendix 3. Professional Practice Standard 4 – Medication review

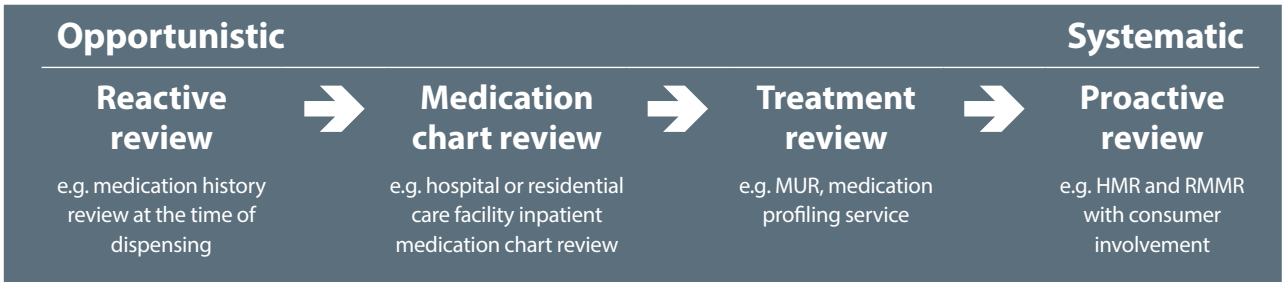
Standard

The pharmacist works with the consumer, and other healthcare providers, to systematically review the consumer's medication regimen, identify potential areas for improvement, and provide information and advice to optimise health outcomes.

Scope of this standard

- A 'medication review' is a systematic assessment of a consumer's medications and the management of those medications, with the aim of optimising consumer health outcomes and identifying potential medication-related issues within the framework of the quality use of medicines.
- The term 'medication review' encompasses a continuum of processes in various formats and complexities, ranging from an opportunistic discussion to a more comprehensive and proactive approach to reviewing the consumer's medication regimen (see Figure 1).
- This standard covers the key principles underpinning all types of systematic medication review services under any service arrangement including, but not limited to: hospital inpatient medication reviews, medication profiling services, Home Medicines Reviews (HMRs), Residential Medication Management Reviews (RMMRs), and Medicines Use Reviews (MURs). Opportunistic medication history reviews that are conducted during the dispensing process are covered in Standard 5: Dispensing.
- This standard is to be applied in conjunction with the Fundamental Pharmacy Practice and Counselling standards. Refer also to the Health Promotion standard, where appropriate.
- Pharmacists providing medication reviews should also be familiar with the relevant professional guidelines and business rules relating to these services, where available. For specific service-related information, refer to the relevant Professional Practice Guidelines for each individual service.

Figure 1. Medication review services fall along a continuum of increasing complexity. More complex services require additional training and skills from a pharmacist.



NOTE: HOME MEDICINES REVIEWS WERE FORMERLY KNOWN AS DOMICILIARY MEDICATION MANAGEMENT REVIEWS (DMMRs).

CRITERIA/INDICATORS	SELF CHECK: YES/ NO/NA	RESOURCES
Criterion 1: The pharmacist maintains the relevant level of competency necessary to undertake the specific medication review service		
1. Has completed the appropriate level of training and credentialing for the medication review service being delivered		∘ Australian Association of Consultant Pharmacy. www.aacp.com.au – AACP Competency Map: Medication Management Reviews – Accreditation diagram – HMR Mentoring Service – Fact sheet 5. Reaccreditation for MMRs ∘ Society of Hospital Pharmacists of Australia. MMR [Medication Management Review] accreditation. www.shpa.org.au
2. Maintains currency of the knowledge and skills required to deliver the medication review service		
3. Accesses appropriate resources to support service delivery		
Criterion 2: The pharmacist works collaboratively with the consumer and other health care providers		
1. Determines and uses the preferred method of communication for the consumer and other health care providers		∘ Pharmacy Guild of Australia. Medication Management Review Program. Communication and concordance module. www.guild.org.au
2. Ensures the consumer has provided informed consent for both the service and for communication with their other health care provider(s)		
3. Conducts the medication review in an environment that meets the needs of the consumer		
4. Liaises with any other pharmacists involved in the medication review service to ensure all tasks are completed and follow-up occurs if required		
Criterion 3: The pharmacist follows a systematic procedure for conducting the medication review		
1. Forms an agreement with any other pharmacists involved in different aspects of the review to ensure all tasks are performed		∘ Australian Association of Consultant Pharmacy. www.aacp.com.au – AACP Procedures and Resources Manual: Medication Management Review – Framework Document for Domiciliary Medication Management Reviews ∘ Society of Hospital Pharmacists of Australia. SHPA standards of practice for clinical pharmacy. Appendix A: Accurate medication history. J Pharm Pract Res 2005;35:122–46 ∘ Pharmaceutical Society of Australia. www.psa.org.au – Guidelines for pharmacists: Domiciliary Medication Management Review – Guidelines and Standards for the Collaborative and Pharmacist Residential Medication Management Review (RMMR) Program and Associated Quality Use of Medicines (QUM) Services – Medication Profiling Service [Guidelines and standards] ∘ Pharmacy Guild of Australia. Quality Care Pharmacy Program. Home Medicines Review checklist (T3F). www.guild.org.au/qcpp
2. Conducts a consumer interview to compile a medication history, unless direct communication with the consumer is not possible		
3. Reviews consumer's current medication, utilises consumer files, pharmacy records, and information from other health care providers to further inform the medication review		
4. Assesses adherence and provides advice on how to improve adherence if necessary		
5. Assesses the consumer's medication regimen and identifies potential medication-related issues		

CRITERIA/INDICATORS	SELF CHECK: YES/ NO/NA	RESOURCES
Criterion 4: The pharmacist conducts the medication review and reports findings, where relevant, in a timely manner		
1. Completes the medication review within 2–4 weeks of receiving the referral or notifies the referring health care provider if there is to be a delay		
2. Completes medication reviews initiated upon hospital discharge, or those indicated as urgent, within 7–10 days of receiving the referral		
Criterion 5: The pharmacist maintains accurate documentation for the medication review service provided		
1. Records all activities undertaken and strategies developed in the course of a medication review		◦ Australian Association of Consultant Pharmacy. AACP sample agreement between HMR Service Provider and the Accredited Pharmacist. www.aacp.com.au
2. Stores all medication review documentation in a safe, systematic and secure manner that allows timely and accurate retrieval		
3. Prepares a comprehensive report documenting recommendations, if relevant		
Criterion 6: The pharmacist addresses and follows up any issues arising from the medication review		
1. Addresses any current, or potential, medication-related issues identified in the medication review, in conjunction with other health care providers, where appropriate		
2. Prioritises any identified issues and addresses them in a timely manner		
3. Promptly communicates to the appropriate health care provider any findings that may seriously affect the consumer's health		
4. Records any follow-up actions resulting from the medication review, if known		
Criterion 7: The pharmacist creates and maintains a comprehensive medication profile with involvement from the consumer and their other health care providers		
1. Uses suitable computer software to record relevant consumer details in the medication profile		◦ Pharmaceutical Society of Australia. *Medication Profiling Service* [Guidelines and standards]. www.psa.org.au ◦ National Prescribing Service. Medicines list. www.nps.org.au ◦ Australian Government Department of Health and Ageing. Medi-list. www.health.gov.au
2. Maintains a medication profile for each consumer that is current and complete at the time of review		
3. Shares and discusses details of the medication profile with the consumer, including how it can be used as a resource to improve continuity of care		
4. Obtains relevant information from the consumer's other health care providers as required		

CRITERIA/INDICATORS	SELF CHECK: YES/ NO/NA	RESOURCES
Criterion 8: The pharmacist provides the consumer and other health care providers with relevant information to optimise health outcomes		
1. Provides accurate and relevant written and verbal information to the consumer's other health care providers as needed		∘ Pharmacy Guild of Australia. www.guild.org.au – Medicines Information to Consumers Program – When to Provide Consumer Medication Information ∘ Pharmaceutical Society of Australia. www.psa.org.au – Consumer Medicine Information and the Pharmacist – Guidelines for Pharmacists on Providing Medicines Information to Patients – Self Care Fact Cards ∘ Consumer Medication Information. www.medicines.org.au ∘ National Prescribing Service. www.nps.org.au – Consumer Medicine Information (CMI) search – NPS patient resources for health professionals ∘ HealthInsite. www.healthinsite.gov.au ∘ Professional Practice Standard 3: Counselling, p. 20
2. Maintains access to current sources of evidence-based information about medicines, therapeutic devices, and lifestyle issues		
3. Provides the consumer with written and oral information and advice appropriate to their needs		
4. Demonstrates and observes the use of any therapeutic devices, aids, and systems designed to assist in medication use and adherence		
5. Provides any other pharmacists involved with the medication review with relevant information to ensure continuity of care		

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Attachment B: *Choosing wisely – sedatives (article published in the May 2019 issue of Australian Pharmacist, PSA's professional journal for pharmacists)*

CHOOSING WISELY: SEDATIVES

BY PSA CHOOSING WISELY WORKING PARTY: **CHRIS CAMPBELL, DR AMY PAGE, SUE EDWARDS, A/PROF REBEKAH MOLES, DR KENNETH LEE, ALYSSA PISANO, DR SHANE JACKSON & DR CHRIS FREEMAN**

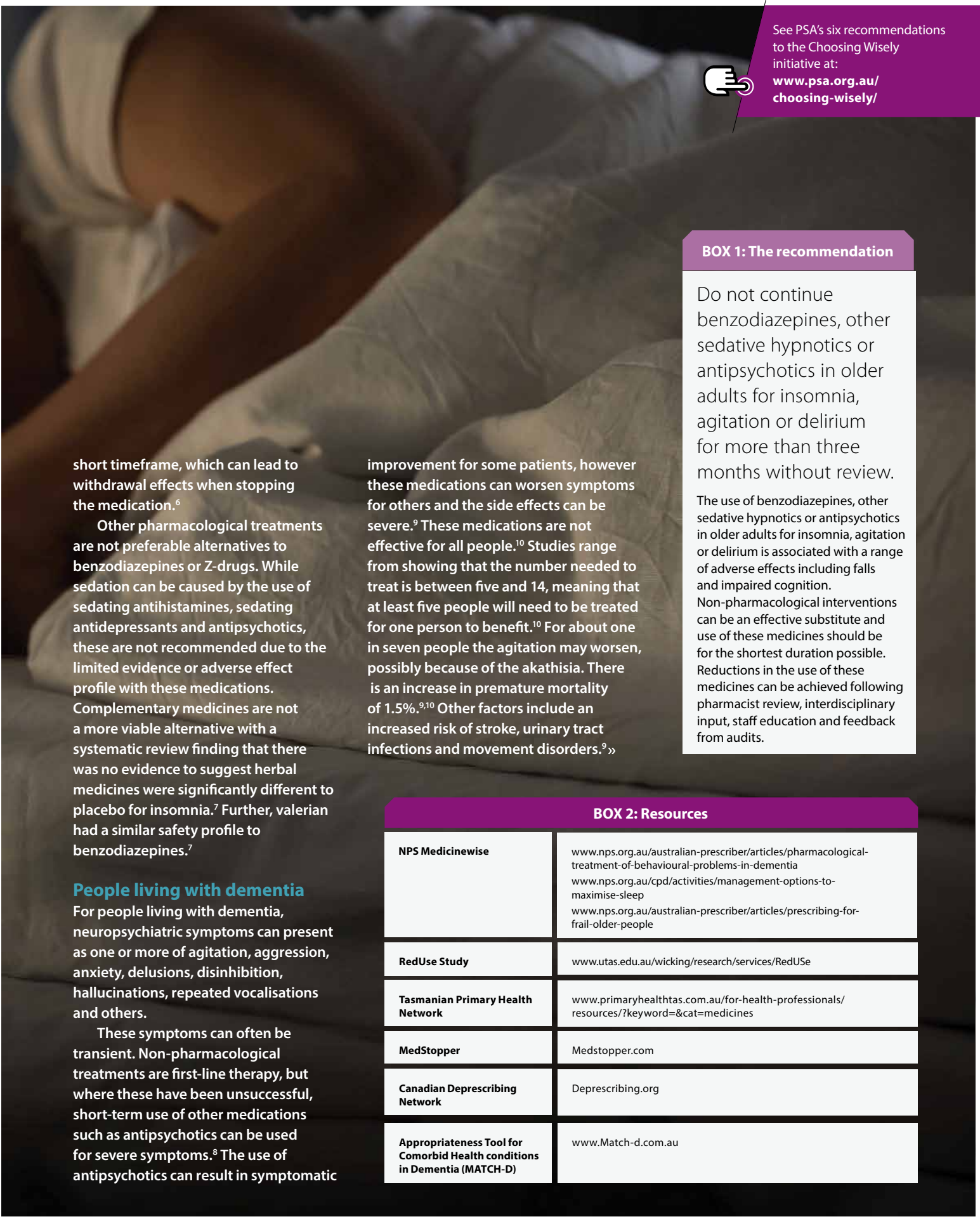
In the third of a six-part series, we expand on the PSA Choosing Wisely recommendations, taking a closer look at the use of sedatives.

Insomnia, agitation and delirium in older adults can cause significant distress to both the older adult and their caregivers. Sedative and hypnotic medications such as antipsychotics, benzodiazepines and Z-drugs are used to manage these symptoms. Sedative load is associated with impaired activities of daily living[1] and reduced physical function.[2] Many sedative medicines also have anticholinergic side effects, which add to the risk of typical anticholinergic effects of dry mouth, urinary retention, constipation and blurred vision, and less acknowledged effects on memory and cognition.[3] The highest rates of sedatives are in the older population even though they are most at risk of harm from adverse effects, such as falls and cognitive impairment.[3]

Insomnia

Insomnia includes difficulty getting to sleep and maintaining sleep, as well as unrefreshing sleep.[4] It can have profound impact on wellbeing and health, so improving daytime functioning, sleep quality and quantity is the main treatment goal. Non-pharmacological treatments form the mainstay of treatment options. Management of underlying problems and medications that can cause or exacerbate sleep disturbances is the first-line approach. Sleep hygiene education, and psychological and behavioural interventions such as relaxation therapies and cognitive therapies, are considered first-line treatment options.

Pharmacological treatment should be limited to short-term use and only where non-pharmacological treatments are ineffective. The *Therapeutic Guidelines* limit treatment options to short-acting benzodiazepines, Z-drugs, and melatonin.[5] Tolerance can develop rapidly to the medication which means it is unlikely to be effective long-term and can lead to escalating doses.[6] Dependence also can develop over a



See PSA's six recommendations to the Choosing Wisely initiative at: **www.psa.org.au/choosing-wisely/**

short timeframe, which can lead to withdrawal effects when stopping the medication.[6]

Other pharmacological treatments are not preferable alternatives to benzodiazepines or Z-drugs. While sedation can be caused by the use of sedating antihistamines, sedating antidepressants and antipsychotics, these are not recommended due to the limited evidence or adverse effect profile with these medications. Complementary medicines are not a more viable alternative with a systematic review finding that there was no evidence to suggest herbal medicines were significantly different to placebo for insomnia.[7] Further, valerian had a similar safety profile to benzodiazepines.[7]

People living with dementia

For people living with dementia, neuropsychiatric symptoms can present as one or more of agitation, aggression, anxiety, delusions, disinhibition, hallucinations, repeated vocalisations and others.

These symptoms can often be transient. Non-pharmacological treatments are first-line therapy, but where these have been unsuccessful, short-term use of other medications such as antipsychotics can be used for severe symptoms.[8] The use of antipsychotics can result in symptomatic improvement for some patients, however these medications can worsen symptoms for others and the side effects can be severe.[9] These medications are not effective for all people.[10] Studies range from showing that the number needed to treat is between five and 14, meaning that at least five people will need to be treated for one person to benefit.[10] For about one in seven people the agitation may worsen, possibly because of the akathisia. There is an increase in premature mortality of 1.5%.[9,10] Other factors include an increased risk of stroke, urinary tract infections and movement disorders.[9] »

BOX 1: The recommendation

Do not continue benzodiazepines, other sedative hypnotics or antipsychotics in older adults for insomnia, agitation or delirium for more than three months without review.

The use of benzodiazepines, other sedative hypnotics or antipsychotics in older adults for insomnia, agitation or delirium is associated with a range of adverse effects including falls and impaired cognition. Non-pharmacological interventions can be an effective substitute and use of these medicines should be for the shortest duration possible. Reductions in the use of these medicines can be achieved following pharmacist review, interdisciplinary input, staff education and feedback from audits.

BOX 2: Resources

NPS Medicinewise	www.nps.org.au/australian-prescriber/articles/pharmacological-treatment-of-behavioural-problems-in-dementia www.nps.org.au/cpd/activities/management-options-to-maximise-sleep www.nps.org.au/australian-prescriber/articles/prescribing-for-frail-older-people
RedUse Study	www.utas.edu.au/wicking/research/services/RedUSe
Tasmanian Primary Health Network	www.primaryhealthtas.com.au/for-health-professionals/resources/?keyword=&cat=medicines
MedStopper	Medstopper.com
Canadian Deprescribing Network	Deprescribing.org
Appropriateness Tool for Comorbid Health conditions in Dementia (MATCH-D)	www.Match-d.com.au

Experts in the field agree that non-pharmacological strategies should be used in preference to medications for the management of behavioural and psychological symptoms of dementia.[11] Benzodiazepines should be avoided, though they can be useful for managing acute agitation where use is closely monitored. Similarly, antipsychotics at low doses for limited periods can be considered for distressing behavioural symptoms that have not responded to non-pharmacological management strategies. When sedatives are given, strategies are needed to be implemented to improve the safety for these patients, e.g. increased monitoring and assistance with mobility and toileting.

The pharmacist's role in optimising medicines

A meta-analysis of deprescribing interventions found that interventions to withdraw antipsychotics and benzodiazepines made a significant difference in the usage of these medicines.[12] Pharmacists can take a leading role in these interventions. The EMPOWER study looked at pharmacists providing consumer education in the community pharmacy with the aim to reduce benzodiazepine use.[13] It found that one in four people ceased benzodiazepine use because of the pharmacists' intervention.[13]

Residential Medication Management Reviews (RMMRs) by pharmacists in aged care facilities and Home Medication Reviews (HMRs) have both been shown to reduce the overall use of sedative and anticholinergic medications.[14,15]

A multi-faceted, multi-disciplinary intervention in Australian aged care facilities showed a reduction of 81.7% in long-term regular antipsychotic use after 12 months.[16] Another Australian study in aged care facilities involving pharmacists providing education and undertaking reviews showed that 40% of residents had either been withdrawn from or reduced the dose of long-term antipsychotic use after six months.[17]

Pharmacists play an important role in reviewing and reducing the use of inappropriate sedatives and antipsychotics in older adults. The long-term use of these medications is frequently inappropriate with the potential for harm. Interdisciplinary and pharmacist-led interventions can contribute to reducing the use of these medications.

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CHOOSING WISELY: ANTIBIOTICS

BY PSA CHOOSING WISELY WORKING PARTY: **CHRIS CAMPBELL, DR AMY PAGE, SUE EDWARDS, A/PROF REBEKAH MOLES, DR KENNETH LEE, ALYSSA PISANO, DR SHANE JACKSON** & **DR CHRIS FREEMAN**

In the fourth of a six-part series, we expand on the PSA Choosing Wisely recommendations, taking a closer look at the dispensing of repeat antibiotic prescriptions.

There is considerable evidence that clinical outcomes between short and long courses of antibiotics are comparable for most community-acquired infections.[1] Despite this growing body of evidence, we still commonly see prescriptions for antibiotics written with repeats; how often is this clinically appropriate? The third of PSA's recommendations in the Choosing Wisely Campaign serves as a reminder to all pharmacists.[2]

Recommendation 3.

Do not dispense a repeat prescription for an antibiotic without first clarifying clinical appropriateness.

A quick scan of the 2017 Antimicrobial Use and Resistance in Australia (AURA) report[3] tells a scary tale about antibiotic resistance in Australia. For example, resistance to our last-line antibiotics for common community infections such as gonorrhoea has been reported, as well as a rapidly growing resistance to carbapenem,[3] a last-line broad-spectrum antibiotic.[4] Therefore, judicious use of antibiotics is warranted to slow the progression of resistance.

In addition to mitigating resistance, short-course antibiotics can reduce the likelihood of medication adverse effects.[5] Isn't this a win-win? Why, then, do our patients present with a repeat prescription of their antibiotics?

Request for a repeat antibiotic prescription: potential reasons

A patient presenting for a repeat antibiotic prescription could suggest one of three things: 1) a partial resolution of the bacterial infection, 2) no noticeable resolution of the bacterial infection from the initial antibiotic course, or 3) patient-initiated use of the antibiotic for a new infection.

See PSA's six recommendations to the Choosing Wisely initiative at: **www.psa.org.au/choosing-wisely/**

In response to the first point, it is worthwhile for pharmacists to check the prescribed indication against the Therapeutic Guidelines[6] to clarify the duration of therapy required, and the timeframe for when a referral is warranted if there is an inadequate response to therapy.

For instances where there is no noticeable resolution of the bacterial infection, it is important to double-check whether the antibiotic and/or dose/dose frequency prescribed was even appropriate in the first place for the given indication. For example, amoxicillin with clavulanic acid remains among the top three antibiotics prescribed in Australia.[7] However, based on recommendations in the Therapeutic Guidelines, there are very few instances where it should be recommended as first-line therapy.[6]

Pharmacists should elicit from the patient their reason for requiring antibiotics. If the reason is that the patient believes they have an infection, then appropriate history taking and risk assessment are warranted.

Does the patient actually need antibiotics?

There are a number of risk assessment tools available to guide pharmacists in determining the likelihood of a bacterial infection, and whether antibiotics are warranted.

For example, the National Institute for Health and Care Excellence (NICE) in the UK have created a series of risk assessment tools for determining the necessity of antibiotics for various primary care conditions.[8] Here are just some of many examples:

- **Otitis media:** www.nice.org.uk/guidance/ng91/resources/visual-summary-pdf-4787282702
- **Sinusitis**: www.nice.org.uk/guidance/ng79/resources/visual-summary-pdf-4656316717
- **Sore throat:** www.nice.org.uk/guidance/ng84/resources/visual-summary-pdf-4723226606

While the choice of antibiotic, its dose, frequency, and/or duration may differ in the Australian context (and even across different regions within Australia), such risk assessment tools may be useful for pharmacists in determining whether antibiotics are indeed warranted, and if so, referral to a general practitioner for a confirmatory diagnosis.

How can pharmacists play a role in the wider adoption of the recommendation?

As custodians of the quality use of medicines, pharmacists are well positioned to become champions of antimicrobial stewardship. This means that we can ensure antibiotics are used only when warranted, and for the appropriate dose, frequency, and duration.

This also means that pharmacists have the opportunity to provide education to patients on the appropriate use of antibiotics, as well as ensure prescribers are appropriately prescribing antibiotics for patients.

Changes to current practice do not need to be significant. Every little conscious effort towards appropriate antibiotic usage counts.

Here are some ideas:

1. **Re-consider using the 'Continued until all taken' label sig.** Instead, ask about the duration and include the number of days it is to be taken. While it is important to take antibiotics regularly instead of 'prn', it is also important to determine the actual length of therapy – the Therapeutic Guidelines[6] is your friend here. For example, first-line treatment for an uncomplicated UTI in non-pregnant females is 3 days.[6] In this case, 'continued until all taken' would mean that the patient may be taking trimethoprim far longer than required.
2. **Be on the lookout for signs of inadequate patient response to therapy and refer promptly.** The sooner the patient receives appropriate therapy, the sooner their infection can be resolved.
3. **Clarify with the patient their reason for requesting a repeat antibiotic prescription.**

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FEATURE
COVER STORY

SAFE HANDS

BY **THEA COWIE**

Concerns over the overuse of antipsychotics in Residential Aged Care Facilities have reached a high tide – but so have efforts to address the issue by giving pharmacists a larger role to play.

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The hallmark of a civilised society is how it treats its most vulnerable people, and our elderly are often amongst our most physically, emotionally and financially vulnerable.'

That's the tone that Commissioner Richard Tracey set at the opening of the Royal Commission into Aged Care Quality and Safety in January.

Managing and minimising the use of physical and chemical restraint is a top priority of the Royal Commission and already the Federal Minister for Aged Care has announced draft changes to regulations governing their use.

Concern around antipsychotic drug use in residential aged care facilities (RACFs) is not new. In fact, red flags were raised at least two decades ago, says Dr Juanita Westbury, pharmacist and senior lecturer in dementia studies at the University of Tasmania's Wicking Dementia Research and Education Centre. 'I've been researching it for over a decade and you get these periods of intense focus on the area and then you don't hear very much for a period of time. So I hope that this time there will be some sustainable change,' says Dr Westbury.

The *Third Australian Atlas of Healthcare Variation*,[1] released in December, showed that antipsychotic prescriptions among older Australians remain a significant concern.

'For people aged 65 years and over, prescription rates of antipsychotic medicines decreased during the four years [between 2013–2014]; however, the volume of antipsychotic medicines supplied on any given day in the Australian community remained stable, indicating that there has been little change in the overall amount of use during the four years,' the report stated.

'The current use of antipsychotic medicines outside current guideline recommendations as a form of restrictive practice to manage behavioural and psychological symptoms of dementia (BPSD) in aged care homes is a matter of grave concern.'

The *Atlas* found that 25,788 prescriptions are dispensed per 100,000 people aged 65 years and over – down 6% from 27,396 in 2013–14.

However, the volume of antipsychotic medicines remained stable over the four-year period, with 11.54 defined daily doses of antipsychotic medicines per 1,000 people dispensed on any given day.

The University of Sydney's Head of School and Dean of Pharmacy, Professor Andrew McLachlan FPS, says the findings are disappointing.

'Despite a number of initiatives to try and increase awareness and reduce the use of antipsychotics and sedatives in aged care facilities, there hasn't been much change in the use of antipsychotic medicines,' says Professor McLachlan, who is also Program Director of the National Health and Medical Research Council's (NHMRC) Centre for Research Excellence in Medicines and Ageing.

'We haven't seen growth – that's an important conclusion. But we certainly haven't seen a substantial reduction. Perhaps it means that it'll take longer than just four years to start to see substantial reductions in the use of those medicines, or that we need to redouble our efforts with more effective interventions.'

Another recent Australian literature review focusing specifically on residents of RACFs shows studies have found that between 13% and 42% of RACF residents are prescribed an antipsychotic.[2]

Consequences

Research shows that antipsychotics offer only modest benefit for treating BPSD and are associated with significant harms, says Dr Westbury.

'Because of the adverse effects associated with these drugs, you should only be using them when there is a risk of harm and when non-drug strategies have been tried,' she says.

She points to research summarised in the 2016 Royal Australian New Zealand College of Psychiatry's (RANZCP) Professional Practice Guideline 10.[3]

'There have been numerous placebo-controlled trials and several meta-analyses examining the »

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efficacy of antipsychotic medications to treat BPSD. These studies show a small effect size of 0.13 to 0.20.[4] Notably, this effect size is smaller than some non-pharmacological approaches to treatment of BPSD,' the guidelines state.

'In general, antipsychotic medications are associated with increased risks of central nervous system adverse events, sedation, exacerbation of existing cognitive impairment and confusion, fractures, falls, urinary tract infections, deep venous thromboses, peripheral oedemas, gait disturbances, akathisia and Q-T prolongation.'

Additionally, the guidelines state that risperidone may be associated with a three-fold risk of cerebrovascular events,[5] and 'there have been a number of observed associations between mortality and the use of both conventional and atypical antipsychotics'.[6,7] Antipsychotic medicines are also associated with confusion, falls, pneumonia, hip fracture and stroke.[8,9,10]

Reducing use, improving care

There is no easy fix when it comes to reducing the use of antipsychotics and improving care in RACFs, admits Professor McLachlan. 'The challenge of the inappropriate use of a medicine isn't just about a doctor writing a prescription and a pharmacist dispensing it,' he says. 'It relates to the nature of the patient cohort that's coming into aged care facilities, the facilities themselves and what infrastructure they have, but most importantly what staffing profile they have.'

For pharmacists, however, there are a number of programs and tools that have been developed to help improve the situation.

The 2014–2016 pharmacist-led 'RedUSe' (Reducing Use of Sedatives) project reduced antipsychotic use in 150 RACFs in six states and the ACT by 13% and benzodiazepine use by 21%, without increasing pro re nata (prn) or sedating antidepressant psychotropic drug use.[11]

Lead author of the resultant *Medical Journal of Australia* paper, Dr Westbury, says that although funding for the project has ceased, pharmacists can continue to implement its main strategies in RACFs.

'Basically it uses quality use of medicines (QUM) improvement strategies and provides education,' she says.

'It starts off with a psychotropic medication audit and then that's presented to the staff in a very interactive training session – we really try to challenge the beliefs of the nursing staff that these medications are effective, talk about adverse effects and the evidence of only modest effectiveness.'

The project takes six months and includes an interdisciplinary case review of all residents taking antipsychotics and benzodiazepines by a pharmacist, nurse and GP at baseline and three months, then a final audit at six months. 'Pharmacists can really make a difference – we found that 40% of the residents taking antipsychotics at the beginning of the project either had a complete cessation, or a reduction in their psychotropic medication, by 6 months,' says Dr Westbury.

The Halting Antipsychotic use in Long Term care (HALT) Project is another interdisciplinary approach shown to help reduce antipsychotic use in RACFs.

The Sydney-based study in 23 RACFs involved the establishment of an antipsychotic deprescribing protocol. General practitioners, pharmacists and residential care nurses were then educated about non-pharmacological, person-centred BPSD prevention and management. Trained nurse 'champions' then passed on their knowledge to other nurses.

Results show that 95% of consenting RACF residents taking a regular antipsychotic at the start of the study had ceased antipsychotic use at the 12-month mark.[12] Importantly, there was no change in BPSD or adverse outcomes.

Reports

Report generation tools available through pharmacy software, such as Webstercare Medication Management Software (MMS), can be used to improve QUM in RACFs, says Webstercare founder and managing director Gerard Stevens FPS.

The Webstercare Medication Advisory Committee (MAC) report, for instance, can be generated to help raise awareness and drive change, Mr Stevens says.

'It actually shows the percentage of people who are on particular antipsychotic drugs at a facility. And showing this graph has a real impact when people look at it,' he says. 'In my experience the nurses, particularly the directors of nursing, are very sensitive to this report. They don't want to be singled out for inappropriate use of antipsychotics.'

Webstercare's anticholinergic report – the Drug Burden Index report – is another useful tool. »

'The role is different from that of an RMMR or QUM pharmacist in that I can gauge the needs of the facility on a day-to-day basis.'

– Richard Thorpe

'Just by running a report on all the people in a particular aged care facility you can identify those people who are potentially at risk, identify those people to be reviewed by their doctor, or reviewed by the consultant pharmacist who is doing medication reviews,' says Mr Stevens.

Webstercare has also collaborated with NPS MedicineWise to develop a reporting function within MMS that creates in-depth reports of the use of antipsychotic medicines in RACFs. This allows comparison of medicine use against published results and flags residents for Residential Medication Management Reviews (RMMRs).

'I would say to pharmacists, use the tools that are at your fingertips. The impact is really worthwhile,' he says.

Embedding pharmacists in RACF

While a number of programs and tools have been shown to help reduce the use of antipsychotics in RACFs, many suffer from lack of ongoing funding. Dr Westbury, for example, says that during the RedUSe project, 'we had pharmacists saying that they weren't funded adequately to visit RACFs and the current reimbursement for QUM is very low'.

Her preferred solution echoes that identified by PSA in its *Pharmacists in 2023* report[13]: embedding pharmacists within healthcare teams to improve decision making for the safe and appropriate use of medicines.

'If you've got a pharmacist in aged care who is trusted by the staff and doctors and knows the residents, surely that would enhance their results, rather than some

ON THE GROUND

Last year Richard Thorpe became the first pharmacist in Australia appointed to a full-time position in a RACF, in the ACT.

***AP*: What does your role involve?**

RT: I attend the morning handover and prioritise my workflow for the day based on the needs of the residents. I'll regularly attend morning medication rounds, which has been particularly effective when carers have residents who have been refusing doses consistently. Observing these interactions allows me to both 'coach' staff and provide feedback to the GP or enduring power of attorney (EPOA) if needed.

My work activities are divided into about eight different areas. GP and pharmacy liaison have taken priority early on, however in the months ahead I expect to provide input into policy and procedure. Staff training will also be prioritised. I also conduct formal RMMRs, attend case conferences, and co-ordinate and run training for medical assistants.

***AP*: What feedback have you received?**

RT: Residents, EPOAs and family members who have attended case conferences have provided feedback on my ability to encourage residents to make informed decisions around medicine use. The GPs have said that having a pharmacist present allows more informed discussions, particularly where deprescribing is concerned.

The Registered Nurses (RNs) and care staff have indicated they appreciate advice regarding the administration of medications – whether medications can be crushed safely, and if not, what alternatives are available; clarification of regimens when residents return from hospital; timely charting and supply of medications for new admissions. Residents are also getting used to seeing me each day. Some pull me aside seeking advice or reassurance, which allows me to become their advocate to the GP, RN or care staff if necessary.

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random person coming in and doing recommendations,' she says.

'Part of good quality care is inter-professional working, so having a pharmacist in an aged care facility would really assist that as well.'

Professor McLachlan would also like to see pharmacists embedded in RACFs providing antipsychotic stewardship.

'They would be mimicking that model of care that we know to be very effective in the antimicrobial and opioid spaces, and extending into an intervention for antipsychotic medicines and sedatives in aged care,' he says. 'Perhaps pharmacist-led, but involving other healthcare professionals – including nursing, occupational therapy, physicians and general practitioners. That's the type of strategy which would see sustained changes.'

***AP:* What do you hope to achieve in this role?**

RT: With my knowledge base and experience, I feel I'll be able to provide valuable input to encourage residents and their EPOAs to make high-quality decisions regarding medication management.

I will have an impact on policy and procedure and will be chairing the Medication Advisory Committee (MAC) meetings in 2019. I'll also be part of the Antibiotic Stewardship Committee and provide opinion to the Clinical Governance Committee.

While these 'management' type roles will help mould the DNA of the organisation, I also want to maintain my presence on the facility 'shop floor' to provide support to staff on a daily basis.

On the ground

When Richard Thorpe joined the team at Goodwin Aged Care Services in Canberra, he became the first pharmacist appointed to a full-time position in residential aged care in Australia (see breakout). But he's keen to see other pharmacists share that title before too long.

'Easy access to a pharmacist to provide advice on the safe use of antipsychotics in a timely fashion is key in helping to prevent the overuse of these medicines,' says Mr Thorpe. 'A pharmacist working in a RACF is well placed to provide education for facility staff, prescribers and residents' families, which may cover appropriate and inappropriate uses of antipsychotics in managing concerning behaviour such as wandering, inappropriate voiding, verbal aggression or screaming.'

And he stresses that an on-site pharmacist can offer a unique service.

'The role is different from that of an RMMR or QUM pharmacist in that I can gauge the needs of the facility on a day-to-day basis,' he says. 'If there is an acute issue where I am not rostered I still have access to all the relevant information. This allows me to give advice in real time, which benefits the resident.'

In the meantime, it's important to acknowledge the hard work that many pharmacists are already doing in this space, says Webstercare's Gerard Stevens.

'Pharmacists are providing an amazing service in aged care – they go to the MAC meetings, they'll do after-hours calls, they'll write reports and intervene in drug-related incidents like drug interactions,' he says.

'Pharmacists need to be patting themselves on the back a bit more.'

The PSA will be making a submission to the Royal Commission into Aged Care Quality and Safety and invites interested pharmacists to share their thoughts by the end of April to help inform its feedback. Email **agedcareRC@psa.org.au**

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Pharmaceutical Society of Australia

Proposal to embed pharmacists into aged care facilities

PSA strongly believes that we must stop the overuse of sedatives in our residential aged care homes and pharmacists must have a greater role in the residential aged care sector to utilise their unique medicines expertise to ensure the safe and optimal use of medicines for older Australians.

***PSA** Australia's peak body for pharmacists*

4,315

COMPLAINTS ABOUT RESIDENTIAL CARE

The Pharmaceutical Society of Australia (PSA), as the professional peak body representing the country's 30,000 pharmacists working in all sectors and locations, believes there is compelling evidence to support the greater role pharmacists can play in the aged care sector utilising their unique medicines expertise to ensure the safe and optimal use of medicines for older Australians.

Medication management issues are a frequent cause of non-compliance with the Aged Care Quality Agency Standards. Item 2.7 Medication Management regularly appears in the most frequent aged care standards not adhered to. In the Aged Care Complaints Commissioners Annual Report 2016-2017 there were 4,315 complaints about residential care, which accounted for 75 per cent of all complaints. The most common issues raised in complaints about residential aged care were about medication administration and management (706).

Following the success of the Goodwin Aged Care Services feasibility study, which saw the integration of a clinical pharmacist in a residential aged care facility, and the learnings from the operating model for the IRT group South Coast sites, the PSA considers there is a case to undertake a trial embedding pharmacists into aged care facilities throughout the country. Our proposal is to integrate and rigorously evaluate this program in 200 aged care sites across Australia.

Project IMPACT

Integrating and embedding pharmacists into aged care facilities trial (IMPACT).

This project aims to improve the use of medicines in aged care facilities by embedding a pharmacist in a residential aged care facility (RACF) and integrating their services into the clinical service team. An Aged Care Medication Needs Assessment would be conducted to ensure the role of the pharmacist is focused on the key areas of clinical need within the RACF. It is envisaged that the role would include the following activities:

- Clinical governance, in particular medication management process, policies and guidelines;
- Education and training for staff, residents and their families; and
- Medication review.

Aged care facilities could access funding under this trial to engage a pharmacist as employee or contractor for the duration of the trial. It is proposed that a broad range of facilities including large and small, rural, regional and metropolitan combined with for-profit and not-for-profit providers would be eligible to access the trial funding.

Background

We know that there are high levels of medicines use in the aged care setting, which is not surprising given the demographics of residents and prevalence of multimorbidity. Given the high level of frailty in the residential aged care population medicine doses are often modified, because of impaired hepatic and renal function. We know there are problems with medication management in this setting, including a distinct lack of integration between supply systems and clinical systems, medication charts (both paper and electronic), alteration of dose forms (crushing of tablets, or administering with additives e.g. jam, yoghurt and lack of information on the chart as to precautions in the administration), potentially inappropriate prescribing and polypharmacy.

A 2013 literature review prepared for the **Commission for Quality and Safety in Healthcare**, suggested up to 50% of residents could be receiving potentially inappropriate medications, such as sedatives and highly anticholinergic drugs.

Alarmingly, recent reports have suggested the use of psychotropic medications in aged care is very common. A report from **Dementia Australia** showed about half of all aged care residents, and up to 80% of residents with dementia, were receiving at least one psychotropic medication. This is despite evidence showing only about 20% of patients with behavioural and psychological symptoms of dementia will receive benefit from antipsychotics and that these medicines can be associated with significant adverse outcomes, including falls, cognitive impairment and increased risk of stroke and death.

The **Review of National Aged Care Quality Regulatory Processes** commissioned by the Minister for Aged Care Ken Wyatt, highlighted ongoing difficulties in the management of medicines within the aged care environment.

This review was commissioned in part as a response to problems at the **Oakden Older Persons Mental Health Service** in SA, which had significant failures of care that unfortunately the regulatory framework did not detect. One of the key recommendations from this review included:

> Polypharmacy and medication errors were frequently raised in our consultations. We recommend conducting resident medication management reviews on admission to a nursing home, after any hospitalisation, upon any worsening of medical condition or behaviour, or on any change in medication regime.

Of particular concern noted in the report was that:

> despite these issues, the number of claims for Residential Medication Management Reviews has decreased by approximately 18 per cent between 2008–09 and 2015–16

This was largely due to guidance issued as part of the RMMR funding under the 6th Community Pharmacy Agreement changing the frequency of review to 2-yearly from 1-yearly.

The current model where many RMMRs are not undertaken by local pharmacists provides a barrier to timely review. Embedded pharmacists are more likely to be able to obtain a Best Possible Medication History on admission to a facility through liaison with the patient, as well as sources including their former GP, community pharmacy, hospital admissions. Ongoing medication reconciliation across transitions of care is assessed and facilitated.

An embedded pharmacist has the opportunity to develop meaningful relationships with health professionals, both onsite and visiting, as well as residents and families. A collaborative relationship allowing discussion of Quality Use of Medicine (QUM) issues is more likely where contact is frequent and ongoing.

Counselling of older residents takes time and sometimes needs to be opportunistic rather than scheduled. At times, nonclinical members of staff can give useful insights into residents' activity levels, mood and dietary preferences. An embedded pharmacist has the ability to monitor changes in a resident's condition over time and to follow up outcomes of medicine changes. These relationships allow opportunities for daily insertion of QUM principles.

50%
OF RESIDENTS COULD BE RECEIVING POTENTIALLY INAPPROPRIATE MEDICATIONS

Project Aim

The project aim is to significantly improve medication safety in aged care facilities to achieve better health outcomes and quality of life for aged care residents. PSA's proposal to overcome these issues is to roll-out the integration and embedding of a pharmacist into eligible aged care facilities.

Aged care facilities that, in the accreditation process, have had challenges meeting the medication management standard would be eligible to join the roll-out and have access to a pharmacist for a 12-month period.

The role of the pharmacist would be predominantly in the following three areas:

Education and Training (30-50% of working time)

- Lead education and training processes related to quality use of medicines within the aged care facility.
- Delivering education sessions (including new evidence, guidelines and therapies) to doctors, nurses/NP, aged care facility staff, residents, and Next of Kin.
- Responding to medicine information queries including; questions relating to medication formulas, medication availability and specific medication concerns from GPs (e.g. switching anticoagulants, antidepressants, opioid equivalence).

Clinical Governance (30-50% of working time)

- Develop and lead clinical governance activities centred around the quality use of medicines.
- Lead programs aimed at reducing the use of psychotropics, benzodiazepines.
- Collaboratively lead and develop systems, processes and communication strategies for the facility that will reduce the risk of medicine misadventure through all transitions of care and enhance the quality use of medicines.
- Regular medication chart review with provision of relevant administration advice included on the chart ensures optimisation of QUM. Embedded pharmacist can also ensure that chart includes indication, route, and site.
- Ensuring uptake of My Health Record and Shared Medications Summary.
- Act as a point of contact for local community pharmacies, general practitioners and hospitals to ensure collaboration.
- Stewardship – opioids, antibiotics, psychotropics.
- Analyse the safe use of medicines in pain management.
- Promote and educate residents on the importance of vaccinations e.g. flu/pneumovax/ shingles.
- Assess and monitor incident reporting through Medication Advisory Committee.
- Ongoing data capture for validating large scale implementation.

Patient Level Activities (20-40% of working time)

- Build strong and enduring collaborative relationships with community pharmacy and other healthcare providers – ensuring changes to medicines result in an updated Shared Medications Summary Identifying, resolving, preventing, and monitoring medication use and safety problems especially looking at impact of frailty on medicine use and need to modify doses with respect to renal and hepatic function etc.
- Reducing polypharmacy and optimising medication regimens using evidence-based guidelines, recommending and initiating cost-effective therapies where appropriate.
- Review of medication timing and use of PRN (as required) medicines.

It is proposed that implementation of the trial would lead to improvements in residents' care coordination, health outcomes and quality medication use. This will reduce medication misadventure, reduce unplanned hospitalisation and significantly improve the quality of care received and experienced by residents while improving the overall understanding and competency of allied health and aged care staff with medication management.

It is proposed that the trial would be firstly co-designed with consumers, aged care providers, general practitioners, community pharmacy, hospitals and other key stakeholders to ensure it is patient-centred, delivers the right care to the right person at the right time. Secondly, the trial would be designed and undertaken by appropriate researchers to ensure reliable evidence is available and to be fully evaluated for clinical and cost-effectiveness through Health Technology Assessment.

The primary principle is the need for flexibility in the trial, to allow the services to be delivered in a way that is suitable to the specific aged care facility. An Aged Care Medications Needs Assessment would be completed by the appointed pharmacist for each aged care facility to determine specific needs.

Attachment F: *PSA Medicine Safety: Take Care report published January 2019*

MEDICINE SAFETY: TAKE CARE

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- 50% of this harm is preventable

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- 3 in 5 hospital discharge summaries where pharmacists are not involved in their preparation have at least one medication error
- For 1 in 5 people at high risk of readmission, timely provision of the discharge summary did not occur
- Only 1 in 5 changes made to the medication regimen during hospital admission were explained in the discharge summary
- Over 90% of patients have at least one medication-related problem post-discharge from hospital

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- 98% of residents have at least one medication-related problem
- Over half are exposed to at least one potentially inappropriate medicine

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- 1 in 5 people are suffering an adverse medication reaction at the time they receive a Home Medicines Review
- 1.2 million Australians have experienced an adverse medication event in the last 6 months
- Almost 1 in 4 older people prescribed medicines cleared by the kidneys are prescribed an excessive dose

MEDICATION SAFETY IN AUSTRALIA

Use of medications is the most common intervention we make in health care, which means that problems with medicine use are also common.

Problems with medication can occur at any time during their use, including when the decision is made to use a medicine, during dispensing, and while using the medicine. In this report we detail the extent of harms in Australia as a result of medicine use. The main types of harm include hospital admissions due to medicines and adverse events. We estimate the number of hospital admissions due to medicines, the number of emergency department attendances due to medicines, and present the extent of adverse events in the community setting. We also identify the extent of medication-related problems after discharge from hospital and for residents in aged care. We conclude by highlighting some of the opportunities where pharmacists can play a role in minimising these harms.

MEDICATION-RELATED **HOSPITAL ADMISSIONS**

250,000 hospital admissions annually are a result of medication-related problems. The annual costs for Australia are $1.4 billion

An additional 400,000 presentations to emergency departments are likely to be due to medication-related problems

50% of this harm is preventable

There have now been 16 separate Australian studies since 1988 providing estimates of the extent of medication-related hospital admissions (See Figure 1, Appendix Table 1).

The most recent studies were published in 2014[1] and 2017.[2] One study, conducted on a randomly selected set of 400 patients presenting at the emergency department, estimated that 15% of admissions were associated with an adverse medication event, of which 54% were definitely avoidable.[1] The rate is more than double previous studies assessing medication-related admissions via the emergency departments, which were published in 19933 and 1995.[4] This may indicate a greater rate of problems as people use more medicines now than in the earlier 1990s, however, the study did not report whether the adverse events were the cause of admission or an associated factor with admission.

The second study was conducted amongst a convenience sample of patients aged 65 years and over with unplanned admissions to medical wards.[2] Of the 1,008 admissions reviewed, 19% were considered to have an adverse drug reaction as a cause of or contributor to admission. High rates of preventability were reported, with 87% considered preventable. Of the people hospitalised with adverse reactions, many were suffering from multiple adverse reactions, with 32.5% having two adverse reactions and 15% having three or more adverse reactions.

> For those admitted to hospital due to adverse drug reactions, 50% had a single reaction, 30% had two adverse reactions, and 15% had three or more adverse reactions. In 70% of cases, the adverse reactions were due to multiple medicine use

In 70% of cases the adverse reactions were due to multiple medicine use.[2] Patients admitted due to adverse reactions were at high risk of readmission due to an adverse reaction, with a follow-up study showing 13% of patients were readmitted with a hospital admission due to an adverse reaction in the 12 months following their first admission due to an adverse reaction.[5]

FIGURE 1: Results of previous studies assessing medication-related hospital admissions in Australia

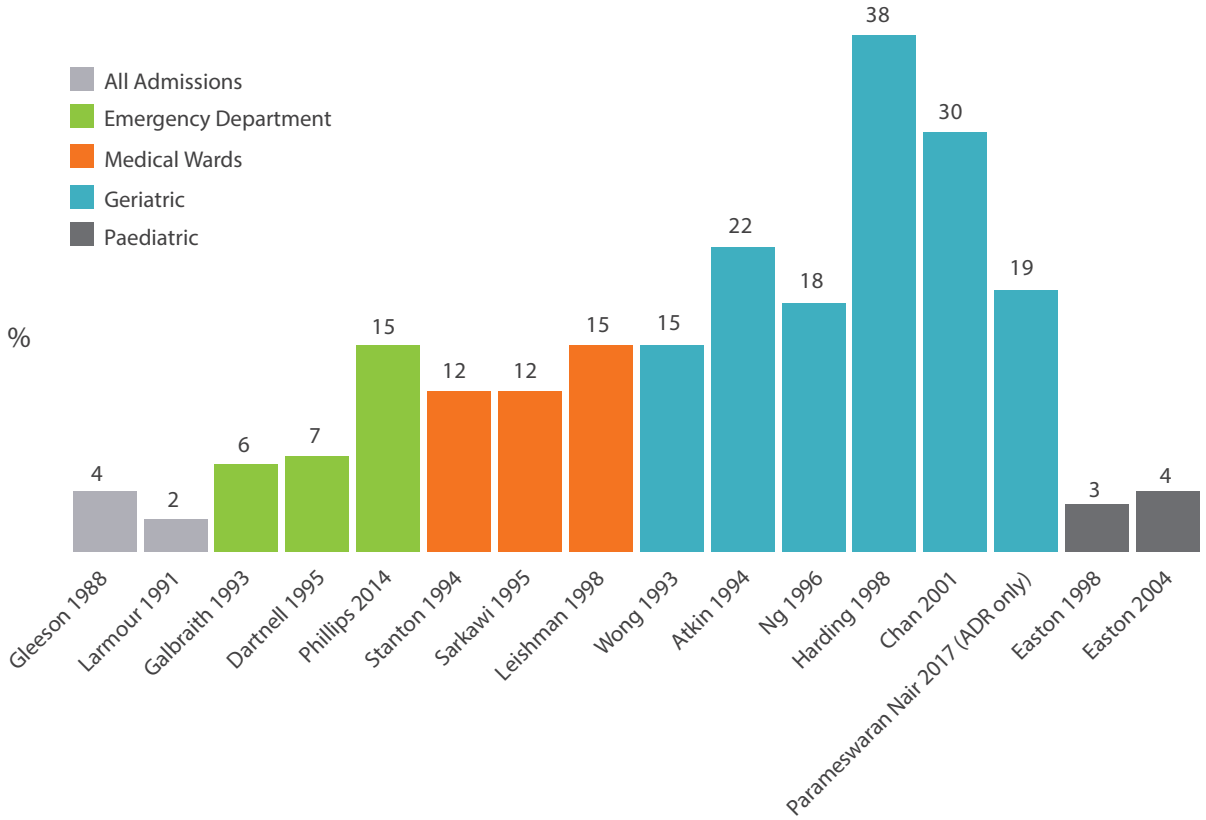


TABLE 1: Estimates of medication-related hospital admissions and emergency department attendances

	Median estimate from Australian medication-related hospital admission studies	Public hospital admissions	Private hospital admissions	Total
All admissions (n=2) [11,12]	2.5%	164,675	110,650	275,325
Emergency admissions (n=3) [1,4,13]	7%	196,021	16,728	212,749
Emergency admissions (n=3) based on emergency department presentations	7%	169,260	11,675	180,935
Medical admissions (n=3) [14,15,16]	12%	323,321	121,316	444,637
Emergency admissions in the elderly (n=6) [2,17–20]	20.5%	227,470	20,693	248,163
Emergency attendances (not admitted) (n=1) [3]	8.6%	462,852	3,192	466,044

* (See Table A:3 for denominator derivations)

Two other studies have reported hospital admissions associated with adverse medicine reactions based on the reports of adverse events coded in the hospital record,[6,7] with one showing 1.8% of hospital admissions had an adverse reaction due to medicines coded, which is similar to previous estimates using the same method.[8] This coding includes both adverse events that caused admission and adverse events that occurred during admission. Neither study reported the results stratified by adverse events that contributed to the admission and those that occurred during admission.[6,7]

To put these results in context it should be noted that there were 11 million hospital admissions in Australia in 2016–2017; of which 4.6 million occurred in patients aged 65 years and over.[9] Assuming 2.5% of all hospital admissions are medication-related and the average cost per hospital stay is $5,500,[10] this amounts to:

- 250,000 medication-related hospitalisations per annum (Table 1); with
- total costs of $1.375 billion.

Among people 65 years and over with medical or surgical admissions, 55% were on a potentially inappropriate medicine and 6% of all admissions were due to the potentially inappropriate medicine

Other Australian studies, while not enabling estimates of the extent of medication-related hospital admissions, also highlight problems with medicines at the time of hospital admission. One study assessing potentially preventable medication-related hospital admissions used an indicator set that had been validated by Australian clinicians who had indicated that the medication-related problems were recognisable, had foreseeable adverse outcomes, and the causes of the adverse outcomes were identifiable and controllable.[21] The study found that in one quarter of cases there was suboptimal care prior to hospital admission among potentially preventable medication-related hospital admissions.[22]

The use of potentially inappropriate medicines as a contributor to hospital admission has also been identified in a number of Australian studies. One study showed that among people 65 years and over with medical or surgical admissions, 55% were on a potentially inappropriate medicine and 6% of all admissions were due to the potentially inappropriate medicine. Potentially inappropriate medicines are not the only type of medication-related problem that can cause hospital admission, so this study underestimates the overall rate of medication-related hospital admissions in this population.[23]

A similar study in patients aged 65 years and over who were admitted to hospital for at least four days also assessed the use of potential inappropriate medicines by the same criteria.[24] It also assessed the prevalence of potential prescribing omissions. It found 40% of people were on potentially inappropriate medicines and 63% had potential prescribing omissions at the time of admission. The study did not report the proportion of people who suffered an adverse event as a result of the potentially inappropriate medicines; however, it did find that 33% of potential inappropriate medicines were associated with a possible adverse clinical outcome.[24] A Western Australian study using linked administrative data, and using a slightly different set of potentially inappropriate medicines, found that 15% of all unplanned hospital admissions in persons taking potentially inappropriate medicines was due to the potentially inappropriate medicines.[25,26]

> Among patients with poor renal function, at the time of their admission 16% were on a contraindicated medicine and 21% were on an inappropriate dose

One further study provides evidence that dosing of medicine in patients with poor renal function is also a contributor to hospital admissions in Australia. Among patients aged 40 years and over with either hypertension and/or diabetes mellitus and poor renal function (a creatinine clearance of 60ml/min or less), 32% were on a medicine that required renal adjustment or was potentially nephrotoxic at the time of admission, 16% were on a contraindicated medicine and 21% were inappropriately dosed.[27]

MEDICATION-RELATED **PROBLEMS AFTER HOSPITAL DISCHARGE**

- 3 in 5 hospital discharge summaries where pharmacists are not involved in their preparation have at least one medication error
- Over 90% of patients have at least one medication-related problem post-discharge from hospital

Changes to medication during hospital stay are common, with some studies showing up to 90% of people may experience a change to their medicines.[28,29] Without medication reconciliation at discharge, there is a high chance that there will be errors on the discharge medication list.

A 2013 study conducted in a general practice setting examined the discharge summaries from 49 admissions for 38 patients.[30] Fifty-seven percent of discharge summaries were typed; 13% were difficult to read due to illegible handwriting or poor quality due to faxing or scanning. Complete lists of discharge medication were included in only 24% of the summaries received; 44% of the summaries contained no medication details. Only 21% included complete copies of radiology or pathology tests. These findings suggested that GPs experienced significant problems with missing medication information in the handover process.

Another study conducted in 2010 in a 900-bed metropolitan teaching hospital in Brisbane assessed the completeness and timeliness of the discharge summaries for a consecutive sample of medical inpatients aged 50 years and older who had also had a previous hospitalisation in the last six months.[31] A computer-generated printed discharge summary was used. Timely discharge summary completion was documented for 169 (80.9%) of the 209 discharges and discharge medication reconciliation by a pharmacist occurred for 169 (80.9%) of the discharges. Thus, for 1 in 5 people at high risk of readmission, timely provision of the discharge summary did not occur.

> For 1 in 5 people at high risk of readmission, timely provision of the discharge summary did not occur

A study conducted in a 350-bed teaching hospital in Sydney compared paper-based discharge summaries used prior to 2012 with those produced using a new 'medical (electronic) discharge summary and discharge medications protocol'.[32] The study provided insight into the extent of medication-related changes occurring in hospital that are explained in the discharge summary.[32]

> On average, only 1 in 5 changes made to the medication regimen during hospital admission were explained in the discharge summary

A retrospective audit of discharge summaries from the general hospital population included 162 paper and 177 electronic discharge summaries. There were 1,236 medication changes identified that had occurred during hospital stay for patients with paper discharge summaries and 1,237 for patients with electronic discharge summaries; 80% of the changes were addition or discontinuation of medicines. Explanations for the medication changes in the discharge summary was limited; only 37% of additions and 28% of dose changes were explained when electronic summaries were used, with even less explanations found in the paper summaries.

Further, less than 15% of medication discontinuations or frequency changes were explained when either electronic or paper discharge summaries were used.

This study also assesses the completeness of the medication orders with regards to the completeness of the frequency, route and dose fields. Of the 1,352 medication orders on paper summaries, 7.3% had an incomplete frequency field, 3.1% had an incomplete route field and 1.4% had an incomplete dose field, while of the 1,771 medication orders in electronic discharge summaries assessed, 0.1% had an incomplete dose field, 6.5% had an incomplete frequency field and 0.4% had an incomplete route field.

A randomised controlled trial conducted in a major metropolitan referral hospital in Melbourne provides data on the prevalence of medication errors in hospital electronic discharge summaries.[33] Patients received normal care (control group) with discharge summaries completed by medical officers or discharge summaries with medication management plans completed by a pharmacist (intervention group). Of the 431 control group patients who received standard medical discharge summaries during the study period, 265 (61.5%) received summaries in which at least one medication error was identified. Of the 401 patients in the intervention group, 60 patients (15%) who received discharge summaries completed by pharmacists had a summary that included at least one error, which was significantly lower than the control group. For the control group discharge summaries with at least one error, there were 36 (13.6%) that were judged to have an error of high severity and 12 (4.5%) had errors of extreme severity. This was lower in the intervention group with 5 (8%) judged to have an error of high severity and 1 (2%) found to have an error of extreme severity.

> Of the patients who received standard medical discharge summaries, 61.5% received summaries with at least one medication error.

One further study, while not providing estimates of the extent of the problem, does highlight the potential problems due to medicines post-discharge with regards to risk of falls.[34] The study was undertaken in a population admitted to hospital with a fall and found that among individuals discharged on medicines that increase falls risk there was a 70% increased chance of having a subsequent fall within 2 months of discharge.

One study provided some insight into people's perspectives of medication-related problems after discharge from hospital.[35] People aged 50 years and above taking five or more prescription medicines who had been recently admitted to hospital with a minimum stay of 24 hours were included in the survey. Of the 506 participants from across Australia, 174 (34.4%) reported at least one medication-related problem. Of those reporting medication-related problems, 83 (47.7%) reported unwanted effects from medicines, 54 (31.0%) reported being given different medicines after leaving hospital, 48 (27.6%) experienced confusion about their medicines and 26 (14.9%) reported being unaware of changes to their medicines.

> Research showed 93% of patients discharged from a cardiology unit had at least one medication-related problem

The extent of medication-related problems was reported in a randomised controlled trial evaluating the effectiveness of a pharmacist discharge service.[36] Of the 183 patients included in the trial, 92 patients received the intervention which included medication counselling, in-depth interview and medication review at the time of hospital discharge. The majority of patients (96%) had medication-related problems with an average of 8.5 causes of medication-related problems per patient. The most commonly identified cause of medication-related problems were indication not treated/missing therapy (12%), precaution needed with use of the medicine (11%), medicine not the most safe/effective treatment (8%) and dose too high (7%). The frequency of patients with medication-related problems in the immediate post discharge time period found in this study is similar to previous Australian research that showed 93% of patients discharged from a cardiology unit had at least one medication-related problem post-discharge.[37]

Two studies provide information about the prevalence of use of potentially inappropriate medications for older people following discharge from hospital. A prospective observational cohort study of older people with high-care needs discharged from hospital to a community-based Transition Care Program was conducted at six sites in Queensland and South Australia in 2009-2010.[38] Of 347 patients included, 41 (11.8%) were taking

at least one potentially inappropriate medication following discharge. Potentially inappropriate medicines were defined as the subset from the Beers Criteria where the recommendation to avoid use was strong, where the quality of the evidence was classified as moderate or high, or where exposure to the medicines was above the recommended maximum daily dose.

A retrospective cohort study of medication regimens at discharge among patients aged 65 years and older who were admitted to the general medical units was conducted to examine medication regimen complexity and potentially inappropriate medications.[39] Of the 100 patients included, 42% were prescribed at least one potentially inappropriate medication at discharge, as defined by Beers Criteria. Of 42 patients having at least one potentially inappropriate medication, only five (12%) had a separation summary that addressed the issues related to the potentially inappropriate medications.

MEDICATION-RELATED **PROBLEMS WITHIN RESIDENTIAL AGED CARE**

Over 90% of residents in aged-care facilities have at least one medication-related problem

As many as 80% are prescribed potentially inappropriate medicines

In the previous report of medication safety in Australia[40] it was reported that 96% of residents in aged-care facilities had at least one medication-related problem, with an average of three medication-related problems per resident.[41]

A 2014 study retrospectively assessed the medication-related problems identified by pharmacists in residential medication management reviews (RMMR) for 847 aged-care residents, between August 2011 and December 2012.[42] Overall, 98% of the residents had at least one medication-related problem identified by the pharmacist during the RMMR, with an average of 3.2 problems per person. Harm associated with the medicine-related problems and preventability was not assessed in the study. The study assessed the prevalence of inappropriate prescribing of renally cleared medicines in residents with chronic kidney disease (estimated glomerular filtration rate eGFR of 60 ml/min or less).[42] The eGFR was available for 323 of the 847 aged residents who had an RMMR, and 172 of them had chronic kidney disease. Sixteen percent of the residents with chronic kidney disease (n=28) were prescribed an inappropriate dose of a renally cleared medicine for their level of renal function. The percentage is likely an underestimate of the problem because eGFR may be overestimated in older people with low body mass index.

Another study assessed the prevalence of use of potentially inappropriate medicines using the 2015 Beers criteria, among a cohort of 533 aged care residents, most of whom had dementia or cognitive impairment.[43] Based on medicine use

in 2015, 81% of residents were exposed to at least one potentially inappropriate medicine. The most common potentially inappropriate medicines dispensed were long-term (>8 weeks) proton pump inhibitors (42% of residents), benzodiazepines (38%) and antipsychotics (31%). Harm associated with potentially inappropriate medicine use was not assessed in the study. Prior reviews of medication safety have reported the prevalence of potentially inappropriate medicine use in the aged care population at between 40 and 50%.[40] The 2015 Beers criteria for potentially inappropriate medicine use included additional medicines as potentially inappropriate in the elderly, which may explain some of this difference.

The use of potentially inappropriate medicines in residents of aged-care facilities has been shown to increase their risk of hospitalisation. A Western Australian study assessed the risk of unplanned hospital admissions and the use of potentially inappropriate medicines, as defined by the 2003 Beers criteria, among residents of aged care.[44] Between 1993 and 2005, there were 20,525 unplanned hospital admissions amongst high-care aged-care residents. Fifty three percent of people in the study who received high-care services in aged-care facilities were taking a Beers criteria medicine at the time of their unplanned admission. Overall, 17% of the unplanned admissions were attributed to the potentially inappropriate medicine.

> 17% of unplanned hospital admissions in persons living in aged-care facilities who are taking potentially inappropriate medicines are due to the inappropriate medicine

DOSE ADMINISTRATION AIDS

Most aged-care facilities use dose administration aids (DAAs) to administer medicines to residents and since the last medication safety report,[40] there have been two new studies that assessed the prevalence of packing errors in DAAs. Both studies audited the accuracy and suitability of medicines packed into blister pack or sachet style DAAs for aged-care facility residents; the first study provided baseline information on the prevalence of packing errors and the second study provided follow-up information on the prevalence of packing errors after a quality improvement intervention to reduce packing errors.

The baseline study found issues with the packing of medicines in more than 1 in 10 DAAs.[45] Between November 2010 and May 2011 a convenience sample of 3,959 DAAs for 1,757 residents in 49 nursing homes were audited by research pharmacists. Overall, the audit identified 684 incidents in 457 DAAs for 416 residents. Twelve percent of the DAAs audited (457/3,959) had one or more incidents identified. The most common type of incident was unsuitable re-packing of a medicine into the DAA, accounting for half of the 684 incidents identified. The incident rate was similar for the different types of DAA packing. Of the 2,920 blister pack DAAs that were audited, 306 (11%) had one or more incidents identified. Of the 1,039 sachet DAAs audited, 151 (15%) had one or more incident identified.

The potential health consequences of these packing incidents were assessed in the follow-up study, where the researchers also conducted an intervention to reduce DAA incidents and re-audited DAAs after the intervention to determine whether incidents had reduced.[46] Forty-five of the 49 aged-care facilities involved in the first audit were included in a follow-up audit, which was conducted between September 2012 and January 2013 and included 2,389 DAAs for 983 residents. The follow-up audit identified 770 incidents in 502 DAAs for 407 residents. Despite the intervention to reduce DAA incidents, the overall prevalence of packing incidents increased to 21% in the follow-up audit. The proportion of DAAs with an incident that was considered likely to have major or catastrophic consequences was 4%.

MEDICATION-RELATED **PROBLEMS IN THE COMMUNITY**

1 in 5 people are likely to be suffering an adverse medication reaction at the time they receive a Home Medicines Review

On average, four medication-related problems are detected for each person who has a Home Medicines Review

There are now 11 Australian studies that have published analyses of the extent of medication-related problems among persons living in the community who have received Home Medicines Review services (Figure 2).[37,47–57]

These studies consistently show that at the time a person receives a Home Medicines Review they are experiencing four medication-related problems, the majority of which are resolvable. The majority of studies have reported the type of medication-related problem as a proportion of all problems rather than as a proportion of the people, however, three studies have reported the percent of people experiencing an adverse drug reaction at the time of the review, with one undertaken in the community finding 19% were experiencing an adverse reaction,[52] one among persons living in rural areas finding 21% were experiencing an adverse reaction[47] and the other among persons attending a memory clinic or aged-care clinic reporting 26% were suffering an adverse medication reaction.[58]

One further study highlighted the problems related to medicines that require adjustment or should be used with caution in persons with poor renal function.[48] The study audited records of medication reviews among older persons living in the community or aged care and found there was evidence of inappropriate prescribing in 28% of people who were prescribed medicines that are cleared by the kidneys. Of these, 81% were prescribed an excessive dose, while 19% were prescribed a contraindicated therapy.[48]

Four prior surveys (2003–2012, Figure 3) conducted by the Bettering Evaluation And Care of Health (BEACH) Program found that between 8.5 and 11% of people seeing a general practitioner (GP) reported experiencing an adverse medication event in the previous 6 months.[40,59]

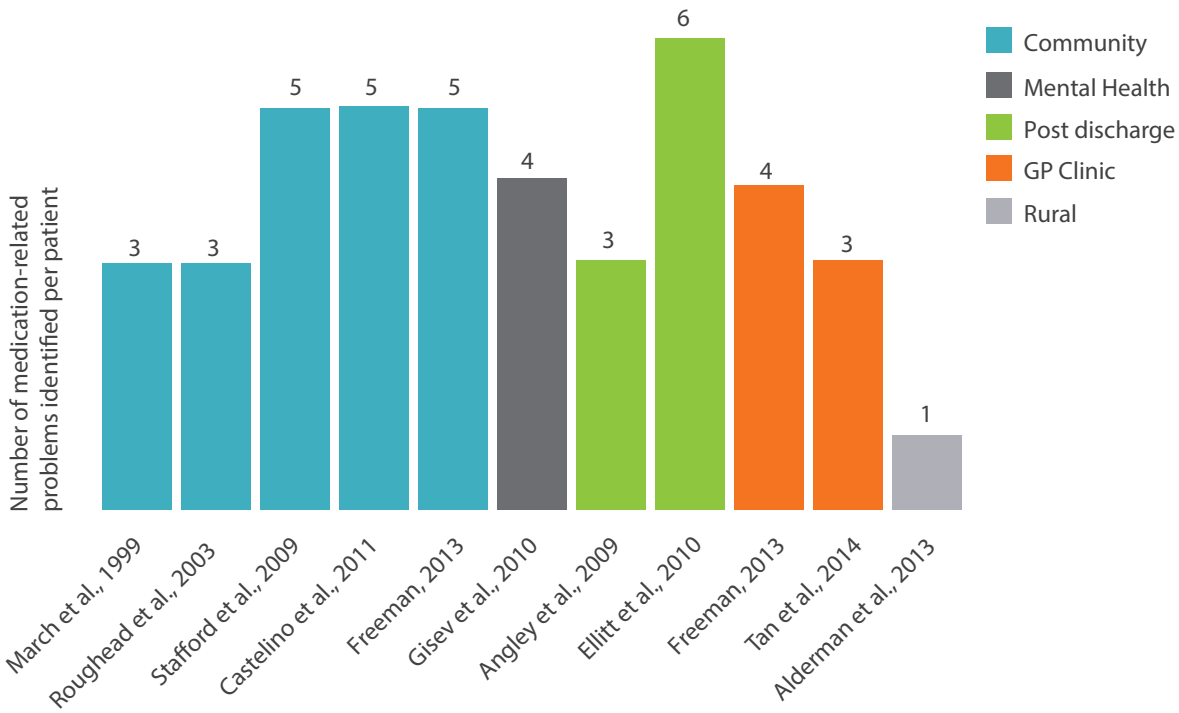
Two recent BEACH surveys (2014–15 and 2015–16) repeated data collection on this topic. In the 2014–15 survey, data from 390 general practitioners and 11,477 patients were included. Of the 7,426 patients taking at least one continual medication, 11% reported they had experienced an adverse event due to medicine use in the prior 6 months. In all, the doctors classified 9.3% as severe adverse events, while 5.9% resulted in hospital admission, and 4.3% were treated at an emergency department without hospitalisation.[60] In the following year (2015–2016), data were available from 363 general practitioners and 10,667 patients. Of the 7,253 patients taking at least one continual medication, 11% of patients reported they had experienced an adverse event due to medicine use in the prior six months. In total, 6.8% were classified by the doctors as severe adverse events, 5% reported a hospital admission as a consequence of the adverse medication event, and 2.3% were treated at an emergency department without hospitalisation.[61]

> Almost 1 in 4 older people prescribed medicines cleared by the kidneys are prescribed an excessive dose

When taking into account results of the more recent surveys (2011–2016), the percentage of people attending general practice who had experienced an adverse medication event in the previous six months remained consistent at 11% (Figure 3). The surveys have consistently shown that 5% of the adverse events required hospitalisation (Figure 3).

There seems to be no data available assessing the frequency in which patients present to community pharmacists with medication-related problems.

FIGURE 2: Number of medication-related problems per patient identified in Home Medicines Review



Two small Australian studies reported similar levels of adverse medicine events in general practice.[62,63] One study assessed the integration of pharmacists in 15 general practice sites in Western Sydney.[62] Of the 493 patient consultations performed by the pharmacist over 6 months, 11% of patients experienced an adverse medication event. In addition, almost all patients (94%) had at least one medication-related problem, with an average of 2.3 medication-related problems per person. The second study trialled use of a global trigger tool to screen medical records for potential adverse events within 5 general practices in South Australia.[63] The study included patients aged 75 years or older who had attended the practice three or more times within 6 months. Among the 273 records reviewed, 6% of patients experienced adverse medication events. The rate of adverse medication events in this study is likely underestimated because patient records were only reviewed if there was a 'positive' trigger based on a list of 10 triggers on the global trigger tool.

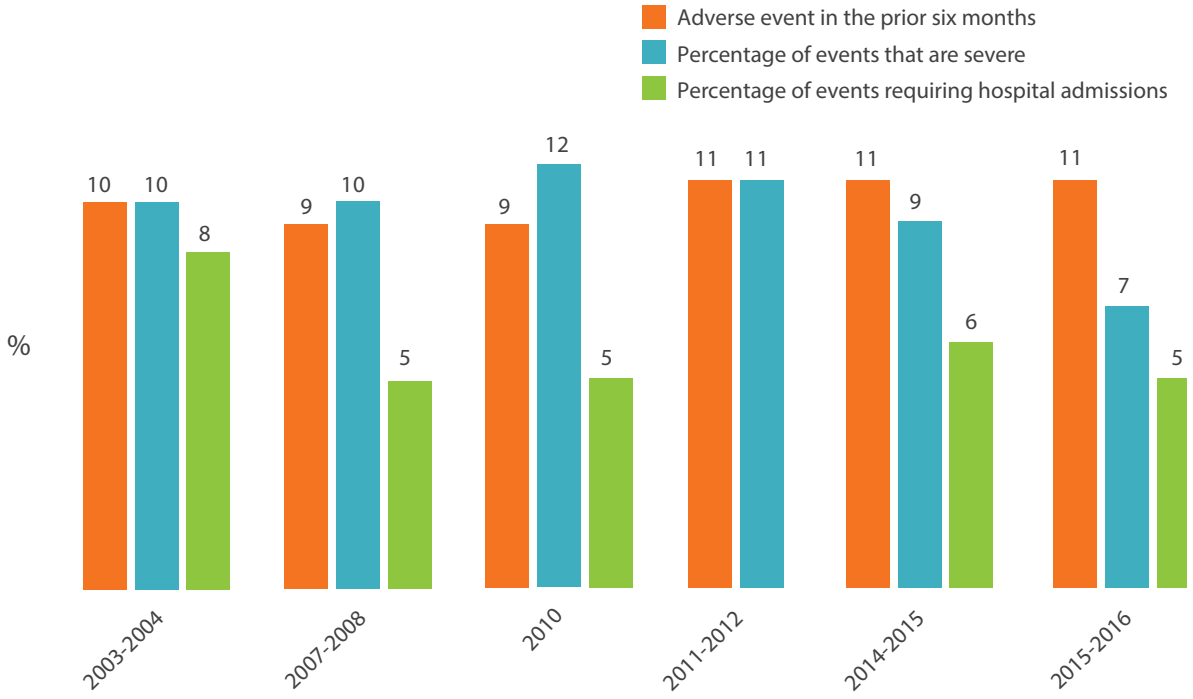
1.2 million Australians have experienced an adverse medication event in the previous six months

4 in 10 older Australians living in the community are prescribed at least one potentially inappropriate medicine

To put these results in context, 16 million patients saw a GP in 2016–17.[64] Two-thirds of patients visiting their GPs take at least one continual medication and 11% experienced adverse medication events in the past 6 months. This equates to almost 1.2 million Australians experiencing an adverse medication event in the past 6 months.

Use of potentially inappropriate medicines is also common in the community; three previous studies reported up to 50% of older people in the community are prescribed potentially inappropriate medicines.[65–67] A more recently published study assessed use of potentially inappropriate medicines using administrative claims data of 251,305 Western Australians aged 65 years or older.[68] Over the 13-year study period (1993–2005), 75% of people were on at least one potentially inappropriate medicine (defined using the Beers Criteria); with an average of two different potentially inappropriate medicines per person. The annual prevalence of potentially inappropriate medicine at the study end (2005) was 40%.

FIGURE 3: Percentage of people experiencing adverse medication event in the prior six months, percentage considered severe and percentage requiring hospital admissions



ROLE OF **PHARMACISTS**

Pharmacists have significant potential to reduce the number of medication-related hospital admissions and adverse medication events in Australia.

National implementation of the My Health Record means clinical biomarkers including renal function, liver function, electrolytes and INR results will be available to pharmacy practice. The Australian Health Survey showed 11% of Australians 65 to 74 years and 30% of those 75 years and over had abnormal renal function (Table 2),[69,70] while one Australian study auditing medication review notes found that in one-quarter of cases people on medicines cleared by the kidney received excessive doses.[48] This does lead to harm, with the Australian study of adverse reactions causing hospital admission showing that renal disorders were a contributor to 44% of the hospital admissions due to adverse reactions.[2] Use of My Health Record will enable pharmacists to proactively monitor dosages according to renal function, potentially reducing medication-related hospital admissions.

There is also potential to significantly reduce the proportion of admissions that are due to adverse reactions through proactive monitoring. The 2017 Tasmanian study showed 19% of unplanned admissions in the elderly were due to adverse reactions, and that in 56% of cases this occurred in a patient with a previous history of an ADR, and in just under 50% of cases, the cause was due to multiple medicines.[2] Access to the complete medication history, which My Health Record will enable, will provide pharmacists with the opportunity to proactively intervene to both document and reduce the adverse reactions, with improved documentation leading to less use of contraindicated therapy and the availability of the complete medication history enabling better detection of multi-medicine interactions.

TABLE 2: Proportion of Australians with abnormal kidney and liver biomarkers[69,70]

	25–34 years	35–44 years	45–54 years	55–64 years	65–74 years	75 years and over
Kidney disease biomarkers						
eGFR Abnormal (<60 mL/min/ 1.73 m^2)	0	0	0	1	11	30
Presence of albuminuria (Albumin Creatinine Ratio (ACR))	5	5	6	7	13	23
Liver disease biomarkers						
Abnormal Alanine aminotransferase (ALT)	12	13	14	12	8	2
Abnormal Gamma glutamyl transferase (GGT)	10	11	13	21	17	16

The frequency of medication-related problems at discharge and post discharge highlights the need for medication reconciliation and medication review in the immediate post-discharge phase. The Melbourne study showed that pharmacists completing medication management plans significantly reduced medication errors in the hospital discharge summaries.[33] It is worth noting that pharmacists are the first health professional a patient sees after leaving hospital (within 5 to 7 days, compared to within 7 to 21 days for GPs).[71] The availability of discharge summaries within My Health Record will provide the opportunity for pharmacists to proactively prevent and resolve medication-related problems post-discharge with medication reconciliation and review.

There is also the need to integrate pharmacists into aged-care facilities given the high prevalence of medication-related problems that occur in this setting. While no Australian studies reported the rates of adverse medication events in aged care, an international study suggests that the rate of adverse medication events in aged care is between 7 and 28 adverse events per 100 resident months.[72] Pharmacists can also play an important role in improving care for aged-care residents during transitions of care. Eleven percent of older people discharged from hospital are discharged to aged care.[73] Discharge summaries and pathology reports (e.g. renal function) will be available on My Health Record and the presence of pharmacists within aged-care facilities will ensure timely medication reconciliation and review.

Within the community as many as 1.2 million Australians experience an adverse medicine event. There is significant potential for pharmacists to assist in identifying and reducing the number of people living with adverse medication events via proactive monitoring for adverse events after a person first starts a new medicine and at the time a person presents for their first repeat prescription after starting a new medicine. My Health Record will provide the opportunity to improve recording of allergies and adverse medication events, and allow access to clinical biomarkers such as renal function, which will facilitate appropriate dosing and thus prevention of adverse events.

> Proactive engagement of pharmacists has the potential to significantly reduce the number of adverse medication events in Australia

Medication-related problems remain a serious health issue for Australia. Proactive engagement of pharmacists has the potential to significantly reduce the number of medication-related hospital admissions and adverse medication events in Australia due to their place in the healthcare system, the frequency with which they have patient contact, developments in health infrastructure, including My Health Record, and the availability of digital tools to support medication management.

SEARCH **STRATEGY**

Evidence from 2013 to present (September 2018) for Australian data on medication safety was identified from the following databases:

Medline (including Pubmed), Embase, Ovid Emcare and Joanna Briggs Institute (JBI) Database. Criteria for inclusion of studies are that the studies address adverse drug events; adverse drug reactions or medication incidents as a result of the therapeutic prescribing, dispensing and or administration of medication. The literature was restricted to studies in the Australian healthcare setting.

SEARCH RESULTS

The literature search of the electronic database identified 440 (Medline), 2,051 (Embase), 429 (Ovid Emcare) and 150 (Joanna Briggs Institute) papers. All titles and abstracts were screened by one author; full text articles were screened by all authors.

SEARCH TERMS

MEDLINE

Database: Ovid MEDLINE(R) ALL <1946 to October 1, 2018>

Search Strategy:

1 Medication Reconciliation/ or Medication Errors/ (12904)
2 Diagnostic Errors/ or Medical Errors/ (50858)
3 Safety Management/ (18970)
4 "Quality of Health Care"/ (67617)
5 "Drug-Related Side Effects and Adverse Reactions"/ (28807)
6 Quality Assurance, Health Care/ (54243)
7 Patient Safety/ (15220)
8 patient* safety.mp. (36509)
9 medication* safety.mp. (1813)
10 adverse drug event*.mp. (3346)
11 adverse drug react*.mp. (18585)
12 medica* incident*.mp. (289)
13 medica* mishap*.mp. (54)
14 medica* mistake*.mp. (211)
15 medica* misadventure*.mp. (110)
16 drug misadventure*.mp. (15)
17 drug* toxicity.mp. (5129)
18 medication related harm*.mp. (36)
19 medication related incident*.mp. (19)
20 medication related problem*.mp. (407)
21 medication reporting system*.mp. (0)
22 pharmaceutical reporting system*.mp. (0)
23 medic* prescri* error*.mp. (64)
24 drug* prescri* error*.mp. (17)
25 prescri* error*.mp. (977)
26 medica* dispensing error*.mp. (23)
27 drug* dispensing error*.mp. (15)
28 dispensing error*.mp. (262)
29 medication* administra* error*.mp. (310)
30 drug* administra* error*.mp. (108)
31 administra* error*.mp. (836)
32 medication* related admission*.mp. (8)
33 drug related admission*.mp. (47)
34 Patient Transfer/ (7469)
35 medic* review*.mp. (2562)
36 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34 or 35 (274351)
37 INCIDENCE/ (234415)
38 PREVALENCE/ (257797)
39 rate*.mp. (2756246)
40 Drug Substitution/ (2882)
41 therapeutic shift*.mp. (15)
42 brand substitution*.mp. (24)
43 generic substitution*.mp. (510)
44 37 or 38 or 39 or 40 or 41 or 42 or 43 (3092353)
45 Australia/ or Australian Capital Territory/ or New South Wales/ or Northern Territory/ or Queensland/ or South Australia/ or Tasmania/ or Victoria/ or Western Australia/ or Australia.mp. or Victoria.mp. or Tasmania.mp. or New South Wales.mp. or Queensland.mp. or Australian Capital Territory.mp. or Australia*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms] (184765)
46 36 and 44 and 45 (1125)
47 limit 46 to yr="2013 -Current" (440)

APPENDIX

TABLE A:1: Medication-related hospital admissions or readmissions: Australia 1988–2018

	Total admissions reviewed	Total medicine related	TYPE OF MEDICINE RELATED ADMISSION			
			Adverse drug reaction	Non-compliance	Over-dose	Other
All hospital admissions assessed						
Carroll et al., 2003[8]	50,712	643 (1.27%)	643 (1.27%)	N/A	N/A	N/A
Gleeson 1988[11]	947	34 (3.6%)	34 (3.6%)	N/A	N/A	N/A
Larmour et al 1991[12]	5,623	136 (2.4%)	90 (1.6%)	5 (0.09%)	40 (0.7%)	1 (0.02%)
Admissions via Emergency Department assessed						
Galbraith 1993[3]	751	48 (6.4%)	Unknown	Unknown	7 (0.9%)	Unknown
Dartnell et al 1996[4]	965	68 (7%)	26 (2.7%)	15 (1.6%)	13 (1.3%)	14 (1.5%)
Phillips et al. 2014[1]	400	59 (15%)				
Admissions to Medical Wards assessed						
Sarkawi & Daud 1995[14]	419	49 (11.7%)	21 (5%)	12 (2.9%)	14 (3.3%)	2 (0.5%)
Stanton et al.1994[15]	691	81 (11.7%)	21* (3%)	10* (1.4%)	26* (3.8%)	11* (1.6%)
Leishman & Vial 1998[a16]	217	33 (15.2%)	10 (4.6%)	8 (3.7%)	11 (5.1%)	4 (1.8%)
Unplanned readmissions assessed						
Blackbourn 1991[74]	180	29 (16%)	12 (6.7%)	14 (7.8%)	1 (0.6%)	2 (1.1%)
Hewitt 1995[75]	131	46 (35%)	29 (22%)	1 (0.8%)	0	16 (12.2%)
Greenshields et al., 1997[76]	63	17 (27%)	unknown	unknown	unknown	unknown
Stowasser et al., 2000a[77]	28	9 (32.1%)	unknown	unknown	unknown	unknown
Paediatric admissions assessed – medical only excluding oncology						
Easton, 1998[78]	1,682	58 (3.4%)	10 (0.6%)	29 (1.7%)	10 (0.6%)	9 (0.5%)
Easton et al 2004[79]	2,933	127 (4.3%)	29 (1.0%)	38 (1.3%)		

TABLE A:1: Medication-related hospital admissions or readmissions: Australia 1988–2018 (Cont)

	Total admissions reviewed	Total medicine related	TYPE OF MEDICINE RELATED ADMISSION			
			Adverse drug reaction	Non-compliance	Over-dose	Other
Geriatric admissions via emergency departments assessed						
Ng 1996[17]	172	31 (18%)	18 (10.5%)	5 (2.9%)	1 (0.6%)	7 (4.1%)
Atkin et al 1994[18]	217	48 (22.1%)	41 (18.9%)	5 (2.3%)	1 (0.5%)	1 (0.5%)
Wong et al. 1993[19]	245	49 (20%)	35 (14.3%)	13 (5.3%)	1 (0.4%)	N/A
Wong et al. 1993[19]	541	81 (15%)	61 (11.3%)	19 (3.5%)	1 (0.2%)	N/A
Harding, 1998[20]	16	6 (37.5%)	4 (25.0%)	1 (6.25%)	0	1 (6.25%)
Chan et al., 2001[80] (>=75 years)	240	73 (30.4%)	32 (13.3%)	9 (3.8%)	1 (0.42%)	31 (12.9%)
Parameswaran Nair et al., 2017[2] >65 years	1,008	191 (18.9%)				
Cardiac patients admitted to the coronary care unit or medical wards						
Lee & Oldenburg 1993[81]	112	37 (33%)	14 (12.5%)	11 (9.8%)	0	12 (10.7%)
Emergency department attendances						
Galbraith 1993[3] (adults)	594 (not admitted)	51 (8.6%)	8 (1.3%)			
Easton 200382 (paediatrics)	8,601 (includes admissions)	280 (3.2%)	118 (1.4%)			
Hendrie et al., 2007[83]	3,332 (includes admissions)	45 (1.4%)	45 (1.4%)			

N/A = Not assessed

* = only definite or probable drug-related admissions reported
(all other results report definite, probable or possible drug-related admissions)

1 = medical and respiratory wards and endocrinology unit

a = assessed by medical file review and examination of medication changes

TABLE A:2: Preventability of adverse medicine events associated with hospitalisation or admissions due to medication-related problems

		Total number of medicine-related problems or admissions	Percentage considered definitely avoidable	Percentage considered probably or possibly avoidable	Percentage considered probably not or definitely unavoidable
Parameswaran et al., 2017[2]	Geriatric admissions	328	87.2%		
Phillips et al., 2014[1]		72	54.2%	11.1%	34.7%
Easton et al., 2004[79]	Paediatric admissions	81	46.9%		30.9%
Easton-Carter et al., 2003[82]	Paediatric emergency department attendances	187	51.3%		36.9%
Chan et al., 2001[80]	Geriatric admissions	73	53.4	23.3	23.3
Lau et al., 2004[84]	Hospital Oncology ADRs	454	1.6%	46.1%	53.4%
Dartnell et al 1996[4]	General admissions	55*a	5%	60%	35%
Sarkawi et al, 1995[14]	Medical admissions	35*	23%	46%	31%
Easton 1998[78]	Paediatric admissions	48*+	#	67%	29%
Ng 1996[17]	Geriatric admissions	31	3%	29%	68%

* - overdose excluded # - category not used + - 2 cases unassessable

Note: estimates of adverse drug event preventability in the community from one study were 23%.[85]

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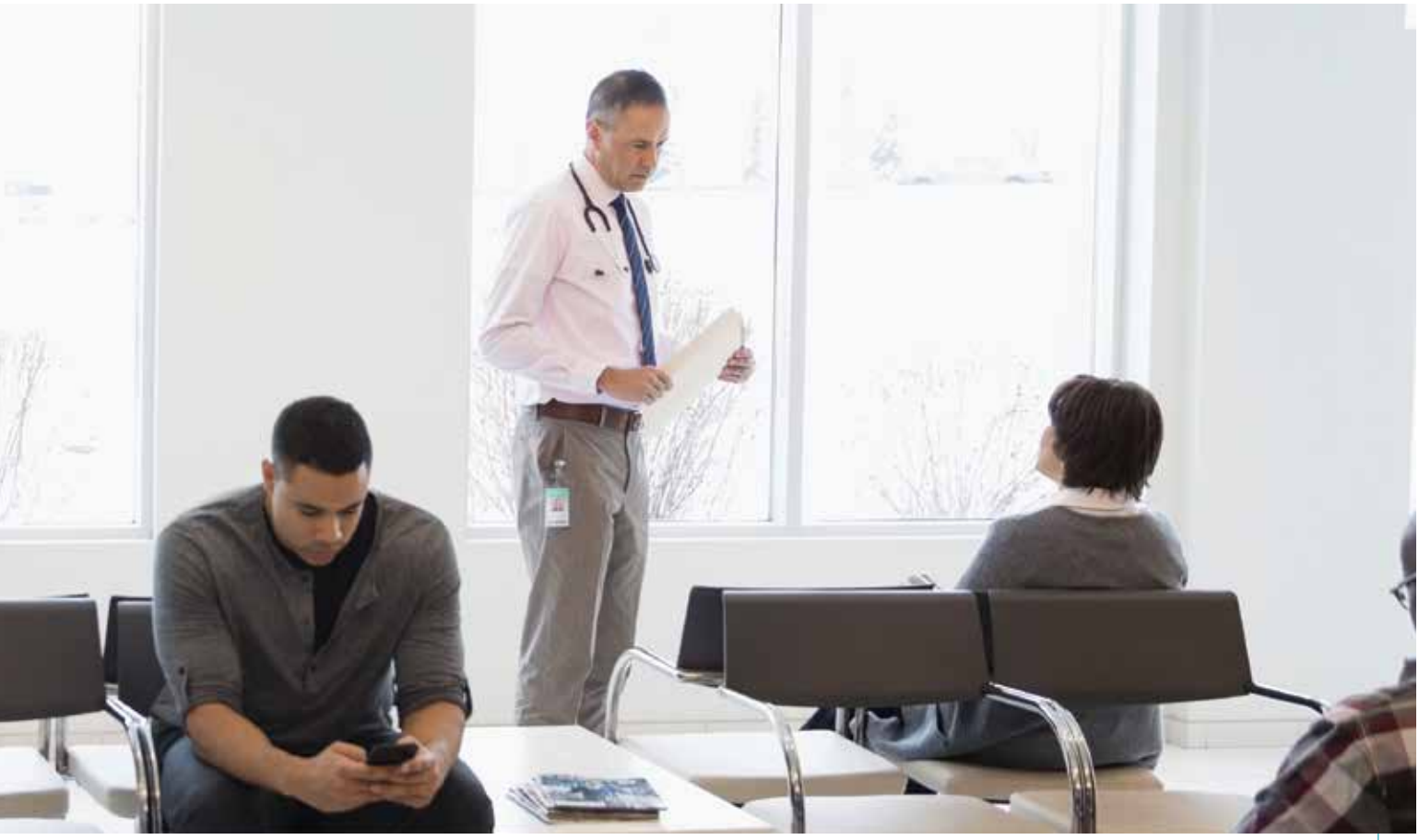
TABLE A:3: Derivation of overall estimates of medication-related hospital admissions and emergency department attendances in Australia 2016–2017

	Median estimate from Australian medication-related hospital admission studies	Public hospital admissions	Private hospital admissions	Total
Denominator data (Source AIHW Hospital statistics 2016-17)[9]	Admissions	6,587,000	4,426,000	11,013,000
	Emergency admissions	2,800,301	238,970	3,039,271
	Admissions from emergency department attendances	2,418,000	166,780	2,584,780
	Medical admissions	2,694,343	1,010,967	3,705,310
	Admissions in persons 65 years and over	2,580,483	2,018,849	4,599,332
All admissions (n=2)[11,12]	2.5%	164,675	110,650	275,325
Emergency admissions (n=3)[1,4,13]	7%	196,021	16,728	212,749
Emergency admissions (n=3) emergency department presentations as the denominator	7%	169,260	11,675	180,935
Medical admissions (n=3)[14,15,16]	12%	323,321	121,316	444,637
Emergency admissions in the elderly (n=6)* [2,17–20]	20.5%	227,470	20,693	248,163
Emergency attendances (not admitted) (n=1)[3]	8.6%	462,852	3,192	466,044

*Assume 43% of all public admissions are emergency and 5% of all private are emergency: consistent with estimates for all ages

Note: Carroll et al., 2003 excluded from derivation as relied on routine administrative coding only



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250,000 hospital admissions annually are a result of medication-related problems. The annual costs for Australia are $1.4 billion

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Attachment G: *Taking Care (article published in the July 2019 issue of Australian Pharmacist)*

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Taking care

Pharmacists at the vanguard of medicine safety

TAKING CARE

BY **JOSHUA HOEY**

In its landmark *Medicine Safety: Take Care* report, PSA identified the frightening cost of medicine misadventure in Australia. With medicines safety a central theme at this month's PSA19 annual conference, meet seven pharmacists whose pioneering work is providing a vision of a safer healthcare future.

Ensuring the safe use of medicines is one of the most serious and urgent issues facing Australia's healthcare system.

The problem was clearly identified in PSA's report, *Medicine Safety: Take Care*, released earlier this year. Adverse reactions, inappropriate prescribing and polypharmacy lead to over 250,000 hospital admissions annually, at a cost of $1.4 billion. Incredibly, at least half of these admissions are preventable.

Pharmacists, with their expertise in medicines, must play a central role in reducing this burden by being present wherever medicines are used.

To address the issue and reduce the burden of medicine misadventure, research has identified the need for pharmacists to be present at points of transition, for pharmacists to reconcile and review medications at discharge from hospital and transitioning into the community, and to have pharmacists integrated into healthcare teams in residential aged care facilities (RACF).

The good news: some pharmacists are already leading by example in these and other areas, ranging from opioid use and diabetes education to medicine safety in aged care and deprescribing. These pioneers are already reducing the incidence of medicine misadventure and ensuring the quality use of medicines.

Meet seven pharmacists already at the vanguard of medicine safety.

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Deprescribing

Dr Amy Page FPS

Once a patient is started on a medicine it can be difficult to stop, and can lead to inappropriate prescribing, polypharmacy and medicine misadventure. According to a recent study among people aged 65 and over readmitted to hospital, 55% were due to inappropriate medicine, and 6% of all admissions were due to inappropriate medicine.[1]

'In the last 11 years, the actual number of people over 70 affected by polypharmacy has risen by 52%[2],' says Dr Amy Page FPS, NHMRC early career fellow at Alfred Health and Monash University. 'Even if you just look at the percentage of older people affected, it's 9% more now than in 2006[2].'

Dr Page works for a general practice (GP) clinic conducting medication reviews, while also conducting research into deprescribing, particularly in older patients. She was recently part of two randomised control trials looking at deprescribing.

The first was a pilot involving 95 people.[3] 'We reduced medicines by about two per person over a 12-month period and we showed that there was no difference in mortality,' she says. The second was a three-arm placebo control trial of deprescribing across nursing homes in Sydney and Perth that is yet to be published. For this study, Dr Page and another pharmacist decided which medicines were ceased or continued for each participant in the RACF. Her research showed that pharmacists and doctors were similar in the decisions they made. She's also running studies in GP clinics translating deprescribing research into practice.

'At discharge from hospital, the pharmacist works through which medicines to deprescribe and then follows up with the patient and their doctor at the GP practice,' she says. While the studies are still underway, anecdotal evidence is positive. 'It's looking amazingly well received by the GP and patient – to have a pharmacist who can access hospital notes, medications, and answer questions about what happened.'

Dr Page says poor communication and inertia are largely to blame for problems with polypharmacy and the difficulty of deprescribing.

'Often the consultant pharmacist, the GP, the specialist, would all identify that someone needed a medicine deprescribed, but everyone would say it was somebody else's responsibility,' she says. Once started on a medication, research shows that the majority of people erroneously think continuing it is a non-decision. »

Dr Page sees the opportunity for pharmacists to lead the way in deprescribing. 'It's like being a patient advocate – attending the GP practice with the patient,' she says. 'Identify the problem in patient records, remind clinicians to bring it down, make patient-specific recommendations to reduce – and be there to follow it through.'

Residential aged care

Richard Thorpe MPS

In late 2018, Richard Thorpe was employed by Goodwin Aged Care Services in Canberra, becoming the first full-time on-site pharmacist in a Residential Aged Care Facility (RACF) in Australia.

Previously a contractor, his role had been restricted to conducting Residential Medication Management Reviews (RMMRs) within the constraints of the government rules. But Thorpe says he can now have a more holistic approach to his work, administering staff vaccines, training carers to administer medications safely, and chairing medication advisory and antibiotic stewardship meetings.

'The main difference on a day-to-day basis is my ability to address medication issues promptly,' he says. 'With traditional RMMRs, it's harder for the pharmacist to provide advice and information on an ad hoc basis, as their workload for the day is often preorganised well in advance.'

Embedding pharmacists in RACFs also facilitates expedient reviews of medicines like benzodiazepines and antipsychotics, Thorpe says. 'There is no limit on the frequency that a facility-based pharmacist can review the use of psychotropic medications with an enduring power of attorney, nursing staff and the prescriber,' he says. Under the current RMMR rules, medication reviews

'In my experience, pharmacists have a very good sixth sense when auditing medication charts or assessing changes in a resident's management.'

Richard Thorpe

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can only be conducted every 24 months or when the GP specifically deems another review is clinically necessary.

Dose Administration Aids (DAAs) play an important role in aged care by simplifying medication administration, but there have been problems associated with them, he says. Issues with the currency of information used by the pharmacy providing a DAA has the potential to lead to errors; this is especially possible with GPs, specialists, nurses and allied health professionals working across the RACF, as well as hospitals and other clinics often all being involved in a resident's medication regimen. If medication information from all these sources to the pharmacy providing the DAA isn't seamless, errors can occur. Having pharmacists coordinating any changes is essential.

'In my experience, pharmacists have a very good sixth sense when auditing medication charts or assessing changes in a resident's management, particularly during high-risk periods such as transitions of care, and this can help ensure that the medications administered via DAAs are safe,' he says.

While aged care has traditionally been the domain of accredited pharmacists, Mr Thorpe sees scope for a formal training and accreditation pathway.

'Working with older, frail people who often have complex medicines and multiple co-morbidities does require advanced medicines knowledge; quality service provision would benefit from accreditation or some other formal training,' he says.

'The transition of pharmacists currently conducting RMMRs into the role envisaged by PSA in the *Pharmacists in 2023* report would, in my opinion, play a significant part in improving the safe provision of medicines in aged care.'

Community pharmacy

Sam Keitaanpaa MPS

Sam Keitaanpaa brings a specialised suite of skills to his community pharmacy role at Berry Springs, a 40-minute drive south of Darwin in the Northern Territory.

Mr Keitaanpaa's work in medicine safety sees him working in tandem with prescribers attending to the needs of a far-flung community and, in the dry season, a passing parade of 'grey nomads' on their Top End pilgrimages. A wider leadership role and high level of expertise sees him regularly presenting at conferences and workshops around the country, where he focuses on the creation of new processes which maximise the ability for pharmacists to improve client health through better adherence to regulations and ways to manage client interactions, particularly in under-represented and vulnerable groups.

Through his practice at Berry Springs, Mr Keitaanpaa has earned a reputation for his talent of engaging patients on a one-to-one level, building relationships that allow him to cut through to the truth about some questionable medicines regimens. This involves customising his counselling to the diverse range of patients he encounters. He does this through active listening, while maintaining a curious, open mind.

'Frankly, a lot of my patients haven't a lot of awareness of their medicines. It means an increased chance of medicine-related misadventure or suboptimal use of medicines. They might only come and see the doctor every six months and just be interested in getting in and out. But I've found that once you build that relationship up with them in the community pharmacy, where we have the opportunity to see them more often, they start asking questions, and from there we can identify a lot of different issues.'

Some of the most common problems he encounters regarding medicine safety are patients' self-increasing and decreasing doses.

'It's not uncommon for me to see, say, a patient taking a double therapeutic dose of antidepressants, purely because they feel that if one tablet helps, then three tablets might help more. But they won't mention that to anyone, so you've got to have a keen eye to see what's going on in their usage patterns.

'A lot of these issues in this region are driven by patients' lower socioeconomic status,' says Mr Keitaanpaa. 'For some of my patients with limited money, we arrive at financial agreements which recognise their cashflow limitations. The choice is between that and, 'No, you're not going to get your medicines.'

'I'm not in the business of denying patients medicines. Otherwise these people are just going to fall through the cracks.'

In one case, a patient didn't have a syringe to measure out *Ordine*, so »

Mr Keitaanpaa drove the 25 minutes into the bush to meet the patient, who had been managing his own palliative care.

'He was going to measure out his *Ordine* with a 50 ml syringe he used for spreading pesticides,' Mr Keitaanpaa recalls.

Correcting these kinds of false health beliefs are a daily challenge. Mr Keitaanpaa says the affinity he develops with patients comes from his strong patient-safety mindset that he continues to cultivate through his study for a PhD at Charles Darwin University.

Diabetes education

Kirrily Chambers

As a consultant pharmacist and diabetes educator in South Australia, Kirrily Chambers has seen firsthand how medicine safety can be driven through knowledge and education. She became Australia's first credentialed diabetes educator pharmacist in 2009, a role she was driven to pursue herself after being diagnosed with type one diabetes.

'Throughout my life I struggled to understand why, despite all my very best efforts, I was never able to hit the magic health numbers that were expected of me,' Ms Chambers says. 'Once I started my role as a pharmacist, and when pharmacies became National Diabetes Service Scheme (NDSS) access points, I began to understand there was a real need for more accessible education for individuals with diabetes.'

Ms Chambers now has her own clinical rooms within a community pharmacy setting. Community pharmacists interact with the public more than any other healthcare professional, and that gives them a unique opportunity to have a positive impact on chronic health issues, says Ms Chambers. While clients with diabetes may have regular check-ups with healthcare professionals, their condition is largely self-managed. Her practice model of care allows for far more consistent follow-up.

'The more access to quality education throughout their journey with diabetes, the better their outcome,' says Ms Chambers.

When it comes to quality use of medicines and their safety, Ms Chambers says the key with diabetes is consistent and simple regimens. 'Mistakes usually happen when regimens are complex,' she says. 'I have realised that to improve medicine safety, regimens should be simplified.

'Traditionally, pharmacists haven't been seen as part of the healthcare team, but as we get more sophisticated with our communication, we will have a greater impact on health outcomes.'

Hospital

Dr Jacinta Johnson FPS

As a lecturer in pharmacy at the University of South Australia, while holding the title of Senior Pharmacist – Research within the Southern Adelaide Local Health Network, Dr Jacinta Johnson has been a driving force in medicine safety research, identifying patterns of errors in acute hospital settings.

'As pharmacists, our core day-to-day role is fixing things for patients – making sure everything is safe for the individual. But my research has been looking at what's been happening again and again, and seeing what changes we can make to the system to reduce the likelihood of mistakes recurring,' she says.

One area of particular focus is opioid medicines. Dr Johnson says it's a

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prominent issue not only internationally, but for the health system in South Australia, in both hospital and community settings.

'We're looking at safe opioid as-needed prescribing. Are we giving enough buffer between doses? How do we monitor? And how do we de-escalate once we've started opioids so that we're not discharging people out into the community with boxes of analgesics they don't actually need?' she says.

For pharmacists in hospital settings, Dr Johnson says a significant role is at the point of discharge, ensuring that what's prescribed aligns with what the patient is likely to need based on inpatient use and discussions with those patients.

'We're not just in the (hospital) dispensary anymore. In recent years we've seen a real scale-up in terms of the number of patients that we have been able to see on the wards, an area where pharmacists' clinical services are expanding.'

Medication simplification

Dr Janet Sluggett MPS

At Monash University's Centre for Medicine Use and Safety, National Health and Medical Research Council early career fellow Dr Janet Sluggett has focused her research on using Big Data to improve medicine safety in aged care.

'My research involves analysing and interpreting Pharmaceutical Benefits Scheme (PBS) and Medicare Benefits Schedule (MBS) administrative claims data, which will ultimately inform the development of strategies to support pharmacists and others to reduce the risk of medicines-related harm,' she says.

Dr Sluggett was part of the team that developed the Medication Regimen Simplification Guide for Residential Aged Care, or MRS GRACE. It's the first validated tool to assist pharmacists and other health practitioners to consolidate a resident's medications. Currently, Dr Sluggett leads a team of 18 researchers in the SIMPLER study, a clinical trial using MRS GRACE with 242 residents across 8 aged care facilities with a three-year follow-up. Accredited pharmacists visit residents in the intervention group and use MRS GRACE to identify ways for residents to take the same medicines fewer times a day.

'Early results suggest that up to two-thirds of residents can take their medicines in a simpler way. The positive response to the trial has led us to undertake a pilot and feasibility study among people receiving aged care services in their own homes,' she says.

Aged care facility residents often consume the highest amounts of medicines, and Dr Sluggett supports the urgent need for models of care which embed pharmacists within residential aged care facilities. 'My previous work as a transitional care pharmacist and now as an embedded researcher has really highlighted the importance of involving pharmacists in medication reconciliation for new residents, and for residents transitioning between hospital and the aged care facility,' she says.

Read the SIMPLER study outline at: **doi.org/10.1186/s13063-017-2417-2**

The big picture

Professor Libby Roughead MPS

Professor Libby Roughead is a Senior Principal Research Fellow at the University of South Australia's School of Pharmacy and Medical Sciences. As an author of PSA's *Medicine Safety: Take Care* report, she is well-versed in the problems associated with medicines.

'It's always good to remind ourselves of the problem we're trying to address. It's something we haven't yet solved, but we've improved things over time. We have services like Home Medicines Reviews and MedsChecks, but they were initiatives developed around 20 years ago when things were a bit simpler.

'We're using more medicines for more conditions. We need to be thinking about developing new services and providing patients with more options. A medicine review once a year probably isn't good enough if someone's had five medicine changes in that year.'

Early intervention is paramount to ensure the safe use of medicines, Professor Roughead says. 'It's about being proactive and identifying side effects within those first four weeks of use.'

Ms Roughead says now is the time to develop new services. Research should focus on what services are most valuable.

MEDICINE SAFETY: TAKE CARE
PSA's recently released report can be downloaded at: **psa.org.au/medicine-safety**

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