

QUALITY USE OF MEDICINES TO OPTIMISE AGEING IN OLDER AUSTRALIANS:

Recommendations for a National
Strategic Action Plan to Reduce
Inappropriate Polypharmacy





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ABOUT THIS REPORT

Australia has a significant opportunity to improve the quality use of medicines by older adults. A cohesive, national approach is required to address the issue of inappropriate polypharmacy in older adults and promote deprescribing. To progress this approach, stakeholders have worked together over the past three years to develop the recommendations for a National Strategic Action Plan for implementation, which are contained in this report. Implementation of the plan will lead to positive outcomes for our growing ageing population and for Australian society more broadly.

Initially, a National Stakeholders Meeting involving consumers, health care professionals, academics and policymakers was held in Sydney on 3 August 2015 in conjunction with the second annual Australian Deprescribing Network (ADeN) workshop. The meeting was convened by Professor Sarah Hilmer and supported by the NHMRC Cognitive Decline Partnership Centre (CDPC) at the University of Sydney and by NPS MedicineWise. Stakeholders attending included consumers, health care professionals, academics; representatives of consumer groups, non-government organisations, the aged care industry, professional societies, agencies on quality use of medicines and patient safety in hospitals, expert advisory committees on medicines to the Australian Government; and observers from Australian Government departments of health and social services.

The goal of the meeting was to inform the agenda to improve quality use of medicines for older Australians, with an emphasis on avoiding the harms of polypharmacy (multiple medicines use). The outcomes of the meeting (<http://sydney.edu.au/medicine/cdpc/documents/about/outcome-statement-national-stakeholders-meeting.pdf>) provided a framework for development of a detailed National Strategic Action Plan by small working groups. The framework was further refined with an additional stakeholder workshop at the National Medicines Symposium (Canberra, June 2016). This report synthesises the outcomes of the meetings and subsequent input from working groups into recommendations for a National Strategic Action Plan for implementation.

ACKNOWLEDGEMENTS

This document was compiled by Sarah Hilmer, Professor of Geriatric Pharmacology, University of Sydney, with assistance from Emily Reeve, National Health and Medical Research Council–Australian Research Council (NHMRC-ARC) Dementia Research Development Fellow, University of Sydney, and Jennifer Thompson, Operations Manager, CDPC. Editorial assistance was provided by Lisa Kouladjian-O'Donnell, Postdoctoral Research Pharmacist, CDPC. Key input was also received from action item team leaders: Michael Dooley, Geoffrey Herkes, Parisa Aslani, Christopher Etherton-Beer, Simon Bell, Ian Scott, Aine Heaney, David Le Couteur and Danijela Gnjidic (Table 1).

The organisations leading this work - CDPC, NPS MedicineWise and ADeN would like to express thanks to the many individuals who participated in the stakeholders meetings and those who have contributed to the action plan. As this document represents the outcomes and consensus of group discussions, the views and recommendations in the action items may not necessarily represent those held by all individuals involved throughout the development.

EXECUTIVE SUMMARY

As our population ages, more people are living with multiple chronic diseases with an associated increase in polypharmacy (multiple medicines use). Medicines use in older people is a complex balance between managing disease and avoiding medicines related problems. Supervised withdrawal of unnecessary medicines (deprescribing) is safe and may improve quality of life in older people.

The National Stakeholders Meeting identified three main findings supporting the urgent case for change:

- (1) There is a significant prevalence of harmful or unnecessary medicine use in older Australians. This has negative impacts on health and wellbeing of older Australians and increases indirect costs to the community in the order of hundreds of millions of dollars annually. There is increasing evidence that deprescribing (supervised withdrawal) of harmful or unnecessary medicines is safe and benefits the individual and the community.
The majority of stakeholders agreed that a 50% reduction in harmful or unnecessary medicines use by older Australians over five years would be a clinically significant, feasible target.
- (2) Addressing polypharmacy in older Australians will require changes in policy and practice, data collection, analysis and feedback on medicine use in older adults.
- (3) Harmful or unnecessary medicine use can be reduced through partnership of key stakeholders, focusing on awareness, incentives and tools to optimise quality use of medicines for older Australians.

The National Stakeholders Meeting formulated **seven key action items**, which were further progressed by working groups of stakeholders in developing recommendations for a National Strategic Action Plan. The plan recognised that implementation of these actions requires an integrated cohesive approach underpinned by collaboration and contribution of all stakeholders across all settings, which will require resources. The key actions are shown in Figure 1.

The working groups assigned to each action adopted a 5-step standardised method of implementation, which defined:

1. Inputs or resources required to develop the action item;
2. Outputs in terms of specific actions and next steps;
3. Short term outcomes resulting from the preceding foundational work;
4. Measurable indicators of successful implementation of the action item;
5. Intermediate outcomes of the action item in regards to clinical practice and policy

The end goal of all action items was reduction in inappropriate polypharmacy and better health and quality of life for older Australians.

ACTION ITEMS

In formulating the action items, it was recognised that all sectors of the health care system needed to be targeted to achieve the end goal: reduction of inappropriate polypharmacy and better health and quality of life for older Australians. Accordingly, action items were formulated on the basis of a four level model: overall policy and regulatory environment of health, health care organisations in which care is delivered, health care professionals, and the broader public and recipients of care (adapted from 'A framework for a systems approach to health care delivery'¹).

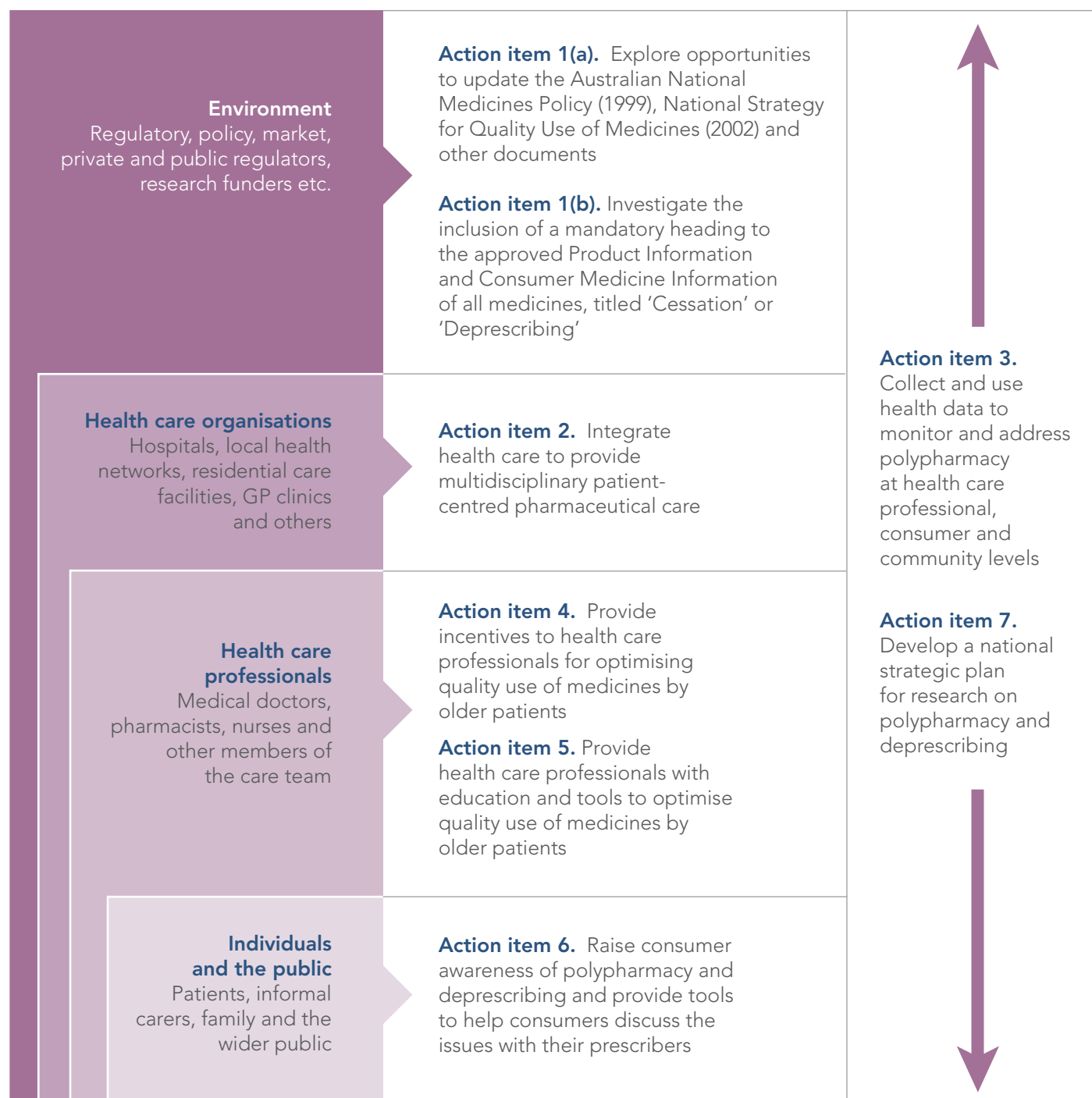


Figure 1: Action items organised by the four-level model of health systems

OVERARCHING GOALS AND IMPLEMENTATION

The goal of the proposed National Strategic Action Plan outlined in this document is to improve quality use of medicines to optimise successful ageing in older Australians. This can only be widely achieved through the delivery of an integrated cohesive implementation plan, which includes collaboration and contribution of all stakeholders across all settings.

Implementation of the recommended plan will require both top-down executive or legislative action and grassroots bottom-up approaches. Top-down approaches will be required for most of the policy initiatives, for health care professional incentives, and for tackling the challenges posed by a nationally fragmented health service for older people. Bottom-up approaches will be facilitated through providing education, resources and information for health care professionals and consumers.

The proposed National Strategic Action Plan will be circulated to relevant consumer, professional, academic, government and policymaking organisations for the following purposes:

1. Raise awareness of the significant challenges polypharmacy creates for individuals and society.
2. Provide an integrated cohesive National Strategic Action Plan for a wide spectrum of stakeholders and settings (national and/or local organisations) to use when designing their own plans for reducing polypharmacy and optimising medicines use in their population.
3. Highlight the activities and resources needed as part of a cohesive framework to inform funding and policy decisions.

In the following sections, each action is described in more detail, reflecting the 5-step implementation method, and concluding with information on current progress relevant to the action. While the actions are presented in this document as separate and distinct, they are inherently linked. For example, updating the National Medicines Policy to include recommendations for deprescribing practice (Action 1a) would support progression in many of the other actions such as providing incentives for health care professionals (Action 4). Details of group leaders who have developed each action are provided in Table 1.

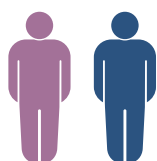
BACKGROUND

As our population ages, an increasing number of people are living with multiple chronic diseases (multimorbidity) including dementia, polypharmacy (multiple medicines use) and complex health care needs. There has been a rapid increase in polypharmacy in Australia and internationally over the past decade and the prevalence continues to rise, especially in older adults. While medicines can control symptoms and prevent disease, they can also cause harm. Medicines use to optimise ageing in older people is a complex balance between managing disease and avoiding medicines-related problems such as side effects and medicine errors.

Key facts and figures²⁻⁸



2 out of 3 Australians aged over 75 take 5 or more medicines



Approximately HALF of all older adults are taking a medicine that is harmful or unnecessary

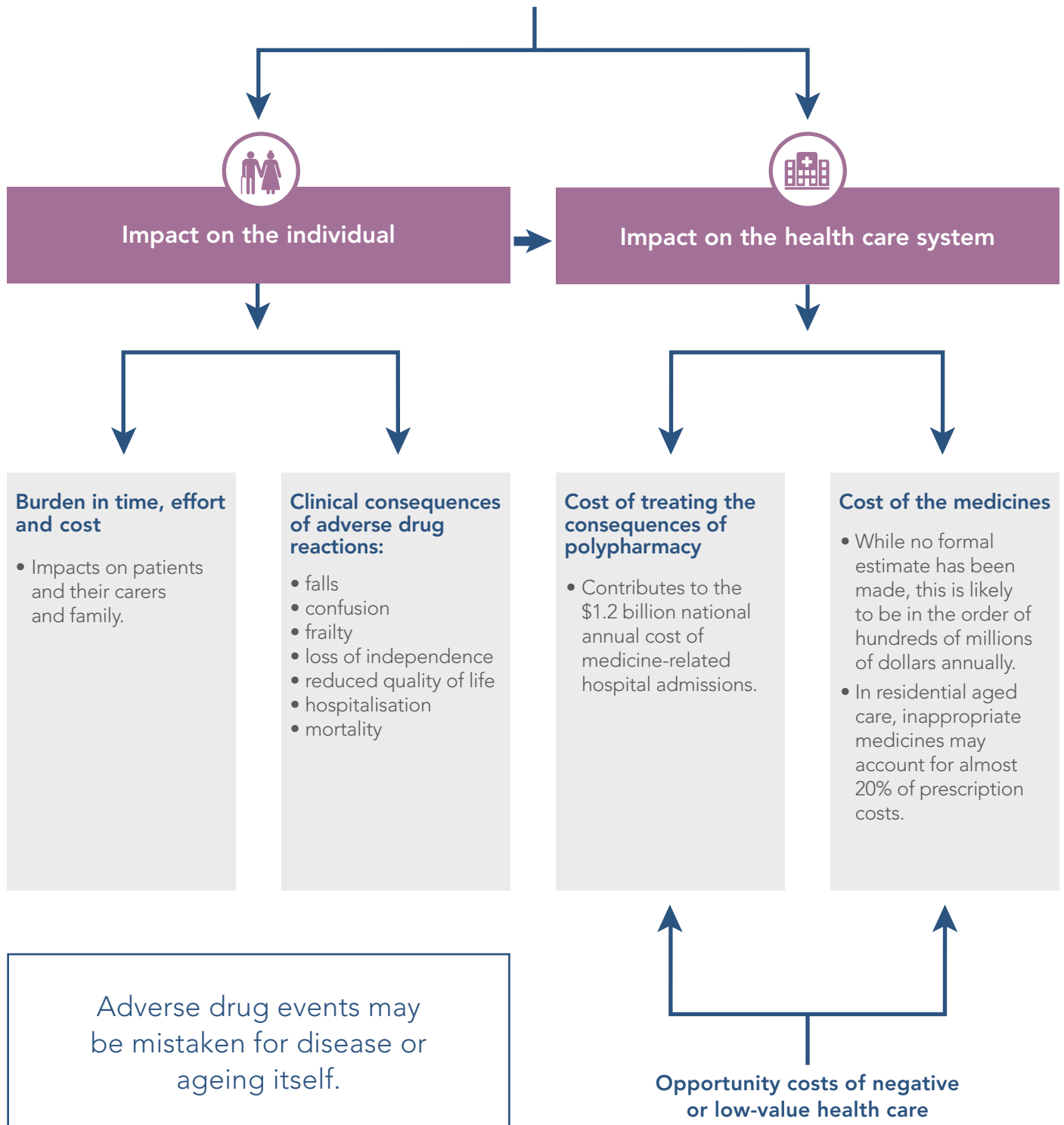


9 out of 10 older adults are willing to stop one or more of their medicines if their doctor said it was possible

There is emerging evidence that supervised withdrawal of harmful or unnecessary medicines (deprescribing) is safe and may improve quality of life in older people.^{5,9}

Deprescribing is not about denying effective treatment. It is about improving the overall harm versus benefit balance of medicine use for individuals.

POLYPHARMACY AND UNNECESSARY OR HARMFUL MEDICINES



CASE STUDY

Mr MM is an 85-year-old, active, retired engineer, living with his wife. Over the past two decades he has developed high blood pressure, high cholesterol, urinary symptoms and osteoarthritis. He found himself taking eight regular medicines, which he felt were a burden to him. He and his wife wondered if he really needed all eight medicines, but were also concerned about his health and wanted to follow the recommendations of his doctors.

At a recent appointment with his GP, Mr MM mentioned that he had some difficulties with regular activities at home. His GP reviewed his medicines and discussed the reasons for taking each of them with Mr MM and his wife. His GP also referred him to an accredited pharmacist for a home medicines review to detect any drug-related problems.

After receiving feedback from the pharmacist, the GP spoke with Mr and Mrs MM again, and together they agreed on several medicines that may be suitable for trial discontinuation.

One month later, three of his medicines have been withdrawn. Mr and Mrs MM are pleased about this as they were involved in the decision on which medicines to continue and which to discontinue, and were supported by their GP throughout the process. Additionally, they have noticed a great improvement in his quality of life, in particular he is less drowsy and much more alert.

Based on a real
patient with details
changed to protect
his privacy

Mrs MM said,

*'For the first time in over a
year, my husband has picked
up and used his smartphone.'*



Table 1: Team leaders of each of the action items

Action	Name	Position, Institution
1(a)	Prof Michael Dooley	President, Society of Hospital Pharmacists Australia; Director of Pharmacy, Alfred Hospital; Professor of Clinical Pharmacy, Faculty of Pharmacy and Pharmaceutical Sciences, Monash University; Adjunct Professor, Department of Epidemiology and Preventative Medicine, School of Public Health and Preventative Medicine, Monash University
	Prof Sarah Hilmer	Head of Department of Clinical Pharmacology and Senior Staff Specialist in Aged Care, Royal North Shore Hospital; Conjoint Professor of Geriatric Pharmacology Medicine, and Investigator, NHMRC Cognitive Decline Partnership Centre, Kolling Institute, Northern Clinical School, Faculty of Medicine and Health, University of Sydney
1(b)	A/Prof Geoff Herkes	Chair, Advisory Committee on Prescription Medicines; Clinical Associate Professor, Sydney School of Medicine, Faculty of Medicine and Health, University of Sydney
	Prof Parisa Aslani	Professor in Medicines Use Optimisation at the School of Pharmacy, Faculty of Medicine and Health, The University of Sydney
2	Prof Christopher Etherton-Beer	Associate Professor, Medical School, Faculty of Health and Medical Sciences, University of Western Australia
3	Prof Simon Bell	Investigator, NHMRC Cognitive Decline Partnership Centre; Professor and NHMRC Dementia Leadership Fellow, Centre for Medicine Use and Safety, Monash University; Adjunct Associate Professor, School of Public Health and Preventive Medicine, Monash University; Adjunct Professor of Geriatric Pharmacotherapy, Faculty of Health Sciences, University of Eastern Finland; Adjunct Associate Professor, School of Pharmacy and Medical Sciences, University of South Australia
4	A/Prof Ian Scott	Director of Internal Medicine and Clinical Epidemiology, Princess Alexandra Hospital; Associate Professor of Medicine, University of Queensland
5	Ms Aine Heaney	Client Relations Manager, NPS MedicineWise
6	Dr Emily Reeve	NHMRC-ARC Dementia Research Development Fellow, NHMRC Cognitive Decline Partnership Centre, Kolling Institute, Northern Clinical School, Faculty of Medicine and Health, University of Sydney; Geriatric Medicine Research, Faculty of Medicine, Dalhousie University and Nova Scotia Health Authority (Canada); Adjunct Appointee, College of Pharmacy, Faculty of Health Professions, Dalhousie University (Canada)
7	Prof David Le Couteur	Professor of Medicine, Concord Clinical School, ANZAC Research Institute and Charles Perkins Centre, University of Sydney
	Dr Danijela Gnjjidic	NHMRC Dementia Leadership Fellow and Senior Lecturer, School of Pharmacy and Charles Perkins Centre, University of Sydney

ACTION ITEMS

Action 1(a): Explore opportunities to update the Australian National Medicines Policy (1999), National Strategy for Quality Use of Medicines (2002) and other documents that guide medicines use to explicitly include issues of multimorbidity, polypharmacy and deprescribing

SUMMARY: The Australian National Medicines Policy was last updated in 1999 and the National Strategy for Quality Use of Medicines in 2002. Multimorbidity and polypharmacy have increased significantly over the past 15 years with the ageing population and changes in medicine use. Significant knowledge has been gained in these areas, as well as in medication review and deprescribing. Other national documents may also be updated, such as the Australian Government Guiding Principles for Medication Management in Residential Aged Care Facilities 2012, Guiding Principles for Medication Management in the Community 2006, Guiding Principles to Achieve Continuity in Medication Management 2005 and the National Safety and Quality Health Service (NSQHS) Standards (second edition, 2017, medication review added to medication safety standards). This should result in engagement and prioritisation in relevant jurisdictional governmental guidelines and national professional organisational standards of practice.

Inputs (resources required)	<ul style="list-style-type: none"> - Time of <ul style="list-style-type: none"> • working group • government employees (Commonwealth and jurisdictional) • professional groups responsible for relevant policies • project officer to write case for changes
Outputs (specific actions and next steps)	<ul style="list-style-type: none"> - Review of existing Australian policies - Review of international policies on polypharmacy and deprescribing - Engagement and collaboration with key stakeholders responsible for relevant policies - Case for change written up
Short-term outcomes	<ul style="list-style-type: none"> - Dissemination of summaries of key documents - Meetings with people responsible for relevant policies - Development and scoping of a targeted plan for engagement of key stakeholders responsible for relevant prioritised policies and guidelines - Policymakers' consideration of including these issues in policy updates or supplements
Indicators (measures of success)	<ul style="list-style-type: none"> - Issues identified are considered and discussed at key national and jurisdictional representative forums - Plan for policy update - Allocation of resources for policy changes
Intermediate outcomes	<ul style="list-style-type: none"> - Inclusion of multimorbidity, polypharmacy and deprescribing in the national policy documents identified and other guidance produced by professional and state organisations, informed by these policy changes - Clinical indicators and incentives to support policy - Education to support policy
End goals	<ul style="list-style-type: none"> - Reduction of inappropriate polypharmacy - Better health and quality of life for older Australians

PROGRESS: Development and dissemination of this recommended National Strategic Action Plan constitutes the first step in addressing this action item. The outcomes of the 2015 National Stakeholders Meeting have informed the Australian Commission on Safety and Quality in Health Care as it develops the Australian Government's response to the 2017 WHO Third Global Patient Safety Challenge: Medication Without Harm.

Action 1(b): Investigate the inclusion of a mandatory heading to the approved Product Information and Consumer Medicine Information of all medicines, titled 'Cessation' or 'Deprescribing'

SUMMARY: There are opportunities to address polypharmacy and deprescribing within national drug regulation. It has been proposed that the Australian Therapeutic Goods Administration (TGA) could add a mandatory heading to the approved Product Information (PI) and Consumer Medicine Information (CMI) of all medicines, titled 'Cessation' or 'Deprescribing', providing information on when and how to safely withdraw or cease the medicine and any known outcomes resulting from this recommendation.

Inputs (resources required)	<ul style="list-style-type: none"> - Time of <ul style="list-style-type: none"> • expert panel: TGA/pharmaceutical manufacturers (including parent companies outside Australia) • professional and consumer interest group representatives
Outputs (specific actions and next steps)	<ul style="list-style-type: none"> - Regulatory actions: mandatory requirements or incentives for pharmaceutical companies
Short-term outcomes	<ul style="list-style-type: none"> - Guidance on evidence required from clinical trials and post-marketing surveillance strategies for the outcome of cessation - Guidance on requirements for and format of deprescribing information provided to health care professionals (PI) and patients (CMI)* - Adaptation of deprescribing terminology to consumer-friendly language
Indicators (measures of success)	<ul style="list-style-type: none"> - Evidence from clinical trials and post-marketing surveillance strategies for the outcome of cessation submitted by sponsor to the TGA - Standard statements (templates) for the PI and CMI that cessation is possible, under supervision of prescriber, depending on the medicine - Standard statements (templates) for the PI and CMI on how prescribers can withdraw the medicine and how patients can seek advice on cessation
Intermediate outcomes	<ul style="list-style-type: none"> - Inclusion of the heading 'Cessation' or 'Deprescribing' in the PI and CMI - Increased awareness of health care professionals and consumers that medicines may be stopped as part of good clinical care - Resources on what happens when medicines are stopped and how to withdraw them to support health care professionals and consumers
End goals	<ul style="list-style-type: none"> - Reduction of inappropriate polypharmacy - Better health and quality of life for older Australians

* <https://www.tga.gov.au/product-information-pi>; <https://www.tga.gov.au/consumer-medicines-information-cmi>

PROGRESS: The CMI Electronic Distribution Working Group provides a formal avenue for activity leads to begin a conversation regarding adding information about deprescribing to the CMI. A current Australian study is investigating patient information leaflets on deprescribing. The results of this study may inform the future format of deprescribing information in CMI.

Action 2: Integrate health care to provide multidisciplinary patient-centred pharmaceutical care

SUMMARY: There is a need to provide multidisciplinary, integrated patient-centred pharmaceutical care to older Australians across settings (community, residential aged care, public and private hospitals), health care professionals (general practitioners, specialists, pharmacists, nurses, optometrists and other allied health) and funding bodies (federal and state governments, private health insurers, aged care providers and individuals). It was proposed that a systems map be developed to better understand the complex pathways older Australians take through health care, followed by work at policy and practice levels to facilitate multidisciplinary, integrated patient-centred care to improve the quality use of medicines.

Inputs (resources required) ↓	<ul style="list-style-type: none">- Time of<ul style="list-style-type: none">• working group• relevant stakeholders such as, Department of Health national/state, residential aged care facilities and professional organisations
Outputs (specific actions and next steps) ↓	<ul style="list-style-type: none">- Investigation of development of a systems map- Work and policies reviewed by relevant regulatory, professional and academic organisations on multidisciplinary, integrated person-centred health care for older Australians- Relevant meetings planned
Short-term outcomes ↓	<ul style="list-style-type: none">- Consensus regarding key objectives of this activity
Indicators (measures of success) ↓	<ul style="list-style-type: none">- Completed validation survey or focus groups
Intermediate outcomes ↓	<ul style="list-style-type: none">- Key risks and opportunities identified to provide multidisciplinary, integrated patient-centred pharmaceutical care in health systems- Plans developed to address these risks and opportunities
End goals	<ul style="list-style-type: none">- Reduction of inappropriate polypharmacy- Better health and quality of life for older Australians

PROGRESS: A working group for this activity was assembled, which has created and published a high-level systems map of medication management in Australia. The working group also generated ten recommendations to inform and strengthen multidisciplinary consumer-centred care to improve the quality use of medicines in Australia.

Page AT, Cross AJ, Elliott RA, Pond D, Dooley M, Beanland C, Etherton-Beer CD on behalf of Working Group 2. Integrate health care to provide multidisciplinary consumer-centred medication management: report from a working group formed from the National Stakeholders' Meeting for the Quality Use of Medicines to Optimise Ageing in Older Australians. *Journal of Pharmacy Practice and Research*. 2018: Published online 21 June 2018

Action 3: Collect and use health data to monitor and address polypharmacy at the health care professional, consumer and community levels

SUMMARY: The emergence of e-health brings opportunities to prompt prescribers and consumers about quality use of medicines. There is also an opportunity to develop systems to maintain accurate up to date medicine records for older Australians. On a community level, prevalence of polypharmacy and high-risk medicines use, and associations with patient outcomes, economic outcomes and process markers could each be monitored nationally. While linked data are not available nationally, monitoring and feedback can be provided at a health care professional level within existing programs such as the NPS MedicineWise program MedicineInsight, Victorian Public Sector Residential Aged Care Services Quality Indicators and NSW TAG (Therapeutic Advisory Group) National Quality Use of Medicines Indicators.

Inputs (resources required)	<ul style="list-style-type: none"> - Shared commitment to collect and use health data to inform and evaluate local quality improvement initiatives - Stakeholders to organise and participate in meetings - Input and endorsement from professional and government organisations - Resources to educate health care professionals and consumers how to interpret the data to inform quality improvement
Outputs (specific actions and next steps)	<ul style="list-style-type: none"> - Engagement of NPS MedicineWise for MedicineInsight and Clinical e-Audits - Engagement with existing systems such as e-health, the Pharmaceutical Benefits Scheme/Medical Benefits Division, primary health networks and local health districts to use existing data - Investigation of opportunities for common systems for medicine data entry across sectors - Investigation of opportunities for new data
Short-term outcomes	<ul style="list-style-type: none"> - Meetings to discuss potential data sources and feedback mechanisms and how these can be implemented
Indicators (measures of success)	<ul style="list-style-type: none"> - Specific plans on how to generate and use data to improve quality use of medicines for older Australians - Development and agreement of key clinical indicators
Intermediate outcomes	<ul style="list-style-type: none"> - Statewide and national data on prevalence of polypharmacy, clinical and economic outcomes and process markers - Feedback to inform national, state and regional policymakers prompting system-level initiatives to mitigate the risk associated with polypharmacy - Health care professional feedback prompting reviews of patients' medicines
End goals	<ul style="list-style-type: none"> - Reduction of inappropriate polypharmacy - Better health and quality of life for older Australians

PROGRESS: The Victorian Government has launched three new quarterly medicine quality indicator measures for public sector aged care services (proton-pump inhibitors, antipsychotics and more than four medicine administration times) to support deprescribing, regimen simplification and local quality improvement initiatives. The NSW TAG is currently developing national quality use of medicines indicators for review of inappropriate polypharmacy in older inpatients.

Action 4: Provide incentives to health care professionals for optimising quality use of medicines by older patients

SUMMARY: Improving quality use of medicines for older Australians will be enabled by greater use of strategies that promote more proactive review and deprescribing of medicines, adoption of existing or new Medical Benefits Scheme (MBS) items related to quality use of medicines, strategies to improve access to non-pharmacological therapies, and regular reporting and feedback of quality indicators.

Inputs (resources required)	<ul style="list-style-type: none"> - Time of stakeholders and researchers to investigate: <ul style="list-style-type: none"> • integration of quality use of medicines and deprescribing interventions with practice accreditation processes, professional development programs and quality improvement requirements • feasibility and effectiveness of medication review strategies and substitution of medicines with non-pharmacologic management - Awareness raising campaigns for health care professionals
Outputs (specific actions and next steps)	<ul style="list-style-type: none"> - Development of public commitment statements and health care professional awards relating to excellence in quality use of medicines in older people - Systems to regularly report relevant quality indicators at the appropriate organisational level - Identification of existing, or formulation of new, MBS items to facilitate comprehensive medication review - Institutional policies that mandate deployment of prescribing decision support systems and medication reviews - Compilation of resources, including digital, that can be used for medication review and non-pharmacological management.
Short-term outcomes	<ul style="list-style-type: none"> - Dissemination of publicly displayed commitment statements and promulgation of awards for quality use of medicines in older adults - Awareness raising of existing and/or new MBS items to facilitate comprehensive medication review - Incorporation of non-pharmaceutical management resources into management pathways, including digital - Increased reporting of quality indicators and risk sharing arrangements pertaining to medication use
Indicators (measures of success)	<ul style="list-style-type: none"> - Number of publicly displayed commitment statements - Number of quality use of medicines awards - Rate per capita of medication reviews by pharmacists and/or doctors - Rates of substitution of non-pharmacological management for prescribed medicines - Rates of reporting quality indicators and trends in indicators over time
Intermediate outcomes	<ul style="list-style-type: none"> - Better use of existing and new MBS items - Better use of non-pharmacological interventions - Quality use of medicines prioritised in routine practice
End goals	<ul style="list-style-type: none"> - Reduction of inappropriate polypharmacy - Better health and quality of life for older Australians

PROGRESS: Choosing Wisely Australia has listed recommendations from four professional societies representing geriatricians, general physicians, clinical pharmacologists and palliative care physicians that oblige health care professionals to review medication lists, deprescribe as appropriate, and consider non-pharmacological interventions (<http://www.choosingwisely.org.au/recommendations>). NPS Medicinewise gives out national QUM awards at the National Medicines Symposium, although these do not specifically recognise work with older patients or polypharmacy. Members of the ADeN have publicised deprescribing guidelines and decision tools in mainstream medical journals and multiple professional meetings.

Posters publicly stating a commitment to quality use of medicines are being used in some practices. Current MBS items relating to health assessments and action plans involving older or complex patients have been targeted for medication optimisation activities. The Royal Australian College of General Practitioners (RACGP) Handbook of Non-Drug Interventions (HANDI) provides a readily accessible web-based guide to more than 100 interventions that can reduce the need for medicines (<https://www.racgp.org.au/handi>).



Case Study of Success: European SIMPATHY Project

The SIMPATHY project (Stimulating Innovative Management of Polypharmacy and Adherence in The elderLY), is being delivered by a consortium of 10 institutions from eight countries in Europe. It is an innovative and coordinated approach to optimising care of older adults and involves participation of health care stakeholders, educators, politicians and policymakers, patients and patient representatives. They compiled case studies and conducted an extensive literature review to identify what polypharmacy management programs are available in Europe and to gather existing guidelines on polypharmacy management.

The SIMPATHY project has resulted in a number of resources including a handbook (which includes key recommendations for implementing change to improve quality use of medicines in older adults), change management tools and an economic analysis tool. The SIMPATHY project has demonstrated that change management can be used to implement effective polypharmacy management at scale and that this can lead to benefits for older adults (such as reduced hospitalisations). The project has also enabled a number of new polypharmacy management guidance documents to be developed by European countries as well as polypharmacy indicators.

As a result of the SIMPATHY project, government support was endorsed in Scotland with the Health Secretary calling the other EU countries to take action in partnership with the WHO Patient Safety Unit, with further development of policy and programs in Northern Ireland, Catalonia, Sweden and Germany. In countries such as Italy and Portugal where no programs existed, pilot programs have been established. The Scottish Polypharmacy program also demonstrated the economic benefits and cost savings.

Action 5: Provide health care professionals with education and tools to optimise quality use of medicines by older patients

SUMMARY: The principles of quality use of medicines in old age, geriatric pharmacology and deprescribing should be part of the undergraduate and postgraduate curricula for all health care professionals involved with medicines management. Synthesis and translation of research into guidelines, tools and educational opportunities to guide appropriate prescribing and deprescribing in older adults with multimorbidity are needed. Health care professional tools and guidelines could be provided through apps and be integrated with existing sources of medicines information (e.g., the Australian Medicines Handbook and RACGP Silver Book) at the point of care. As a precedent, the Australian Medicines Handbook companion volume on Prescribing in Older Patients now includes sections on inappropriate polypharmacy and deprescribing.

Inputs (resources required)	<ul style="list-style-type: none"> - Time of working groups including key stakeholders such as health care professionals, academics, consumer groups, safety organisations and governments - Money: in-kind or grants/research - Forums/venues for meetings/discussion
Outputs (specific actions and next steps)	<ul style="list-style-type: none"> - Scoping document on coordinating, developing and implementing tools - Investigation of evidence on existing tools - Prioritisation of targets - Engagement of major stakeholders - Applications for support - Definition of 'success case' and assignment of roles including evaluation and communication plan
Short-term outcomes	<ul style="list-style-type: none"> - Synthesis of existing tools and improvement of access to/coordination of existing tools - Agreement on best place to locate/format/channel tools - Plan to address gaps in existing tools - Plan to improve utilisation of tools with, for example, prompts and multidisciplinary approaches - Large education and awareness campaign about tools/resources
Indicators (measures of success)	<ul style="list-style-type: none"> - Accessible integrated multidisciplinary tools freely available - Uptake of tools (such as through website hits) - Surveys of health care professionals - Increased knowledge and awareness of strategies and tools available to address polypharmacy among relevant health care professionals
Intermediate outcomes	<ul style="list-style-type: none"> - Health care professionals have a better understanding of quality use of medicines in older people - Health care professionals use tools to review medicines in older patients
End goals	<ul style="list-style-type: none"> - Reduction of inappropriate polypharmacy - Better health and quality of life for older Australians

PROGRESS: In 2018, NPS MedicineWise launched a large educational visiting program in primary care focusing on deprescribing (<https://www.nps.org.au/starting-stepping-down-and-stopping-medicines>). The new program titled *Starting, stepping down and stopping medicines* will use proton pump inhibitors (PPIs), one of the most commonly prescribed, familiar medicines in general practice, to illustrate in detail what to consider at initiation, when to review, and when it is appropriate to step down or stop. The program will target general practitioners, as well as other health professionals, and consumers.

A number of health professional resources related to deprescribing have been developed as part of previous NPS MedicineWise therapeutic programs (available from <https://www.nps.org.au/>). Several primary health care networks have developed Health Pathways on polypharmacy.



Case Study of Success: Targeting Single Drug Classes

In 2011, NPS MedicineWise ran a program called *Balancing benefits and harms of antipsychotic therapy* that aimed to improve the quality of life of adults through the safe and effective use of antipsychotics when indicated, while balancing optimal disease management. The program addressed schizophrenia, bipolar disorder, and the behavioural and psychological symptoms of dementia and was multifactorial including GP education visits, paper-based clinical audits, print publications for health professionals, drug use evaluation materials for residential aged care facilities, a national case study and website resources.

Significant improvements in GP knowledge were demonstrated, with GPs who participated in active intervention having a higher level of knowledge about antipsychotic therapy than GPs who had not participated in the program. Changes in GP prescribing practice attributable to the program were associated with a decrease of 34,675 prescriptions, or a relative 4% reduction in modelled Pharmaceutical Benefits Scheme prescription volume.

Action 6: Raise consumer awareness of polypharmacy and deprescribing and provide tools to help consumers discuss the issues with their prescribers

SUMMARY: Opportunities to inform, educate and engage consumers (older adults and their carers and families) about the risks of polypharmacy at a public health and a health care professional level should be identified. Empowering consumers to ask their prescribers if they still need all of their medicines may encourage collaborative medication review. Consideration of the health literacy of consumers and expectations of a health care consultation will be required. The Choosing Wisely Australia initiative led by NPS MedicineWise and involving consumer organisations could facilitate this.

Inputs (resources required)	<ul style="list-style-type: none">- Time of<ul style="list-style-type: none">• working group to identify current resources, gaps and limitations• consumer reference group (plus remuneration)• key stakeholders such as health care professionals, academics, consumer advocacy representatives, safety organisations and governments- Time/money for development and implementation of tools/resources
Outputs (specific actions and next steps)	<ul style="list-style-type: none">- Investigation of existing resources and identification of gaps or limitations- Consumer reference group assembled- Creation of work plan including resources required to generate or evaluate the necessary consumer tools/resources
Short-term outcomes	<ul style="list-style-type: none">- Consumer reference group established- Tools/resources to improve consumer-initiated medication reviews- Better accuracy and uptake of consumer held medication lists- Public health outputs/campaigns to raise awareness
Indicators (measures of success)	<ul style="list-style-type: none">- Utilisation of tools- Consumer awareness survey(s)
Intermediate outcomes	<ul style="list-style-type: none">- Older adults and carers/families understand the risks of polypharmacy- Deprescribing understood by the general public as a regular and positive part of care- Consumers empowered to ask prescribers whether they still need all of their medicines
End goals	<ul style="list-style-type: none">- Reduction of inappropriate polypharmacy- Better health and quality of life for older Australians

PROGRESS: Research has been conducted into how consumers feel about deprescribing. Choosing Wisely Australia has produced a number of resources to help facilitate conversations between consumers and their health care professionals about unnecessary tests, treatments and procedures. Resources for consumers include *5 questions to ask your doctor or other health care provider before you get any test, treatment or procedure* (<http://www.choosingwisely.org.au/resources/consumers/5-questions-to-ask-your-doctor>). NPS MedicineWise holds an annual Be MedicineWise week to raise public awareness of quality use of medicines.

Action 7: Develop a national strategic plan for research on polypharmacy and deprescribing

SUMMARY: High-quality evidence is required on the effects of stopping unnecessary and potentially harmful medicines on the health and wellbeing of older adults. Research is also needed on how to implement deprescribing in Australian clinical practice in a safe, consistent and cost-effective manner. Deprescribing implementation research needs to involve health policy, health care organisations, health care professionals and consumers. A strategic plan is required to identify evidence gaps, prioritise research questions and identify potential funding sources.

Inputs (resources required) ↓	<ul style="list-style-type: none">- Time of<ul style="list-style-type: none">• working group• project officer to assist with scoping/writing plans• stakeholders such as academics, health care professionals, consumers and potential funders
Outputs (specific actions and next steps) ↓	<ul style="list-style-type: none">- Review of literature- Investigation of potential funding sources
Short-term outcomes ↓	<ul style="list-style-type: none">- Identification of knowledge gaps on efficacy, safety and implementation- Identification of potential funding sources
Indicators (measures of success) ↓	<ul style="list-style-type: none">- Document outlining knowledge gaps- Document outlining research priorities- Funding plan
Intermediate outcomes ↓	<ul style="list-style-type: none">- Increased research and evidence- Increased synthesis of existing research- Increased awareness of the current state of research, available evidence and gaps in knowledge- Translation of research into practice
End goals	<ul style="list-style-type: none">- Reduction of inappropriate polypharmacy- Better health and quality of life for older Australians

PROGRESS: There are active research projects on deprescribing across the country, and Australia is recognised as an international leader in this field. However, a coordinated approach such as the one described above requires resources. A number of research projects have been conducted to further this action including a survey of researchers and health professionals about how to conduct clinical deprescribing trials.

FACILITATING IMPLEMENTATION AND CONCLUSIONS

These recommendations for a National Strategic Action Plan represent a combined effort of relevant stakeholders and leading experts in deprescribing across Australia. The proposed actions outline clear opportunities to reduce inappropriate polypharmacy and thereby improve the health and quality of life for older Australians.

This is an ideal time to implement these proposed actions because of the ageing of our population, and the developing strong but fragmented pilot work nationally, and alignment with current national and international policies on health and ageing. Much of the development and progress of the proposed National Strategic Action Plan to date has utilised resources of existing organisations and individuals, whose priorities align with the goal of improving quality use of medicines to optimise ageing in older Australians. Examples of successful activities in Australia, providing the foundations for a coordinated approach, include:

- programs by NPS Medicinewise targeting medication safety, polypharmacy and deprescribing in older people
- addition of a section on deprescribing to the Australian Medicines Handbook
- several state-based implementation projects including the NSW Health Translational Research Grant to Reduce Inappropriate Polypharmacy in Older Inpatients
- targeted NHMRC funding for dementia, such as the Team Approach to Polypharmacy Evaluation and Reduction for General Practice patients with dementia (Australian TAPERdem study) and fellowships at all levels for multidisciplinary researchers conducting research on quality use of medicines in older adults

Implementation of this plan could efficiently take advantage of existing initiatives in health care reform to improve patient-centred care, reduce negative and low-value health care and improve patient safety, such as:

- the Choosing Wisely Australia and the Royal Australian College of Physicians 'Evolve' initiatives: several organisations' 'top 5 tests, treatments, and procedures for health care providers and consumers to question' including recommendations about reducing inappropriate medication use
- the WHO Third Global Patient Safety initiative aimed at reducing medication-related harm¹⁰

Many stakeholders who contributed to developing the recommendations for a National Strategic Action Plan are involved in organisations that already have localised policies and guidance consistent with the goals outlined in this document. These organisations may be able to explicitly integrate quality use of medicines sections within their own work plans and/or provide their own plans/implementation approaches as models for others.

While there are opportunities to further work in this area with existing resources, judicious implementation of this National Strategic Action Plan (Figure 2) will require central coordination. Common inputs across all activities in the National Strategic Action Plan are as follows:

- Addressing the burden of polypharmacy in Australia has not been systematically organised. To achieve the goals outlined in this document, change needs to occur across the four levels of health care (Figure 1).

- Time of appropriately skilled persons (and therefore funding) is required to progress this Strategic Action Plan, for example, a project officer to coordinate the teams' activities, scope opportunities within existing policy and practice and design detailed cases for change and work plans. The funding and supervision of such a position needs to be determined and secured. Funding of this position is likely to eliminate waste that can occur when researchers and organisations are working in silos.
- Systems to facilitate collaboration, communication and coordination (such as a website, teleconferencing tools, project management software and social networking tools) are required.
- Coordination of resources and/or targeted funding calls could ensure that resources are distributed across the areas of need identified in this action plan while reducing unnecessary duplication of work.



Factors for effective implementation

Resources: financial, human, information. **Workforce development:** continuing education, mentoring, teamwork. **Organisational support:** commitment, policies, strategic plans.

Figure 2: Flow of strategies and actions to reduce inappropriate polypharmacy and improve health and quality of life for older Australians. Publication of this document represents completion of the second step of this flow chart. SWOT = Strengths, Weaknesses, Opportunities and Threats

In summary, a cohesive national approach is required to address the issue of inappropriate polypharmacy in older adults. Implementation of the National Strategic Action Plan outlined in this report will lead to positive outcomes for older Australians and the Australian society more broadly.

ABOUT THE DEVELOPING ORGANISATIONS



The NHMRC Partnership Centre: Dealing with Cognitive and Related Functional Decline in Older People (Cognitive Decline Partnership Centre)

The CDPC aims to improve the lives of people with dementia by developing, communicating and implementing research that improves care. The approach of the CDPC is guided by a commitment to working together, diversity and translating rigorous research into practice.

The CDPC receives support from the NHMRC and funding partners including HammondCare, Brightwater Care Group, Helping Hand Aged Care and Dementia Australia. The CDPC brings together clinicians, researchers, aged care practitioners, policymakers and consumers who have a wide range of expertise in working with older people with cognitive and related functional decline.

One of the areas of research of the CDPC is optimising the quality use of medicines for people with cognitive and related functional decline.



The Australian Deprescribing Network

The ADeN was formed in 2014 following a workshop in Brisbane (Qld) that brought together clinicians and researchers with an active interest in deprescribing. Since then the ADeN has held annual meetings in Sydney (2015), Melbourne (2016) and Brisbane (2017), with the 2018 meeting scheduled for Adelaide. The 2014 workshop led to a publication in a high-ranking medical journal: Scott IA, Hilmer SN, Reeve E, Potter K, Le Couteur D, Rigby D, Gnjdic D, Del Mar CB, Roughead EE, Page A, Jansen J. Reducing inappropriate polypharmacy: the process of deprescribing. *JAMA Internal Medicine*. 2015;175(5):827-834.

The ADeN seeks to promote more research and awareness of the implementation and effects of deprescribing as a core component of appropriate prescribing in routine clinical practice.



NPS MedicineWise

NPS MedicineWise is an independent, not-for-profit and evidence-based organisation that works to improve the way health technologies, medicines and medical tests are prescribed and used. Established in 1998 with the primary aim of promoting quality use of medicines, NPS MedicineWise has grown to connect with health consumers and health professionals nationwide, changing attitudes and behaviours, and empowering all Australians to make the best possible health care decisions.

REFERENCES

1. National Academy of Engineering (US) and Institute of Medicine (US) Committee on Engineering and the Health Care System; Reid PP, Compton WD, Grossman JH, Fanjiang G, eds. Building a Better Delivery System: A New Engineering/Health Care Partnership. Washington, DC: National Academies Press; 2005.
2. Morgan TK, Williamson M, Pirotta M, Stewart K, Myers SP, Barnes J. A national census of medicines use: a 24-hour snapshot of Australians aged 50 years and older. *Med J Aust.* 2012;196(1):50-53.
3. Hubbard RE, Peel NM, Scott IA, et al. Polypharmacy among inpatients aged 70 years or older in Australia. *Med J Aust.* 2015;202(7):373-377.
4. Opondo D, Eslami S, Visscher S, et al. Inappropriateness of medication prescriptions to elderly patients in the primary care setting: a systematic review. *PLoS One.* 2012;7(8):e43617.
5. Scott IA, Hilmer SN, Reeve E, et al. Reducing inappropriate polypharmacy: the process of deprescribing. *JAMA Intern Med.* 2015;175(5):827-834.
6. Harrison SL, Kouladjian O'Donnell L, Milte R, et al. Costs of potentially inappropriate medication use in residential aged care facilities. *BMC Geriatr.* 2018;18(1):9.
7. Roughead EE, Semple SJ, Rosenfeld E. The extent of medication errors and adverse drug reactions throughout the patient journey in acute care in Australia. *Int J Evid Based Healthc.* 2016;14(3):113-122.
8. Reeve E, Low L-F, Shakib S, Hilmer SN. Development and validation of the revised Patients' Attitudes Towards Deprescribing (rPATD) questionnaire: versions for older adults and caregivers. *Drugs Aging.* 2016;33(12):913-928.
9. Page AT, Clifford RM, Potter K, Schwartz D, Etherton-Beer CD. The feasibility and effect of deprescribing in older adults on mortality and health: a systematic review and meta-analysis. *Br J Clin Pharmacol.* 2016;82(3):583-623.
10. World Health Organization. Medication Without Harm: WHO's Third Global Patient Safety Challenge. WHO website. <http://www.who.int/patientsafety/medication-safety/en/>.

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