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PHARMACIST-LED DEPRESCRIBING FOR HOSPITALIZED OLDER ADULTS: CURRENT EVIDENCE, IMPLEMENTATION BARRIERS, AND FUTURE DIRECTIONS

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ABSTRACT

Background: Hospital admission creates an opportunity to reassess medicines in older adults whose frailty, multimorbidity, and acute illness may change the balance of benefit and harm. **Objective:** To summarise evidence on pharmacist-led deprescribing in hospitalised older adults and describe barriers to implementation. **Methods:** PubMed was searched through 21 June 2026. Of 115 records, 29 full-text publications were included: 18 intervention or service-evaluation reports and 11 qualitative, implementation, or tool-development reports. Owing to heterogeneity, findings were synthesised narratively. **Results:** Pharmacist involvement was associated with medication discontinuation, fewer potentially inappropriate medicines, reduced anticholinergic or sedative burden, and frequent acceptance of recommendations. Evidence for readmission, mortality, quality of life, and long-term sustainability remained limited. Common barriers were unclear responsibility, limited pharmacist capacity, patient concerns, fragmented records, and weak follow-up. **Conclusion:** Pharmacist-led deprescribing can improve medication appropriateness, but sustainable services require targeted patient selection, shared decisions, multidisciplinary accountability, monitoring, and reliable transfer of care.

KEYWORDS: Clinical pharmacy; Deprescribing; Hospitalization; Older adults; Polypharmacy.

INTRODUCTION

Hospital admission often exposes medication-related risks that are less apparent during stable outpatient care. Older patients may arrive with multimorbidity, frailty, acute physiological changes, and long medicine lists; together, these factors increase the likelihood of adverse reactions, interactions, falls, delirium, hypoglycaemia, functional decline, and poor adherence. Changes in renal function, oral intake, mobility, cognition, prognosis, or goals of care can also make a previously reasonable prescription unnecessary or unsafe.[1-3]

Deprescribing is a supervised decision to stop, taper, or reduce a medicine when its expected harm or treatment burden is greater than its likely benefit for that patient. The purpose is not simply to lower the medicine count. A safe decision requires confirmation of the indication, review of current benefit and risk, consideration of withdrawal or disease recurrence, discussion with the patient and clinical team, and follow-up after the change. Hospital care provides access to clinical records, laboratory results, multidisciplinary assessment, and direct observation during treatment changes.

Pharmacists can contribute at each stage of this process. They verify medication histories, identify potentially inappropriate medicines (PIMs), assess cumulative drug burden, recognise interactions and prescribing cascades, suggest tapering schedules, discuss recommendations with prescribers, counsel patients and carers, and monitor for withdrawal-related problems. Pharmacist-led or pharmacist-integrated services have been reported in acute medicine, geriatrics, rehabilitation, surgery, cardiovascular care, hip-fracture pathways, and discharge services.[4-7]

Despite growing interest, deprescribing is not consistently embedded in hospital practice. Published

services differ in patient selection, pharmacist authority, target medicines, decision-support tools, follow-up, and outcome measurement. Improvements in prescribing quality are reported more often than effects on readmission, mortality, quality of life, or long-term continuation. Implementation studies repeatedly identify limited time, unclear ownership, professional hierarchy, patient concerns, and fragmented transitions as obstacles.[8-10] Recent reviews were similarly cautious: one inpatient meta-analysis found a small reduction in readmission without a clear mortality benefit, whereas a pharmacist-led meta-analysis across mixed settings found no significant pooled effect on medicine count or effective deprescribing and reported substantial heterogeneity.[11,12]

This review examines the outcomes of pharmacist-led deprescribing in hospitalised older adults, the components used in published interventions, the barriers that affect routine delivery, and the arrangements needed to maintain changes after discharge.

MATERIALS AND METHODS

Review design and search strategy

A structured narrative design was used to examine effectiveness, safety, implementation, and continuity-of-care evidence. PubMed/MEDLINE was searched on 21 June 2026 without a date restriction. The strategy combined MeSH terms for Deprescriptions, Pharmacists, Inpatients, Hospitalization, and Aged with title/abstract terms for deprescribing, pharmacist-led care, acute or inpatient care, and older people. Appendix I contains the complete search string.

The search yielded 115 records. The sole author screened titles and abstracts, assessed potentially eligible full texts, and included 29 publications in the principal synthesis. Two recent systematic reviews were used only to place the findings in context and were not counted among the 29 included reports.[11,12] Meta-analysis was not attempted because the review question and included study designs were deliberately broad.

Eligibility criteria

Eligible publications involved adults generally aged 60 years or older, or a clearly defined geriatric population, and were set in hospital wards, acute or emergency care, inpatient rehabilitation, or a discharge-linked service initiated in hospital. A direct pharmacist role in identifying, recommending, implementing, communicating, or monitoring deprescribing was required. Reports also had to provide medication, clinical, safety, patient-centred, or implementation outcomes.

Primary-care, community-pharmacy, residential-care, and nursing-home studies were excluded. Medication-reconciliation studies were retained only when medication reduction or deprescribing was an explicit part of the service. Editorials, protocols without results, conference abstracts, and reports without an identifiable pharmacist role were also excluded. Only English-language full texts available to the author were considered.

Data extraction and synthesis

For each publication, information was recorded on country, setting, design, sample, pharmacist role, deprescribing method, target medicines, recommendation acceptance, medication outcomes, clinical outcomes, safety, implementation barriers, and continuity after discharge. The synthesis was organised around medication appropriateness, targeted drug classes or risks, clinical and patient-centred outcomes, interprofessional decision-making, implementation, and transitions of care.

The final set comprised 18 intervention, service-evaluation, or feasibility reports and 11 publications focused mainly on implementation, professional or patient perspectives, or tool development. The two INFAR papers were treated as reports from one 319-patient cohort, and linked Drug Burden Index (DBI) stewardship papers were considered phases of one wider programme. The 29 publications therefore represented about 27 distinct datasets or programme phases.

RESULTS AND DISCUSSION

Characteristics of the evidence base

The included literature was published from 2017 to 2026 and covered hospitals in the United Kingdom, Singapore, Italy, Canada, Japan, Australia, Spain, Brazil, China, France, and the United States. Settings ranged from acute and general medicine to geriatric wards, rehabilitation, surgery, cardiovascular care, orthopaedic and hip-fracture pathways, and emergency departments. Study designs included observational cohorts, before-and-after evaluations, quality-improvement projects, feasibility studies, mixed-methods work, qualitative research, and consensus or tool-development studies.

Medication review was usually combined with one or more additional components: explicit PIM criteria, deprescribing algorithms, DBI or anticholinergic-burden assessment, computerised decision support, direct pharmacist-prescriber discussion, patient education, tapering instructions, discharge documentation, or follow-up. Tables 1 and 2 summarise the principal intervention evidence.

Table 1: General and multidisciplinary pharmacist-led deprescribing interventions.

Study and setting	Design/sample	Pharmacist-led component	Principal findings
Marvin et al., UK acute hospital[1]	100 patients aged >70 years admitted after a fall	Review of fall-risk medicines	Medication review occurred in 86%; 59 of 697 medicines were stopped, with fewer fall-risk medicines per patient.
Cheong et al., Singapore tertiary hospital[4]	503 pharmacist deprescribing interventions	Pharmacist-initiated recommendations	77.9% were accepted; excessive duration, unclear indication, and excessive dose were frequent reasons.
Carr et al., Canadian rehabilitation hospital[13]	Quality-improvement study; 12 benzodiazepine users	Structured review, education, and counselling	Eleven began deprescribing; six stopped and five reduced dose by >50%. Withdrawal symptoms required monitoring.
Chiarelli et al., Italian medical wards[5]	Prospective intervention; 90 patients aged >=75 years	Medication recognition/reconciliation plus computerized support	455 drug-related problems were identified; about two-thirds of proposed changes were implemented.
Kimura et al., Japanese university hospital[2]	Prospective observational study; 544 inpatients	STOPP-based detection and deprescribing algorithm	172 of 189 suggested changes were implemented; medication reduction occurred in 56.8% of the suggested group.
Kose et al., Japanese rehabilitation setting[14]	Retrospective cohort; 448 geriatric patients	Pharmacist-led deprescribing during rehabilitation	Deprescribing was independently associated with greater functional gain and fewer high-risk medicines.
Magallon Martinez et al., Spanish complex-care unit[16]	Prospective multidisciplinary study; 621 patients	Daily checklist using explicit deprescribing criteria	Forty-two recommendations had 61.9% acceptance; medication numbers decreased significantly.
Basger et al., Australian discharge service[17]	Implementation study; 100 patients	Patient-centred review, education, and written recommendations	95% of recommendations were actioned by patients; 77% were implemented and 206 regular medicines were stopped.

Table 2: Targeted stewardship and implementation-focused interventions.

Study and setting	Design/sample	Pharmacist-led component	Principal findings
Masnoon and Fujita et al., Australian acute aged care[6,15]	Linked stewardship studies; 256 reviewed and 457 hospitalizations	Electronic Drug Burden Index and pharmacist stewardship	82.9% acceptance; stopping or reducing a burden-contributing medicine increased from 29.9% to 43.1%.
Van der Linden et al., Belgian geriatric wards[18]	Before-after study; 173 patients	Education, tapering, support, and transitional care	Hypnotic discontinuation at one month was 37.7% versus 21.9%, without poorer sleep quality.
Delvallee et al., French geriatric care[19]	Prospective two-period study; 87 relevant alerts	Pharmacist-reviewed decision-support alerts	Anticholinergic load fell more during intervention; 52.8% of pharmacist recommendations were accepted.
Gama et al., Brazilian cardiovascular hospital[3,20]	Before-after cohort; 319 patients and secondary analysis	Clinical pharmacist medication review	Potentially inappropriate medicines fell from 291 to 28; high anticholinergic burden fell from 40.4% to 22.6%.
Hu et al., Chinese hip-fracture service[21]	Comparative study; 106 patients aged >=75 years	Multidisciplinary pharmacist-led review	Medication and inappropriate-medicine counts and reported adverse reactions were lower; allocation was non-random.
Alvarez et al., US teaching hospital[22]	Pre-post geriatrics pilot	Review of inappropriate rapid-acting insulin	Inappropriate rapid-acting insulin use fell by 66% over seven months.

Scott et al., four UK hospitals[23]	Mixed-methods feasibility study; 318 patients	Behaviour-change package for pharmacists and geriatricians	Implementation was feasible, but ownership of action plans and dashboards delayed delivery.
Dearing et al., four Canadian wards[7]	Implementation study; 40 intervention and 148 controls	Web-based Drug Burden Index review	Clinically meaningful burden reduction occurred in 23% versus 6%; no withdrawal events; mean pharmacist time was 68 minutes.

Effects on medication appropriateness and medication burden

Across hospital settings, pharmacists frequently translated medication review into prescribing changes. Among patients admitted after falls, pharmacist participation was linked to fewer fall-risk medicines.[1] In Singapore, physicians accepted 392 of 503 pharmacist-initiated deprescribing recommendations; excessive duration, absent indication, and high dose were common reasons for intervention.[4] In an Italian ward study, 455 drug-related problems were identified in 90 older inpatients, and roughly two-thirds of proposed changes were implemented.[5]

Larger reductions were reported when reviews used explicit criteria or algorithms. In Japan, 172 of 189 proposed PIM changes were implemented, and medicine reduction was more common after a pharmacist recommendation than in comparison groups.[2] In the INFAR cohort, PIMs fell from 291 at admission to 28 at discharge and the mean medicine count decreased from 9.8 to 6.5.[3] A multidisciplinary complex-care service also reported fewer medicines, although deprescribing was only one part of a broader reconciliation service.[16]

These results suggest that review is most likely to change treatment when pharmacists can apply explicit criteria and discuss a patient-specific plan directly with prescribers. Medicine count alone is an incomplete endpoint, because optimisation may also require correction of an important prescribing omission.[3]

Drug-class and risk-targeted deprescribing

Some of the clearest effects came from services that targeted recognised geriatric risks. Australian DBI stewardship focused on cumulative exposure to anticholinergic and sedative medicines. Pharmacists issued 170 recommendations for 117 of 256 reviewed patients, and prescribers agreed with 82.9%; 44 changes were made during admission and another 81 were documented for action after discharge.[6] In the linked controlled study, stopping or reducing at least one DBI medicine rose from 29.9% with usual care to 43.1% during stewardship, with a particularly marked increase in opioid deprescribing.[15]

A French decision-support service achieved a greater fall in anticholinergic load than routine care, although clinicians accepted 52.8% of pharmacist interventions.[19] In the INFAR secondary analysis, high anticholinergic burden declined from 40.4% at admission to 22.6% at discharge.[20] A Canadian DBI programme produced a clinically meaningful reduction in 23% of intervention participants compared with 6% of controls and reported no withdrawal events, but the pharmacist spent an average of 68 minutes per patient.[7]

Drug-specific pathways produced similar process improvements. A multicomponent intervention increased hypnotic discontinuation one month after discharge without worsening measured sleep quality.[18] In a small rehabilitation project, nearly all participants stopped benzodiazepines or reduced the dose by more than half, although anxiety and other withdrawal symptoms showed why tapering and monitoring are necessary.[13] Pharmacist review in a geriatric service also reduced inappropriate rapid-acting insulin use by 66%.[22]

Clinical, safety, and patient-centred outcomes

Clinical outcomes were reported less consistently than prescribing outcomes. In older patients with hip fractures, pharmacist-led review was associated with fewer medicines, fewer PIMs, and a lower reported incidence of adverse drug reactions; however, the non-randomised comparison and allocation according to acceptance of recommendations limit causal interpretation.[21] In rehabilitation, deprescribing was independently associated with greater improvement in Functional Independence Measure scores.[14]

Available safety findings were mostly reassuring. No adverse drug withdrawal events were reported in the Canadian DBI implementation group,[7] and the Belgian hypnotic intervention did not worsen sleep quality.[18] By contrast, several participants in the benzodiazepine project experienced withdrawal-related symptoms, reinforcing the need for individual tapering plans and clinical support.[13]

Few studies were designed to assess readmission, mortality, falls, quality of life, or long-term function. Kimura et al.[2] found no significant difference in 30- or 90-day readmission despite clear medication changes. The CHARMER feasibility study chose 90-day readmission over quality of life as a practical primary outcome because recruitment and completion of patient-reported measures were difficult.[23] Current evidence therefore supports feasibility and medication-safety improvement more strongly than a consistent effect on major clinical endpoints.

Acceptance and interprofessional decision-making

Acceptance differed across interventions. It ranged from 52.8% for pharmacist responses to anticholinergic alerts

to 91.0% for proposed PIM changes in the Japanese prospective study.[2,19] The corresponding rates were 77.9% in the Singapore inpatient study and 82.9% in the Australian DBI programme.[4,6] These figures show substantial pharmacist influence, but they also confirm that identifying a deprescribing opportunity does not ensure implementation.

Recommendations concerning gastrointestinal medicines or supplements were accepted more readily than changes to medicines viewed as central to chronic disease management.[4] Services tended to work better when pharmacists spoke directly with prescribers, explained the patient-specific rationale, supplied tapering or monitoring instructions, and linked the recommendation to an observable risk such as falls, anticholinergic burden, hypoglycaemia, or sedation. Consensus work also favoured face-to-face communication and a clear escalation route when pharmacists lacked prescribing authority.[24]

Even when pharmacists lead case finding and planning, the final decision remains multidisciplinary. Pharmacists contribute medication expertise and continuity; prescribers consider diagnosis and wider treatment goals; nurses observe symptoms and functional change; and patients or carers determine whether the proposed plan is acceptable and practical.

Implementation barriers and enabling strategies

Barriers appeared at professional, patient, organisational, and system levels. Clinicians in six Australian hospitals were uncertain whether an admitting team should alter long-term treatment, and junior doctors and pharmacists sometimes lacked confidence to challenge senior prescribing. Patient engagement was also limited.[8] A separate implementation framework identified attachment to medicines, fear that stopping treatment was riskier than continuing it, pharmacist workload, low organisational priority, and weak reinforcement as recurrent problems.[9]

Time pressure and fragmented workflow were repeatedly described. Doctors reported incomplete records, reluctance to change treatment started by another specialist, and difficulty arranging follow-up.[25] Pharmacists and other clinicians described competing ward duties and limited confidence in conversations about benzodiazepines and sedative-hypnotics.[10] In surgical wards, review was often triggered by a problem rather than performed proactively, and deprescribing was viewed as a lower priority unless supported by geriatric, pharmacy, and multidisciplinary input.[27]

Patient willingness could not be predicted reliably from routine characteristics. In one orthopaedic cohort, 39.7% of eligible patients declined the intervention, but refusal was not associated with age, sex, comorbidity, medicine count, or PIM burden.[26] Qualitative studies described fear of withdrawal or symptom recurrence, disagreement with changing a long-standing medicine, and a preference to wait for the usual outpatient clinician.[10,28] Individual discussion is therefore preferable to assuming that a patient will or will not accept deprescribing.

Digital tools were useful only when they fitted clinical workflow. Clinicians preferred evidence-based, non-interruptive support that remained available throughout admission rather than isolated, poorly timed alerts.[8] DBI and anticholinergic-load programmes were more actionable when a pharmacist reviewed the electronic signal, selected priority patients, and discussed recommendations with the team.[15,19] Lack of record integration and protected pharmacist time were direct obstacles in the Canadian implementation study.[7]

Table 3: Recurrent implementation barriers and practical responses.

Barrier	Evidence synthesis	Practical response
Unclear ownership and low priority	Clinicians may view long-term medication changes as outside the admitting team's role; deprescribing competes with acute-care tasks.	Define responsibility in hospital policy; assign a clinical owner; include deprescribing in ward-round, geriatric, and medication-safety objectives.
Limited pharmacist time and capacity	Comprehensive interventions can require substantial pharmacist time, and ward coverage may prioritize reconciliation and supply tasks.	Use risk stratification; provide protected clinical pharmacy time; develop stewardship or referral models for high-risk patients.
Knowledge and confidence gaps	Clinicians report uncertainty about tapering, withdrawal, evidence, and how to discuss deprescribing.	Provide drug-specific algorithms, case-based education, specialist access, and competency-based training.
Professional hierarchy and fragmented teamwork	Junior clinicians and pharmacists may hesitate to challenge senior or specialty prescribing.	Use scheduled interprofessional huddles, face-to-face recommendations, collaborative prescribing, and documented escalation pathways.
Patient attachment, anxiety, and limited engagement	Patients may fear symptom recurrence or prefer decisions by their usual clinician; willingness cannot be inferred from demographics.	Use shared decision-making, plain-language education, individualized benefit-harm explanations, and negotiated tapering plans.

Fragmented records and alert fatigue	Incomplete medication histories and poorly integrated alerts reduce trust and actionability.	Integrate non-interruptive risk scores with the medication record; require pharmacist validation and prioritization of alerts.
Weak post-discharge continuity	Inpatient changes may be reversed or recommendations may not be actioned without clear communication and follow-up.	Document indication, reason, taper, monitoring, contingency plan, and responsible clinician; engage community pharmacists and primary care.
Inconsistent outcome measurement	Studies often report medication changes but not sustainability, patient outcomes, or resource use.	Use a core outcome set covering medication appropriateness, withdrawal harm, clinical outcomes, patient experience, workload, and cost.

Transitions of care and sustainability

An inpatient decision has limited value if it is unintentionally reversed or never reviewed after discharge. Several programmes deferred a sizeable proportion of recommendations to outpatient care. In the Australian DBI service, 81 proposed changes appeared in discharge summaries, whereas 44 were made on inpatient charts.[6] Deferral may be reasonable when tapering or stable follow-up is required, but it also transfers responsibility and creates another point at which the plan may be lost.

Continuity improved when patients and usual-care clinicians received a clear plan. In one discharge review service, patients acted on 95% of pharmacist recommendations; 77% of those actions were implemented, and 206 regular medicines were deprescribed.[17] A 2026 qualitative study found that 85% of inpatient decisions remained in place and 79% of post-discharge recommendations had been actioned after one month. Continued implementation depended on acceptance by patients and clinicians, understanding of the plan, and a supportive care environment.[29]

Written information can support, but not replace, communication. Consumer leaflets covering antipsychotics, benzodiazepines or Z-drugs, and proton pump inhibitors achieved good comprehension and usability ratings, although their effect on clinical outcomes was not tested.[30] Studies in emergency and general hospital care also stressed accurate medication histories, coordination with primary care, and explicit documentation of the reason and plan for deprescribing.[28,31]

Overall interpretation

The most consistent contribution of pharmacist-led deprescribing was better medication appropriateness. Across different countries and clinical services, pharmacists identified PIMs, obtained frequent prescriber agreement, reduced high-risk drug burden, and supported medicine-specific withdrawal. These process outcomes were reported across varied designs, although the intensity and organisation of services differed considerably.

The findings should not be read as support for reducing every older patient's medicine count. Effective programmes focused on treatment that no longer matched the current indication, risk, function, prognosis, or patient priorities. Structured criteria were used alongside clinical judgement and team discussion. This matters because a numerical drive to reduce polypharmacy can also create undertreatment. Deprescribing is better understood as one part of medicines optimisation.

Why medication outcomes are more consistent than clinical outcomes

Most studies were powered for outcomes that can change during an admission, such as recommendation acceptance, medicine discontinuation, PIM count, DBI score, or anticholinergic burden. Mortality, readmission, falls, and quality of life are influenced by frailty, disease severity, indication, follow-up duration, post-discharge adherence, and the medicine withdrawn. Small single-centre and before-and-after studies are therefore poorly suited to detect reliable differences in these endpoints. In pooled evidence, Carollo et al.[11] reported a small reduction in readmission without a mortality benefit, whereas Tesfaye et al.[12] found no significant pooled effect on total medicine count or effective deprescribing across mixed settings and noted substantial heterogeneity.

There were nevertheless clinically relevant signals: fewer reported adverse drug reactions after hip fracture, better functional recovery in rehabilitation, less inappropriate insulin exposure, no withdrawal events in one DBI programme, and preserved sleep quality after hypnotic discontinuation.[7,14,18,21,22] Larger controlled studies with standard outcomes and longer follow-up are needed to determine whether these signals are reproducible.

The pharmacist's role within a multidisciplinary model

The evidence favours a pharmacist-led, not pharmacist-only, model. Pharmacists are well placed to find high-risk patients, verify histories, assess PIMs and interactions, review benefit and harm, propose tapering and monitoring, and communicate across settings. Prescribers retain diagnostic and therapeutic responsibility; nurses observe symptoms and function; specialists help with uncertainty; and patients or carers contribute treatment experience, preferences, and practical constraints.

Clear ownership is essential. When responsibility is vague, deprescribing is easily displaced by acute care. Hospital policy should specify who starts the review, who can stop or taper treatment, how disagreement is escalated, who monitors withdrawal or recurrence, and who takes responsibility after discharge. Pharmacist prescribing may shorten the pathway where it is permitted, but it does not remove the need for shared clinical judgement.

Decision support, risk stratification, and stewardship

Electronic scores and alerts can reveal cumulative medication burden, but they do not make a deprescribing decision. In DBI and anticholinergic-load programmes, better results were seen when digital risk information was combined with education, patient resources, direct clinician discussion, and a pharmacist who converted an alert into a patient-specific recommendation.[6,15,19]

Prioritisation is also necessary because comprehensive review can be time-intensive. The Canadian DBI intervention required a mean of 68 pharmacist minutes per patient.[7] Practical referral criteria may include recent falls or delirium, high DBI or anticholinergic burden, multiple PIMs, suspected adverse reactions, rapid decline, limited prognosis, a high-risk transition, or a medicine without a current indication. Such targeting can protect review quality without screening every inpatient indiscriminately.

Patient engagement and communication

Patient agreement is part of the intervention rather than a final formality. Stopping a long-standing medicine may be interpreted as withdrawal of care or may conflict with a patient's belief that the treatment remains necessary. The discussion should cover the original indication, why benefit and harm have changed, how the dose will be reduced, which symptoms require attention, and what action will be taken if symptoms return. Written material is useful only when it supports a genuine conversation.

Some patients will prefer to wait until they can speak with a familiar clinician. That preference should shape the plan, although urgent risk may still require action during admission. Options include a cautious inpatient taper, a clearly documented recommendation for later review, or direct communication with primary care or a community pharmacist. Johnstone et al.[29] found that acceptance, understanding, and a supportive environment were central to continuity.

Implications for hospital practice

A workable hospital pathway can be described in six steps: identify patients at higher risk; verify the complete medication history and current indication; rank medicines by likely harm, expected benefit, withdrawal risk, patient priorities, and feasibility; agree and document the plan with the patient and team; implement tapering and monitoring; and transfer the rationale, progress, contingency plan, and named follow-up responsibility at discharge.

Evaluation should reward appropriate decisions rather than the number of medicines stopped. Useful measures include the proportion of eligible patients reviewed, acceptance and implementation of recommendations, changes in PIM or DBI burden, withdrawal-related harm, patient understanding, persistence after discharge, readmission, function, pharmacist time, and cost. A dashboard should support improvement without encouraging withdrawal of beneficial treatment.

Strengths and limitations

This review brings together effectiveness, safety, qualitative, digital, and transitions-of-care evidence published through June 2026 across several hospital settings. Linked reports were identified and treated as related programme phases rather than independent cohorts, reducing the risk of double counting.

The review also has important limitations. Only PubMed/MEDLINE and English-language full texts available to the author were searched, so relevant work may have been missed. Screening and extraction were performed by one author, and no formal risk-of-bias tool or meta-analysis was used. Many included reports were single-centre, non-randomised, or focused on process outcomes, and definitions of older age, deprescribing, PIMs, acceptance, and implementation varied. Numerical findings should therefore be viewed as evidence of direction and feasibility, not as a pooled estimate of treatment effect.

Future directions

Future studies should use adequately powered multicentre pragmatic or cluster-randomised designs that fit routine workflow. A common outcome set would make services easier to compare and should cover medication appropriateness, the number and type of medicines stopped, withdrawal events, adverse drug reactions, falls, delirium, readmission, mortality, function, quality of life, patient experience, persistence after discharge, workload, and cost-effectiveness.

Digital studies should evaluate interoperable and explainable decision support linked to current medication lists, clinical parameters, and patient goals. Passive alerts should be compared with pharmacist stewardship, and referral thresholds, alert burden, and equity should be reported. Implementation research should also examine task delegation, pharmacist prescribing authority, and service delivery in hospitals with limited geriatric or clinical pharmacy capacity.

Transitions of care deserve specific study. Useful models may include structured discharge templates, direct electronic communication, scheduled pharmacist follow-up, and shared plans with primary care and community pharmacy. Research should include people with different levels of health literacy, cognitive impairment, carers,

surgical and emergency populations, and low-resource health systems. The aim is not merely to stop medicines, but to preserve benefit, reduce avoidable harm, and maintain an understandable plan across care settings.

CONCLUSION

Pharmacist-led deprescribing can improve medication appropriateness in hospitalised older adults, particularly by reducing PIMs, medicine burden, anticholinergic or sedative exposure, and inappropriate use of selected drug classes. Prescriber acceptance is often high, but evidence for major clinical outcomes remains less certain. Routine delivery requires clear ownership, protected pharmacist time, multidisciplinary working, patient-centred discussion, useful decision support, monitoring for withdrawal or recurrence, and reliable transfer of responsibility after discharge.

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CONFLICT OF INTEREST

The author declares that there is no conflict of interest.

AUTHOR CONTRIBUTION

Dr. Shubham Kumar Vohra conceived the review, designed and performed the literature search, screened and interpreted the evidence, drafted and critically revised the manuscript, approved the final version, and accepts responsibility for the work.

ETHICAL APPROVAL

Not applicable. This review used information from published studies and did not directly involve human participants or animals.

DATA AVAILABILITY

No new patient-level dataset was created. The evidence discussed in this review is available in the cited publications.

ABBREVIATIONS

ADR: adverse drug reaction; CDSS: clinical decision support system; CNS: central nervous system; DBI: Drug Burden Index; EHR/eMR: electronic health or medical record; PIM: potentially inappropriate medication; QoL: quality of life; STOPP: Screening Tool of Older Persons' Prescriptions; TDF: Theoretical Domains Framework.

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APPENDIX I: PUBMED SEARCH STRATEGY

("Deprescriptions"[Mesh] OR deprescrib*[Title/Abstract] OR "medication withdrawal"[Title/Abstract] OR "drug withdrawal"[Title/Abstract] OR "medication discontinuation"[Title/Abstract]) AND ("Pharmacists"[Mesh] OR pharmacist*[Title/Abstract] OR "pharmacist-led"[Title/Abstract] OR "pharmacy-led"[Title/Abstract]) AND ("Inpatients"[Mesh] OR "Hospitalization"[Mesh] OR inpatient*[Title/Abstract] OR hospitali*[Title/Abstract] OR "acute care"[Title/Abstract] OR "hospital ward"[Title/Abstract] OR "hospital wards"[Title/Abstract]) AND ("Aged"[Mesh] OR elderly[Title/Abstract] OR "older adult"[Title/Abstract] OR "older adults"[Title/Abstract] OR "older patient"[Title/Abstract] OR "older patients"[Title/Abstract] OR geriatric*[Title/Abstract])