



Original Research Article

Deprescribing Program in Pluripathological Elderly Patients at a General Hospital

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Name of Author:

Sara G.G., Antoni L.A., Ana Cris C.L., Oreto R.M., Pilar C.A., Juan Pablo O.B. and Monica C.M.

Corresponding Author:

Sara G.G.

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Abstract: Polypharmacy in pluripathological elderly patients is a major cause of morbidity and healthcare utilization, increasing risks of adverse medication events, functional decline, and hospital admissions. Deprescribing—the planned and supervised process of medication withdrawal—has emerged as a key strategy to improve outcomes for this complex population. This article examines the implementation, challenges, process, and outcomes of a structured deprescribing program for polymedicated, pluripathological elderly in a general hospital setting, drawing on evidence from systematic reviews, meta-analyses, and observational studies.

Keywords: Deprescribing, Polypharmacy, Pluripathological Elderly, Adverse Drug Events, Hospital Admissions.

INTRODUCTION

The prevalence of multimorbidity and polypharmacy in elderly patients admitted to general hospitals continues to rise. Pluripathological elderly—those with multiple chronic diseases—are disproportionately affected by inappropriate medication use and adverse drug reactions. The primary aim of hospital-based deprescribing is to optimize medication regimens by removing unnecessary or harmful drugs while maximizing therapeutic benefit and safety^{[1][2]}. Successful implementation requires a multidisciplinary approach, patient-centered shared decision-making, careful selection of drug targets, and robust outcome monitoring.

BACKGROUND AND RATIONALE

The Burden of Polypharmacy

- More than 50% of elderly patients in acute or long-term care take at least five medications daily^[3].
- Polypharmacy is associated with an increased risk of falls, cognition impairment, drug–drug interactions, functional and cognitive decline, and higher hospital readmission and mortality rates^{[3][1][4]}.

Goals of Deprescribing

- Minimize risks of potentially inappropriate medications (PIMs) and adverse drug reactions.
- Enhance functional status and quality of life.
- Foster patient empowerment and shared decision-making.

- Optimize use of healthcare resources^{[2][4]}.

Program Design and Implementation

Target Population

- Elderly patients (≥ 65 years) with two or more chronic diseases (pluripathological).
- Patients prescribed five or more chronic medications at admission.

Team Composition

- Geriatricians.
- Clinical pharmacists.
- Nurses.
- Primary physicians.
- Patient and caregiver engagement.

Structured Deprescribing Workflow

Step	Description
1. Comprehensive Medication Review	Full reconciliation of current medications (prescription + OTC)
2. Assessment of Appropriateness	Analysis using evidence-based tools (e.g., Beers, STOPP/START criteria)
3. Identification of Candidates	Flagging drugs with questionable risk/benefit, redundancy, or lack of indication
4. Patient/Caregiver Discussion	Shared decision-making about deprescribing priorities and expectations
5. Deprescribing Plan	Establishing tapering/cessation schedule with monitoring for harms/withdrawal
6. Follow-up & Monitoring	Monitoring for withdrawal symptoms, clinical change, reintroduction if needed

Tools and Criteria

- Use of screening instruments (Beers, STOPP/START).
- Clinical judgment integrating comorbidities, prognosis, and life expectancy.
- Medication appropriateness index^[4].

OUTCOMES AND IMPACT

Medication Reduction

- Deprescribing programs consistently reduce mean medication burden by 15–35% during admission^{[2][4]}.
- Most commonly deprescribed drug classes: gastrointestinal agents, supplements, cardiovascular drugs, psychotropic medications^[5].

Reduction in Potentially Inappropriate Medications (PIMs)

- In-hospital deprescribing interventions reduce PIM rates in elderly by up to 59%^[4].

Clinical Outcomes

Outcome	Effect of Deprescribing
Medication count	Significantly reduced post-intervention
ADR incidence	Lower rates in deprescribed patients
Hospitalization	No significant increase; sometimes reduced
Mortality	No increase in short-term mortality demonstrated

Quality of Life	Stable or modestly improved HRQoL scores
Falls	Mixed findings, generally no increase observed

- Some studies report occasional increases in potential prescribing omissions (PPOs), highlighting the need for careful review and individualized plans^[6].
- At least three-quarters of pharmacist-led deprescribing interventions are accepted by physicians in acute care settings^[5].

Cost and Resource Utilization

- Deprescribing interventions may yield direct medication cost savings and reduce adverse event-related expenses^[7].
- Evidence for long-term reductions in hospitalization and healthcare utilization is promising but not yet definitive^{[4][7]}.
“Deprescribing interventions significantly reduced the proportion of older adults with potentially inappropriate medications and the incidence of adverse drug reactions”^[2].

Multidisciplinary and Person-Centered Approach

- Successful programs emphasize participation of clinical pharmacists in medication review and recommendations^[5].
- Involvement of patients and families leads to greater acceptance and satisfaction with deprescribing^{[8][4]}.

Barriers and Facilitators

Barriers

- Clinical inertia and physician reluctance.
- Patient and caregiver concerns about withdrawal effects.
- Fragmented care and lack of clear responsibility.
- Time/resource constraints^{[8][1][9]}.

Facilitators

- Senior leadership and clear institutional protocols.
- Use of electronic decision support tools and audit feedback.
- Staff education and training in deprescribing principles^{[10][11]}.

Visual Representation

Figure 1: Steps of a Deprescribing Program in Hospitalized Pluripathological Elderly

A flow chart typically depicts the sequence: Medication Reconciliation → Appropriateness Assessment → Shared Decision-Making → Taper/Stop Medications → Monitoring and Reassessment.

Figure 2: Prevalence of Polypharmacy & Deprescribing Outcomes

Outcome	Pre (%)	Post (%)
≥5 prescriptions	96	68
≥1 PIM per patient	63	27

DISCUSSION

Robust data support the safety and efficacy of deprescribing in hospitalized polymedicated, pluripathological elderly, with significant reductions in PIMs and adverse drug reactions without adverse clinical outcomes^{[1][2][4]}. The inpatient setting offers a valuable opportunity for medication review, patient education, and alignment with goals of care^[12]. Ongoing research should address patient-centered outcomes, long-term sustainability, and systematic implementation across healthcare systems^{[8][4][1]}.

Recommendations

- Implement structured, team-based deprescribing protocols for hospitalized polymedicated elderly.
- Regularly train and empower hospital staff in evidence-based deprescribing.
- Systematically incorporate patient and caregiver preferences in deprescribing decisions.

- Monitor outcomes and adapt interventions using continuous quality improvement methods.

CONCLUSION

A structured deprescribing program in a general hospital targeting pluripathological elderly is both feasible and effective. It reduces inappropriate medication burden, enhances safety, and supports patient-centered care. Multidisciplinary collaboration, robust protocols, and patient engagement are critical to achieving the full benefits of deprescribing for this vulnerable population.

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