## SUPPLEMENTARY FILE 1: Characteristics of included studies in scoping review

**Table 27: Detailing characteristics of studies included in the scoping review**

| **Citation/ Country** | **Design** | **Population** | **Intervention** | **Context** | **E** | **S** | **A** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Boersma et al., 201965  The Netherlands | Cluster‐RCT | Patients scheduled for preoperative screening at the geriatric outpatient clinic of the University Medical Centre Utrecht  N=124 | Research Physician-led (also a Resident) + Resident + Pharmacy Assistant  CDSS  Systematic Tool to Reduce Inappropriate Prescribing (STRIP Assistant)  Prescribing recommendations were generated by a physician using STRIP Assistant and given to the resident to implement or forward to surgeon or GP. | Appropriate prescribing | E |  |  |
| Caffiero et al., 201766  USA | Retrospective Cohort | Medicare beneficiaries who were dispensed a Drugs to Avoid in the Elderly (DAE)  N=9059 | Clinical Pharmacist-led + Prescriber  Clinical pharmacist medication therapy management program  Medication review between pharmacist and beneficiary to identify and agree on changes to medication. Pharmacist works with beneficiary's prescriber to implement medication changes. Prescriber education aims to promote why medication changes are recommended. | **Deprescribing** | E |  |  |
| Campins et al., 201767  Spain | Randomized, open-label, multicentre, parallel-arm clinical trial | Community dwelling elderly people resident in the municipalities of Mataró and Argentona (Barcelona, Spain)  N= 503 | Clinical Pharmacist-led + Physician  Algorithm + Criteria-led  Medication evaluation programme  Pharmacist review of all medication according to the Good Palliative –Geriatric Practice algorithm and the Screening Tool of Older Person’s Prescriptions-Screening Tool to Alert Doctors to the Right Treatment (STOPP/START) criteria and recommendations to the patient’s physician. | Appropriate prescribing | E |  | A |
| Chiarelli et al., 202068  Italy | Pre/Post  (Pilot study) | Patients admitted to one of 6 hospital units (Pharmacy and Scientific Direction and four Internal Medicine plus the Acute Medicine and Geriatric wards)  N=90 | Clinical Pharmacist- led + Clinician  CDSS + Criteria-led  Pharmacist-driven intervention  Pharmacists undertake drug recognition/reconciliation within 24-72 hours. Drug related problems (DRP) identified by pharmacists, INTERCheck, Summary of Product Characteristics, STOPP/START, Beers criteria. Joint evaluation of DRP with clinicians. Clinicians chose whether to accept recommendations. Drug reconciliation undertaken again at hospital discharge. GPs informed of prescribing outcomes. | Medication Reconciliation | E |  | A |
| Curtin et al., 202069  Ireland | Parallel-group unblinded randomized pragmatic clinical trial | Adults with advanced frailty and polypharmacy transferring to long-term nursing home care from 2 acute hospitals in Cork City  N=130 | Specialist Registrar in Geriatric Medicine (Researcher)-led + Attending Physicians/Nursing staff monitored patients for adverse drug effects  Criteria-led  STOPPFrail Criteria  The STOPPFrail criteria was used to identify deprescribing targets. The STOPPFrail-guided deprescribing plan was presented to attending physicians who decided whether to implement recommended medication changes. | **Deprescribing** | E |  |  |
| Fried et al., 201770  USA | RCT | Community dwelling veterans  N=128 | Clinician-led  CDSS  TRIM (Tool to Reduce Inappropriate Medications)  TRIM links a computerised decision support system to a patient’s electronic health record, extracting chronic conditions and medications. Individual patient assessment data and chart review data are added. Automated algorithms evaluate medication appropriateness. Clinician feedback reports summarize discrepancies and provide recommendations for deprescribing. Patient feedback reports summarize discrepancies and self-reported medication problems to discuss with the clinician. | Medication Appropriateness | E |  | A |
| Koberlein-Neu et al., 201671  Germany | Stepped wedge cluster RCT | General practice patients from two regions in Westphalia-Lippe, Germany.  N=142 | Pharmacist-led + Home Care Specialist + Primary Care Physician (PCP)  Interprofessional Medication Therapy Management  Medication management performed by PCP. Home care specialists then performed patient assessment of medications. Pharmacist then undertook a comprehensive medication review based on notes from home specialist and PCP. Recommendations then sent to home specialists and PCP. PCP responsible for implementing recommendations. | Medication Management | E |  | A |
| Komagamine et al., 201873  Japan | Retrospective Cohort | Patients admitted  to the orthopedic ward 350-bed acute care hospital in the Tochigi prefecture of Japan approached by a pharmacist for a polypharmacy screening.  N=136 | Internal Medicine Physician-led + Pharmacist  Intervention to reduce inappropriate or unnecessary medication use  Assessment by internal medicine physicians of the appropriateness of polypharmacy and the de-prescription of any unnecessary medications during the patients’ hospital stay. | **Deprescribing** |  |  | A |
| Komagamine et al., 201772  Japan | Retro observational study | Patients presenting with hip fracture at the National Hospital Organization Tochigi Medical Centre, Japan.  N=164 | Physician-led + Pharmacist  Criteria-led  Intervention to improve the appropriate use of polypharmacy  Pharmacists took full medication history. Assessment by internal medicine physicians of the appropriateness of polypharmacy and the de-prescription of any unnecessary medications during the patients’ hospital stay. | Appropriate Polypharmacy | E | S |  |
| Martin Lesende et al., 201379  Spain | Cross-sectional | Patients from 20 doctor’s lists across three primary care centres.  N=100 | GP-led + Research Assistant  Criteria-led  STOPP/START criteria  Identification of inappropriate prescriptions took place. The research team determined by consensus whether the STOPP/START criteria had been met. | Appropriate prescribing | E |  | A |
| McCarthy et al., 201774  Ireland | Pre/Post  (Pilot study) | 6 GPs piloted the SPPiRE intervention with 10 different patients.  N= 10 | GP-led  CDSS  SPPiRE (Supporting prescribing in older patients with multimorbidity and significant polypharmacy)  Website where GPs access training videos and a template for conducting an individualised structured medication review guiding the GP to screen for potentially inappropriate prescriptions, assesses patient treatment priorities, reviews medications and agrees changes with patients and documents which they undertake with each of their included patients. | Appropriate prescribing | E |  | A |
| McDonald et al., 2017 75  Canada | Non-randomized controlled trial (before and after) | Patients admitted to one of 4 inpatient medical units in 3 academic centres in Montreal, Ottawa and Toronto.  N=1066 | Pharmacist + Physician + Research Assistant  CDSS  MedSafer  Usual care (best possible medication history as a part of medication reconciliation at admission and discharge) + “deprescribing opportunity report” generated by MedSafer within 72 hrs of admission and provided to their in-hospital treating team. | **Deprescribing** | E | S |  |
| Muth et al., 201676  Germany | Cluster-RCT  (Pilot study) | Patients of academic teaching practices and GPs who attended the Frankfurt General Practice Day.  N=100 | GP-led + Health Care Assistant (HCA) + Research assistants  CDSS  PRIoritising MUltimedication in Multimorbidity (PRIMUMpilot)  The HCA conducted a checklist-based interview with patients on medication-related problems and reconciled their medications. Assisted by a CDSS (AidKlinik®) the GPs discussed medication intake with patients and adjusted their medication regimens. | Medication Appropriateness | E | S | A |
| Muth et al., 201877  Germany | Pragmatic, cluster RCT | Older patients with multimorbidity in general practice. | PRIoritising MUltimedication in Multimorbidity (PRIMUM)  CDSS  PRIoritising MUltimedication in Multimorbidity (PRIMUMpilot)  The HCA conducted a checklist-based interview with patients on medication-related problems and reconciled their medications. Assisted by a CDSS (Arzneimittel informationsDienst (AiD)®) the GPs discussed medication intake with patients and adjusted their medication regimens. | Medication Appropriateness | E |  | A |
| Petersen et al., 201878  USA | Non-randomised controlled trial  (Pilot study) | A convenience sample (patients eNolled in a larger quality improvement project) of Medicare eligible hospital patients admitted to a private, non-profit, tertiary care teaching hospital located in Nashville, Tennessee.  N=40 | Clinical Pharmacists + Physician + Geriatric nurse practitioners + Research assistants  Framework  Shed-MEDS  An evidence-based, structured deprescribing framework (Shed-MEDS) is made up of 4 phases: 1. Medication history and list confirmed; 2. Evaluate medications for deprescribing; 3. Decide with the patient; 4. Synthesize and communicate recommendations. | **Deprescribing** | E |  | A |
| Potter et al., 201980  Australia | Prospective Cohort | Patients admitted to the acute general medical unit (GMU) of an Australian tertiary hospital over a 6-week period.  N=129 | Pharmacist-led + Physician  Pharmacist-led physician-supported inpatient deprescribing model  Patients were evaluated for deprescribing by team pharmacists. Clinical decision-making was supported by physicians after discussion with patient. | **Deprescribing** | E |  |  |
| Russell et al., 201981  Australia | Prospective Cohort | Patients from acute care in seven hospitals.  N=100 | Clinical Pharmacist + Specialist Physician (Clinical Pharmacologist, Geriatrician, Palliative Care Physician, or General Physician)  In-hospital deprescribing for unplanned older inpatient admissions  A multi-disciplinary team assessed patient’s medication list at the time of admission. Decisions about medication changes involved the multi-disciplinary team, patient and carer, patient’s GP. Deprescribing decisions were made by multi-disciplinary team using any deprescribing guideline and recorded. | **Deprescribing** | E | S |  |
| San-José et al., 202082  Spain | Pre/Post | Elderly patients with high multimorbidity affected by an unstable chronic condition and polypharmacy and visits emergency room or recent unplanned hospital admission within the last 6 months  N=100 | GP + Internal Medicine Specialist + Advanced Practice Nurse from primary care + Hospital Day Nurse  Criteria-led  Integrated health intervention on polypharmacy and inappropriate prescribing  Interdisciplinary health intervention focused on comprehensive geriatric assessment and pharmacological assessment centred on polypharmacy and inappropriate prescribing using the STOPP/START criteria. | Appropriate prescribing | E |  |  |
| van Summeren et al., 2017 83  The Netherlands | Pre/Post  (Pilot study) | Patients of 14 GPs working in northern Netherlands.  N=59 | GP-led  Outcome Prioritisation Tool (OPT)  Patient prioritisation tool (Outcome prioritisation tool (OPT)). Patients were asked to prioritise 4 health outcomes (remaining alive, maintaining independence, reducing pain, and reducing other symptoms) using an Outcome Prioritisation Tool. GPs used this prioritisation to review the medication and to propose and discuss medication changes with the patient. | Medications Review | E |  |  |
| Zechmann et al., 201984  Switzerland | Exploratory | Patients recruited by GPs in Northern Switzerland who were part of a cluster RCT looking at whether a patient-centred systematic review leads to more appropriate medication use  N=19 | GP-led + Practice Nurse  Algorithm  Adapted Good Palliative Geriatric Practice (GPGP) algorithm  GPs undergo training with instruction of an algorithm to assess need for medication change (stop, reduce dose, substitute, remain unchanged). In a shared decision model process the GP and patient then decided whether to pursue recommendations. | **Deprescribing** |  |  | A |