Integrated Care Matters
Self-management and co-production

Knowledge Resource

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Developed in partnership

International Foundation for Integrated Care
IFIC Scotland
Older People

Fabbietti P (2018) Impact of potentially inappropriate medications and polypharmacy on 3-month readmission among older patients discharged from acute care hospital: a prospective study, Aging Clinical and Experimental Research, 30(8), pp.977-984 (open access)

The aim of this study is to compare the impact of polypharmacy and potentially inappropriate medications (PIMs) on 3-month readmission among older patients discharged from acute care hospital. Besides confirming that polypharmacy should be considered as a marker for readmission risk among older patients discharged from acute care hospital, the findings suggest that the association between polypharmacy and 3-month readmission is substantially independent of use of PIMs.


This narrative literature review focuses on the description of the main barriers related to insufficient individualization of drug regimens associated with such age-blind approaches. The findings suggest that several regulatory and clinical barriers contribute to insufficient knowledge on the therapeutic value of drugs in older patients, age-blind approach, and inappropriate prescribing.


This systematic review examines the behaviour change techniques (BCTs) of deprescribing interventions and summarizes intervention effectiveness on medication use and inappropriate prescribing. The findings suggest that in general, deprescribing interventions effectively reduce medication use and inappropriate prescribing in older people. Successful deprescribing is facilitated by the combination of BCTs involving a range of intervention components.


This systematic literature review aims to describe how international tools designed to identify potentially inappropriate prescribing have been used in studies of older people with dementia, the prevalence of potentially inappropriate prescribing in this cohort and advantages/disadvantages of tools. Variations in tool application may at least in part explain variations in potentially inappropriate prescribing across studies. Recommendations include a more standardised tool usage and ensuring the tools are comprehensive enough to identify all potentially inappropriate medications and are kept up to date.

The aim of this study was to develop and validate a practical tool to identify medication-related hospital admissions (MRAs). The tool AT-HARM10 was developed using an iterative process including content validity and feasibility testing. The tool is valid for use in older patients by final-year undergraduate and postgraduate pharmacy students.

Kuhn-Thiel AM et al. (2014) Consensus validation of the FORTA (Fit fOR The Aged) List: a clinical tool for increasing the appropriateness of pharmacotherapy in the elderly, *Drugs & Aging*, 31(2), pp.131-140 (open access)

The aim of this study was to perform expert consensus validation of the FORTA (Fit FOR The Aged) List, a drug classification combining positive and negative labelling of drugs chronically prescribed to elderly patients. Two-round Delphi procedure was conducted involving 20 experts, 17 geriatric internists and 3 geriatric psychiatrists from Germany and Austria, evaluating the labels assigned to 190 substances or substance groups. The FORTA List now reflects a wider consensus among experts, increasing its validity for clinical use.


This systematic review aimed to examine family involvement in managing older patients’ medications across transitions of care. Twenty-three papers were included, comprising 17 qualitative studies, 5 quantitative studies and one mixed methods study. Families participated in information giving and receiving, decision making, managing medication complexity, and supportive interventions in regard to managing medications for older patients across transitions of care. However, health professionals tended not to acknowledge the medication activities performed by families.


This study aimed to estimate the frequency with which non-adherence to medication contributes to hospital admissions. The findings suggest that hospital admissions associated with non-adherence to medication are a common problem. This systematic review highlights important targets for intervention. Greater attention could be focused on adherence to medication during the hospital stay as part of an enhanced medication reconciliation process.
Pasina L et al. (2019) Need for de-prescribing in hospital elderly patients discharged with limited life expectancy: the REPOSI study, Medical Principles and Practice (author manuscript)

The main aim of this study was to describe the preventive and symptomatic drug treatments prescribed to patients discharged from internal medicine and geriatric wards, with limited life expectancy. The secondary aim was to describe the potentially severe drug-drug interactions. The findings suggest that hospital discharge is associated with small reductions in the use of commonly prescribed preventive medications in patients discharged with limited life expectancy. Cardiovascular drugs are the most frequent potentially avoidable preventive medications.

Sevilla-Sánchez D et al. (2018) Potentially inappropriate medication in palliative care patients according to STOPP-Frail criteria, European Geriatric Medicine, 9(4), pp.543-550 (author manuscript)

The aim of this study was to evaluate the prevalence of Potentially inappropriate medications (PIMs) according to specific tool ‘STOPP-Frail’, related factors with its existence and clinical consequences. It found that the presence of potentially inappropriate medication in end-of-life patients is high according to the STOPP-Frail tool. Although its presence does not affect morbidity and mortality in the current study setting, some related factors such as polypharmacy have been identified.


This systematic review examines the evidence of deprescribing as an effective strategy for improving medication adherence amongst older, community dwelling adults. A mixed methods review was undertaken, and found that there is insufficient evidence to show that deprescribing improves medication adherence. Only 13 studies (of 22) reported adherence of which only 5 were randomised controlled trials. Older people are particularly susceptible to non-adherence due to multi-morbidity associated with polypharmacy. Biopsychosocial factors including health literacy and multi-disciplinary team interventions influence adherence.


The purpose of the study is to identify and explore risk factors of serious adverse drug events (SADE) and SADE-related admissions in acutely hospitalized multimorbid older adults and assess whether these could have been prevented by adherence to the prescription tools Screening Tool of Older Persons’ Prescriptions (STOPP) and The Norwegian General Practice (NORGEP) criteria. The researchers conducted a cross-sectional study of acutely admitted patients to a medical department in a Norwegian regional hospital, and found found a high prevalence of SADE leading to hospitalization. Risk factors for SADE were high CIRS-G and low BMI. STOPP identified more SADEs than NORGEP, but adherence to the prescription tools could only to a limited degree prevent SADEs in this patient group.
People with Disabilities

Department of Health (2012) Transforming care: a national response to Winterbourne View Hospital (pdf)

The review has highlighted a widespread failure to design, commission and provide services which give people the support they need close to home, and which are in line with well established best practice. Equally, there was a failure to assess the quality of care or outcomes being delivered for the very high cost of places at Winterbourne View and other hospitals. This report sets out a programme of action to transform services so that people no longer live inappropriately in hospitals but are cared for in line with best practice, based on their individual needs, and that their wishes and those of their families are listened to and are at the heart of planning and delivering their care.

Duerden M et al. (2013) Polypharmacy and medicines optimisation: making it safe and sound, The King’s Fund (pdf)

This paper brings together data from a variety of sources to scope the issues involved and to outline some potential solutions. The paper makes clear that action is needed on several fronts, and must involve patients, doctors, nurses and pharmacists. Avoiding the risks of polypharmacy requires effective team working between clinicians, and in hospitals they argue that there is a role for a generalist clinician able to coordinate the care of patients with complex needs.


This article aims to raise awareness among pharmacists and others providing care and support to people with intellectual disabilities in hospital in relation to how pharmacists can contribute to safety. Medication is the main therapeutic intervention in this population. Research is needed to determine the role of pharmacists in improving health outcomes and reducing health inequalities in this vulnerable population group when they are admitted to general hospitals.

Flood B (2018) De-prescribing of psychotropic medications in the adult population with intellectual disabilities: a commentary, Pharmacy, 6(2), p.28 (open access)

Clinical experience of prescribers and pharmacists working with people with intellectual disabilities suggests that reducing or stopping psychotropic medication is not always straightforward. What is required is rational, rather than rationed, prescribing of psychotropic medications. Optimizing medication regimens in the adult population with intellectual disabilities is complicated but it is recognized that efforts to improve the current state of medication utilization are required for many individuals with intellectual disabilities. Pharmacists have a responsibility to include the person and/or their carer in their efforts to promote optimization of psychotropic medication use in environment in which the person lives.
**Nabhanizadeh A et al. (2019)** Effectiveness of medication reviews in identifying and reducing medication-related problems among people with intellectual disabilities: a systematic review, *Journal of Applied Research in Intellectual Disabilities* (open access)

This systematic review assessed the scientific evidence for the effectiveness of medication reviews in identifying and reducing medication-related problems (MRPs) in people with intellectual disabilities. The eight studies that fulfilled the inclusion criteria report that systematic medication reviews appear to assist in the identification and reduction of MRPs, however there is a lack of studies about the effect of medication reviews on identification and reduction of MRPs, especially health outcomes for people with intellectual disabilities.


The drug burden index (DBI) is a dose-related measure of anticholinergic and sedative drug exposure. This cross-sectional study described DBI in older adults with intellectual disabilities (ID) and the most frequently reported therapeutic classes contributing to DBI and examined associations between higher DBI scores and potential adverse effects as well as physical function. This is the first time DBI has been described in older adults with ID. Scores were much higher than those observed in the general population and higher scores were associated with higher dependence in Barthel index activities of daily living.


This review looks at the available evidence and found that antipsychotics can be reduced or discontinued in a significant proportion of adults who use them for challenging behaviour, though not always without adverse reactions. There is a group who display behavioural deterioration on antipsychotic reduction that prevents discontinuation, however predictors of poor response could not be reliably identified. Given the relative lack of data and methodological limitations of the available studies, the article cannot draw firm conclusions to inform a population level approach to this issue. Antipsychotic medication used for behaviour should be reviewed regularly and an individualised approach taken to treatment.

**Tyrer P et al. (2014)** Drug treatments in people with intellectual disability and challenging behaviour, *BMJ: British Medical Journal (Online)*, 349 (open access)

Drug treatment of challenging behaviour in people with intellectual disability should no longer be on the sidelines of evidence based medicine. If we are going to achieve parity of esteem for people with mental illness, we can no longer tolerate our ignorance on this subject. Quite apart from the deficiencies in evidence allowing dogma and opinion to rule, the cost of prescribing these drugs is enormous. If they truly are unnecessary, clinicians, pharmacists, service managers, and those who fund services for people with intellectual disability need to know, and soon.