Integrated Care Matters

Polypharmacy and Adherence

Knowledge Resource

About the information

The information provided in this document is intended to support the Integrated Care Matters webinar series.

We have selected evidence that is published open access, and provided links to the materials referenced. Some are identified as author repository copies, manuscripts, or other copies, which means the author has made a version of the otherwise paywalled publication available to the public. Other referenced sources are pdfs and websites that are available publicly.

If you found this resource useful and would like to use the Evidence Search and Summary Service (ESSS), please get in touch to discuss your needs: esss@iriss.org.uk

Developed in partnership

International Foundation for Integrated Care
IFIC Scotland

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**General guidelines**

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

This paper that 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.

**Mair A et al. (2017) Polypharmacy Management by 2030: a patient safety challenge. SIMPATHY Consortium.**

This report sets out the case for prioritising working together now to address inappropriate medication use over the next decade, to ensure the quality, economic and political systems are put in place to improve medication safety for patients.


Multimorbidity and its associated polypharmacy contribute to an increase in adverse drug events, hospitalizations, and healthcare spending. This study aimed to address: what exists regarding polypharmacy management in the European Union (EU); why programs were, or were not, developed; and, how identified initiatives were developed, implemented, and sustained.

**National Institute for Health and Care Excellence (2017) Multimorbidity and polypharmacy. NICE Key therapeutic topic KTT18.**

This guide aims to provide guidance on preventing inappropriate polypharmacy at every stage of the patient journey. The 7-Steps is a clear structure for both the initiation of new and the review of existing treatments, which has been updated to place a greater emphasis on 'what matters to the patient’?

**NHS Scotland (2018) Polypharmacy guidance - medicines review.**

This report sets out the case for prioritising working together now to address inappropriate medication use over the next decade, to ensure the quality, economic and political systems are put in place to improve medication safety for patients. Also available as an iOS and Android app.
Polypharmacy: getting our medicines right. Draft for Public Consultation.

This guidance uses the term broadly, to cover four main scenarios of problematic polypharmacy:

- The prescribing of medicines that are no longer clinically indicated or appropriate or optimised for that person
- Where the benefit of a particular medicine does not outweigh the harm
- Where the combination of multiple medicines has the potential to or is actually causing harm to the person, and
- Where the practicalities of using the medicines prescribed to a person have become unmanageable or are causing harm or distress.


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Older people


Polypharmacy is common among older people admitted to general medical units of Australian hospitals, with no clinically meaningful change to the number or classification (symptom control, prevention or both) of drugs made by treating physicians.

Jansen, J et al. (2016) Too much medicine in older people? Deprescribing through shared decision making. BMJ (online) 353(i2893).

This article draws together evidence from the psychology, communication, and decision making literature. Key messages include:

- Deprescribing is a process of planned and supervised tapering or ceasing of inappropriate medicines
- Shared decision making should be an integral part of the deprescribing process
- Many factors affect this process, including trust in clinicians’ advice, contradictory patient attitudes about medication, cognitive biases that lead to a preference for the status quo and positive information, and information processing difficulties.
Maher, RL et al. (2014) Clinical consequences of polypharmacy in elderly. 

International research shows that polypharmacy is common in older adults with the highest number of drugs taken by those residing in nursing homes. Nearly 50% of older adults take one or more medications that are not medically necessary.


This systematic review shows that almost one-half of nursing home residents are exposed to potentially inappropriate medications and suggests an increase prevalence over time. Effective interventions to optimize drug prescribing in nursing home facilities are, therefore, needed.

Patterson, SM et al. (2014). Interventions to improve the appropriate use of polypharmacy for older people. Cochrane database of systematic reviews (Online), 10, CD008165.

This review sought to determine which interventions, alone or in combination, are effective in improving the appropriate use of polypharmacy and reducing medication-related problems in older people.


Frailty, multimorbidity, obesity, and decreased physical as well as mental health status are risk factors for excessive polypharmacy. Sex, educational level, and smoking apparently do not seem to be related to excessive polypharmacy.


Single disease state led evidence-based guidelines do not provide sufficient coverage of issues of multimorbidities, with the cumulative impact of recommendations often resulting in overwhelming medicines burden. Inappropriate polypharmacy increases the likelihood of adverse drug events, drug interactions and non-adherence.
Urfer, M et al. (2016). *Intervention to improve appropriate prescribing and reduce polypharmacy in elderly patients admitted to an internal medicine unit*. *Plos One*, 11 (11), e0166359.

Polypharmacy and inappropriate medication prescriptions are associated with increased morbidity and mortality. Most interventions proposed to improve appropriate prescribing are time and resource intensive and therefore hardly applicable in daily clinical practice. The introduction of an easy-to-use 5-point checklist aimed at supporting therapeutic reasoning of physicians on internal medicine wards significantly reduced the risk of prescriptions of inappropriate medications at discharge.


Polypharmacy in several cases is deemed necessary and elderly patients are prone to this phenomenon. The objective of this study was to identify the prevalence and the predictors of polypharmacy among consecutively unplanned admissions of patients aged ≥65 years. Polypharmacy mainly was linked to cardiovascular diseases. If deprescribing is not feasible, physicians must oversee those patients in order to recognise early, possible drug reactions.