Medicine optimisation and deprescribing intervention outcomes for older people with dementia or mild cognitive impairment: a systematic review

Drugs & Aging

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Details of Interventions

MEDICATION REVIEW AND HEALTHCARE PROFESSIONAL EDUCATION INTERVENTIONS		
Intervention	**What is delivered?**	**Who delivers it, how is it delivered, when and how much is delivered?**
WHELD intervention (Ballard et al 2016; Ballard et al 2017)	Anti-psychotic review and associated education	Primary care physicians or psychiatry specialists used national guidelines to review antipsychotic prescriptions. WHELD therapists provided education to care home staff on safe antipsychotic prescribing and monitoring, and to physicians via an interactive seminar and/or practice meeting. A toolkit or best practice guide was provided to physicians. Processes to prompt physician review were developed for care home staff.
OPUS-AP intervention (Cossette et al 2020; Cossette et al 2022)	Antipsychotic tapering following guidelines	Provincial guidelines for antipsychotic tapering were disseminated followed by an integrated knowledge mobilisation strategy (2-day in person initial training for nursing staff, physicians, pharmacists and managers, monthly recorded webinars, coaching, clinical tools, evaluation of clinical practices, online learning platform and personalised support from expert clinicians). For the scale-up phase, a train the trainer approach was adopted, with the initial training extended to 3-days to enable effective delivery of training to peers.
OptimaMed intervention (Wilchesky et al 2018; Kroger et al 2023)	Knowledge exchange sessions, information for families about medication use and medication review.	Families of residents received a two-page information leaflet. A 90-minute Knowledge Exchange session including presentation of medication review guidance was delivered to nursing home nurses, pharmacists and physicians by a geriatrician and a pharmacist. Following the pilot study auxiliary nurses and orderlies were also included and an algorithm to taper antipsychotics added to the guidance. Medication reviews were conducted by pharmacists, repeated on an as-needed basis, who discussed recommended changes with the nurses and physicians.

Brodaty et al 2018	Education of healthcare staff and individualised antipsychotic deprescribing protocols	GPs received a peer education academic detailing session of 30-to 60-minutes' duration, plus reading material on anti-psychotic use, with an optional follow-up educational seminar. Pharmacists attended a continuing professional development module. (Training for Long Term Care staff focused on non-pharmacological approaches.) No details on who delivered the education provided. Study pharmacists developed an individualised deprescribing protocol which GPs implemented.
Maidment et al 2020	2 components: 1) Training for care staff and primary care staff and 2) Medication review	Care staff received a 3-hour educational workshop delivered by a researcher with health psychology training on behaviour that challenges, including antipsychotic use and guidelines to reduce psychotropics. Primary healthcare staff received brief training primarily focused on the treatment of BPSD. A full clinical medication review primarily focused on treatments for BPSD was conducted by a specialist dementia care pharmacist, involving the GP, resident and their carer. The GP received recommendations in writing, and a follow-up phone call.
Massot Mesquida et al 2019	Education and medication review.	A GP and primary care pharmacist received training focused on management of BPSD (no other details provided). They completed a preliminary evaluation to determine any prescription issues and what required patient evaluation for decision-making, before completing a medication review GP with a nursing home physician and nurse, based on guidelines for psychotropic drug use in the treatment of BPSD (developed by physicians and pharmacists).
CHROME intervention (Muniz et al 2020; Muniz et al 2021)	Implementation of CHROME criteria	Doctors, psychologists, nurses, managers and pharmacists received a 8-hour training in the CHROME criteria, which combine deprescribing and syndrome-specific prescribing, including diagnosis of neuropsychiatric syndromes and psychotropic medication prescription guidelines. Nursing home doctors then reviewed both diagnoses and prescriptions. The study director of the CHROME criteria provided ad libitum videoconference, e-mail, and telephone support.
PROPER intervention (van der Spek et al 2018; Smeets et al 2021)	Structured and repeated multidisciplinary medication review	Education on the practical aspect of medication review and on benefits/harms of psychotropic drugs, provided by the Dutch Institute for Rational Use of Medicine to the nursing home multi-disciplinary team (physician, pharmacist and nurse). The MDT completed bi-annual medication reviews focussing on psychotropic drugs but also including review of other drugs. Where there was MDT agreement medication adjustments were made after consultation with patients' representatives.
Yeh et al	GP education and drug tapering or replacement	Educational messages were mailed to primary care physicians focusing on anticholinergic adverse effects, the Clinician-Rated Anticholinergic Score and alternative drugs informed by systematic reviews of the literature. The physician-initiated drug tapering or replacement, restarting treatments according to clinical judgement. No other details provided.
MEDICATION REVIEW INTERVENTIONS		
Intervention	**What is delivered?**	**Who delivers it, how is it delivered, when and how much is delivered?**
Andrew et al 2018	Medication review alongside a new model of coordinated primary care.	Biannual medication review supported by a pharmacist.
Bravo-Jose et al 2019	Gradual tapering of antipsychotic treatment.	Medication tapering followed a protocol designed by a multi-disciplinary team. Who implemented this is not stated. One-off intervention delivered to individuals who met deprescription criteria stipulated in the protocol.

Coli et al 2022	Evaluation of patient medication charts	Clinical pharmacist (postdoctoral training in neurology & psychiatry) made recommendations to the clinic provider prior to the patient's next clinic visit using an electronic medical report for any "actionable" PIMs identified ("actionable, being where benefits did not outweigh risks).
Gustafsson et al 2017; Gustafsson et al 2018	Medication reconciliation and comprehensive medication review	During hospital admission, clinical pharmacist (post-graduate degrees and experienced in performing medication reviews) completed review of medication records and drug history, contributed to ward rounds and discussed with the ward team identified drug-related problems. Attending physicians made the final decision concerning proposed changes.
Jaidi et al 2018	Substitution of medications potentially inappropriate due to anticholinergic burden.	During hospital admission, medications that were potentially inappropriate in terms of the anticholinergic burden were substituted by other treatments. No details of the medication review to determine potentially inappropriate medications provided.
Kable et al 2023	An evidence-based bundle of care involving medication reconciliation and review.	On admission, a pharmacist completed medication reconciliation and medication review to assess PIMs, anticholinergic burden and polypharmacy, and study nurses completed a carer needs assessment. Prior to discharge, a pharmacist completed medication reconciliation, provided explanation and training, if required, to patients and carers and contacted the GP.
Liu et al 2022	Protocol-guided and digitally supported medication review and development of personalised medication care plans.	Interprofessional team-led medication review and proactive monitoring, with personalised medication care plans developed collaboratively by the team. Team included care team navigators (primary point of contact) and dementia specialists (pharmacist, advanced practice nurse, social worker) who contacted patients and carers by telephone. Medication reviews completed on enrolment and if there were medication changes, changes reported or questions raised by the patient or carer.
Molist Brunet et al 2014	Systematic evaluation of medication profiles.	On admission, medication review completed by MDT consisting of 2 geriatricians and a pharmacist, involving a 3-stage process to develop a patient-specific therapeutic plan: patient-centred assessment, diagnosis-centred assessment and medication-centred assessment.
Pearson et al 2021	Medication review and review of laboratory values to identify potential contributors to cognitive impairment.	On enrolment on the living with dementia program, review of charts by a senior pharmacist, with findings and recommendations communicated to the primary care provider via the electronic medical record.
Sakakibara et al 2015	Reductions to prescription drugs.	Pharmacist proposed reductions to medications in accordance with national guidance and to simplify administration. Appears to be one-off intervention.
Silva-Almodovar et al 2020	Automated, targeted medication reviews.	A computer algorithm scanned prescription claims data to identify and address specific medication problems, the system then sending the prescribing healthcare provider a fax detailing the medication, the problem with it and safer alternatives. This occurred every 6 months at most.

Weeks et al 2019	One of three interventions: 1) Medication review; 2) Use of STOPP/START criteria; 3) Use of a patient "decision aid".	MDT-led medication reviews or "Team Rounds" following a guideline developed for the study. Guidelines included recommendations for using interventions 2 and 3. STOPP/START criteria made available in electronic medical record and recommendations for conducting reviews using the criteria provided. Who delivered this is not stated. The decision aid presented risks and benefits of treatment options to patients and recommendations for using the decision aid were provided. Who delivered this is not stated.
EDUCATION ONLY INTERVENTIONS		
Intervention	**What is delivered?**	**Who delivers it, how is it delivered, when and how much is delivered?**
OPTIMIZE intervention (Bayliss et al 2022; Boyd et al 2024)	Multi-faceted educational intervention to engage patients, family members and primary care physicians.	An educational brochure on deprescribing was mailed to patients at least 7 days in advance of a primary care visit. Deprescribing tip sheets were distributed to clinicians at monthly clinic meetings. Clinicians were sent an electronic health record-based notification about clinic visits from patients who had been sent the brochure.
Martin and Tannebaum 2017	Direct to consumer educational intervention on benzodiazepine discontinuation	8-page paper-based deprescribing tool mailed to patients. The tool, individualised with the name of the patient's benzodiazepine, was embedded with program theories and information about benzodiazepines and non-drug alternates, and included a standard tapering protocol.
Pasina et al 2016	Educational presentations to GPs	2 geriatricians and one clinical pharmacologist delivered three educational presentations, each about 2 hours, on polypharmacy and PIMs plus training in use of a computerised prescription support system. Details of the training on the computerised system not provided.
Walsh et al 2022	Education sessions with nursing home staff and GPs	A pharmacist-researcher delivered academic detailing with GPs, providing them with guidance and a deprescribing algorithm. Three facilitators delivered a 2-day, 14-hour, face-to-face education session to nursing home staff 'opinion leaders', content developed by university-based experts. These staff and the pharmacist researcher then conveyed learning to other staff.

BPSD	Behavioural and psychological symptoms of dementia
CHROME	CHemical Restraints avOidance Methodology
GP	General Practitioner
MDT	Multi-disciplinary team
OPTIMIZE	Optimal Medication Management in Alzheimer Disease and Dementia
OPUS-AP	Optimizing Practices, Use, Care and Services – Antipsychotics
PIMs	Potentially Inappropriate Medications

PROPER	PRescription Optimisation of Psychotropic drugs in Elderly nuRsing patients with dementia
STOPP/START	Screening Tool of Older Person's Prescriptions / Screening Tool to Alert to Right Treatment
WHELD	Wellbeing and Health for People with Dementia

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