SUPPLEMENTARY FILE 2: Outcomes and impact of deprescribing intervention by type (scoping review)

**Table 28: Detailing effectiveness outcomes and impact of deprescribing interventions included in the scoping review**

**EFFECTIVENESS OUTCOMES**

| **Outcome** | **Outcome definition** | **Impact on deprescribing** | **Statistical significance** | **Study** |
| --- | --- | --- | --- | --- |
| Active pharmaceutical ingredient changes | Number of drug formulation changes [Reports on number of intentional documented, intentional not documented and unintentional changes, not reported here] | NA | NA | Chiarelli et al., 2020 68 |
| Number of patients with active pharmaceutical ingredients changes 0-6 months[Data analysed retrospectively from von Buedingen 2018] | Unclear | NA | Muth et al., 201877 |
| Number of patients with active pharmaceutical ingredients changes 6-9 months[Data analysed retrospectively from von Buedingen 2018] | Unclear | NA | Muth et al., 201877 |
| Adherence | Initial treatment adherence (Morisky-Green), Intervention vs Control | Positive | No | Campins et al., 201767 |
| Observed adherence: dose score at 6 months (number and percentage of deviating patients) | Negative | No | Muth et al., 201877 |
| Observed adherence: dose score at 9 months (number and percentage of deviating patients) | Negative | No | Muth et al., 201877 |
| Observed adherence: drug score at 6 months (number and percentage of deviating patients), Intervention vs Control | Positive | No | Muth et al., 201877 |
| Observed adherence: drug score at 9 months (number and percentage of deviating patients), Intervention vs Control | Unclear | No | Muth et al., 201877 |
| Observed adherence: regimen score at 6 months (number and percentage of deviating patients) | Negative | No | Muth et al., 201877 |
| Observed adherence: regimen score at 9 months (number and percentage of deviating patients; OR (95% CI)) | Negative | No | Muth et al., 201877 |
| Self-reported adherence at 6 months, Intervention vs Control | Negative | Yes | Muth et al., 201877 |
| Self-reported adherence at 9 months, Intervention vs Control | Equivocal | No | Muth et al., 201877 |
| Treatment adherence (Morisky-Green) at 6 months, Intervention vs Control | Positive | Yes | Campins et al., 201767 |
| Observed adherence (Dose score (%)) T1-T0, Mean (SD), Intervention vs Control | Equivocal | No | Muth et al., 201676 |
| Observed adherence (Dose score (%)) T2-T0, Intervention vs Control | Equivocal | No | Muth et al., 201676 |
| Observed adherence (Drug score (%)) T1-T0, Intervention vs Control | Negative | No | Muth et al., 201676 |
| Observed adherence (Drug score (%)) T2-T0, Intervention vs Control | Equivocal | No | Muth et al., 201676 |
| Observed adherence (Regimen score (%)) T1-T0, Mean (SD), Intervention vs Control | Equivocal | No | Muth et al., 201676 |
| Observed adherence (Regimen score (%)) T2-T0, Intervention vs Control | Equivocal | No | Muth et al., 201676 |
| Reported adherence (Medication Adherence Reporting Scale) T1-T0, Intervention vs Control | Positive | No | Muth et al., 201676 |
| Reported adherence (Medication Adherence Reporting Scale) T2-T0, Intervention vs Control | Negative | No | Muth et al., 201676 |
| Reported adherence (Morisky) T1-T0, Intervention vs Control | Positive | No | Muth et al., 201676 |
| Reported adherence (Morisky) T2-T0, Intervention vs Control | Equivocal | No | Muth et al., 201676 |
| Beliefs about medication | Beliefs about Medicine at 6 months (BMQ), general harms, Intervention vs Control | Negative | No | Muth et al., 201877 |
| Beliefs about Medicine at 6 months (BMQ), general overuse, Intervention vs Control | Positive | No | Muth et al., 201877 |
| Beliefs about Medicine at 6 months (BMQ), specific concerns, Intervention vs Control | Positive | No | Muth et al., 201877 |
| Beliefs about Medicine at 6 months (BMQ), specific necessities, Intervention vs Control | Negative | No | Muth et al., 201877 |
| Beliefs about Medicine at 9 months (BMQ), general harms, Intervention vs Control | Positive | No | Muth et al., 201877 |
| Beliefs about Medicine at 9 months (BMQ), general overuse, Intervention vs Control | Equivocal | No | Muth et al., 201877 |
| Beliefs about Medicine at 9 months (BMQ), specific concerns, Intervention vs Control | Negative | No | Muth et al., 201877 |
| Beliefs about Medicine at 9 months (BMQ), specific necessities, Intervention vs Control | Positive | No | Muth et al., 201877 |
| Beliefs about Medicine BMQ (Specific necessities) T1-T0, Intervention vs Control | Positive | No | Muth et al., 201676 |
| Beliefs about medicines BMQ (Specific concerns) T1-T0, Intervention vs Control | Negative | No | Muth et al., 201676 |
| Beliefs about medicines BMQ (Specific concerns) T2-T0, Intervention vs Control | Positive | No | Muth et al., 201676 |
| Beliefs about medicines BMQ (Specific necessities) T2-T0, Intervention vs Control | Negative | No | Muth et al., 201676 |
| Beliefs in Medicine BMQ (General harms) T1-T0, Intervention vs Control | Positive | No | Muth et al., 201676 |
| Beliefs in Medicine BMQ (General harms) T2-T0, Intervention vs Control | Positive | No | Muth et al., 201676 |
| Beliefs in Medicine BMQ (General overuse) T1-T0, Intervention vs Control | Positive | No | Muth et al., 201676 |
| Beliefs in Medicine BMQ (General overuse) T2-T0 Intervention vs Control | Positive | No | Muth et al., 201676 |
| Cost | Estimated savings in drug administration cost | Positive | NA | Russell et al., 201981 |
| Mean change in 28-day cost of participant's prescription medication, Intervention vs Control | Positive | Yes | Curtin et al., 202069 |
| Depression | Geriatric Depression Scale T1-T0, Intervention vs Control | Positive | No | Muth et al., 201676 |
| Geriatric Depression Scale T2-T0, Intervention vs Control | Positive | Yes | Muth et al., 201676 |
| Drug addition | New medications at discharge readmission, Patients whose medications were deprescribed vs Patients whose medications were not deprescribed | Negative | NA | Russell et al., 201981 |
| Number of added drugs per patient 0-6 months[Data analysed retrospectively from von Buedingen 2018] | NA | NA | Muth et al., 201877 |
| Number of added drugs per patient 6-9 months[Data analysed retrospectively from von Buedingen 2018] | NA | NA | Muth et al., 201877 |
| Number of new, regularly scheduled long-termmedications started, Patients whose medications were deprescribed vs Patients whose medications were not deprescribed | Positive | NA | Russell et al., 201981 |
| Number of patients with an addition of active pharmaceutical ingredients 0-6 months, Intervention vs Control [Data analysed retrospectively from von Buedingen 2018] | Negative | No | Muth et al., 201877 |
| Number of patients with an addition of active pharmaceutical ingredients 6-9 months, Intervention vs Control [Data analysed retrospectively from von Buedingen 2018] | Negative | No | Muth et al., 201877 |
| Drug administration method | Number of administration route changes [Reports on number of intentional documented, intentional not documented and unintentional changes, not reported here] | NA | NA | Chiarelli et al., 202068  |
| Number of patients with a change in administration method 0-6 months, Intervention vs Control [Data analysed retrospectively from von Buedingen 2018] | Unclear | No | Muth et al., 201877 |
| Number of patients with a change in administration method 0-6 months, Intervention vs Control [Data analysed retrospectively from von Buedingen 2018] | NA | No | Muth et al., 201877 |
| Drug burden | Drug Burden Index at discharge, Intervention vs Control | Positive | No | Petersen et al., 201878 |
| Drug Burden Index reductions, Intervention vs Control | Positive | No | Petersen et al., 201878 |
| Drug discontinuation | Number of drugs discontinued in intervention group [medication changes reported by Anatomical Therapeutic Chemical (ATC) drug groups, not recorded here] | NA | NA | Campins et al., 201767 |
| Number of drugs discontinued per patient 0-6 months[Data analysed retrospectively from von Buedingen 2018] | NA | NA | Muth et al., 201877 |
| Number of drugs discontinued per patient 6-9 months[Data analysed retrospectively from von Buedingen 2018] | NA | NA | Muth et al., 201877 |
| Number of individual PIMs decreased at discharge (among interviewed patients) | NA | NA | McDonald et al., 201975 |
| Number of individual PIMs remaining deprescribed at the time of the 30-day interview | NA | NA | McDonald et al., 201975 |
| Number of individual PIMs stopped at discharge (among interviewed patients) | NA | NA | McDonald et al., 201975 |
| Number of medications ceased (does not include those dose-reduced), Patients whose medications were ceased vs Patients whose medications were not ceased | Positive | Yes | Russell et al., 201981 |
| Proportion of deprescribed PIMs decreased during the intervention phase | NA | NA | McDonald et al., 201975 |
| Proportion of deprescribed PIMs stopped during the control phase | NA | NA | McDonald et al., 201975 |
| Number of patients with a discontinuation of active pharmaceutical ingredients 0-6 months, Intervention vs Control [Data analysed retrospectively from von Buedingen 2018] | Negative | No | Muth et al., 201877 |
| Number of patients with a discontinuation of active pharmaceutical ingredients 6-9 months, Intervention vs Control [Data analysed retrospectively from von Buedingen 2018] | Negative | No | Muth et al., 201877 |
| Number of patients with at least 1 drug discontinuation at 12 months, Intervention vs Control | Positive | Yes | Campins et al., 201767 |
| Number of patients with at least 1 drug discontinuation at 3 months, Intervention vs Control | Positive | Yes | Campins et al., 201767 |
| Number of patients with at least 1 drug discontinuation at 6 months, Intervention vs Control | Positive | Yes | Campins et al., 201767 |
| Number of PIMs at admission and at discharge among the 158 patients who survived to discharge, Intervention vs control [Lists types of PIMs at admission and discharge reported but not noted here] | Positive | No | Komagamine et al., 201772 |
| Number of PRN medications deprescribed (medications stopped) from hospital enrolment, Intervention vs Control | Positive | No | Petersen et al., 201878 |
| Participants who had successful discontinuation of an antipsychotic drug, Intervention vs Control | Positive | No | Curtin et al., 202069 |
| Proportion of patients with one or more PIMs deprescribed at discharge, Intervention period vs Control period | Positive | Yes | McDonald et al., 201975 |
| Scheduled medications deprescribed (medications stopped or dose reduction) from hospital enrolment, Intervention vs Control | Positive | Yes | Petersen et al., 201878 |
| Scheduled medications deprescribed (medications stopped) from hospital enrolment, Intervention vs Control | Positive | No | Petersen et al., 201878 |
| Total medications deprescribed (medications stopped or dose reduction) from hospital enrolment, Intervention vs Control | Positive | Yes | Petersen et al., 201878 |
| Total medications deprescribed (medications stopped) from hospital enrolment, Intervention vs Control | Positive | No | Petersen et al., 201878 |
| Drug dosage | Fall in inappropriate renal dosage adjustments | NA | NA | Muth et al., 201676 |
| Number of dose adjustments in intervention group [changes reported by AnatomicalTherapeutic Chemical (ATC) drug groups, not recorded here] | NA | NA | Campins et al., 201767 |
| Number of dose changes per patient 0-6 months[Data analysed retrospectively from von Buedingen 2018] | NA | NA | Muth et al., 201877 |
| Number of dose changes per patient 6-9 months[Data analysed retrospectively from von Buedingen 2018] | NA | NA | Muth et al., 201877 |
| Number of dose increases [Reports on number of intentional documented, intentional not documented and unintentional dose increases, not reported here] | NA | NA | Chiarelli et al., 202068 |
| Number of dose reductions [Reports on number of intentional documented, intentional not documented and unintentional dose reductions, not reported here] | NA | NA | Chiarelli et al., 202068 |
| Number of drugs dose reduced as a consequence of the recognition/reconciliation process involving pharmacists and clinicians [Rationale for deprescribing] | NA | NA | Chiarelli et al., 202068  |
| Number of medications dose-reduced | NA | NA | Russell et al., 201981 |
| Number of patients in which dosages were altered 0-6 months[Data analysed retrospectively from von Buedingen 2018] | NA | NA | Muth et al., 201877 |
| Number of patients in which dosages were altered 6-9 months[Data analysed retrospectively from von Buedingen 2018] | NA | NA | Muth et al., 201877 |
| Proportion of deprescribed PIMs tapered or decreased during the control phase | NA | NA | McDonald et al., 20197 |
| Number of patients with a change in application time point 0-6 months, Intervention vs Control [Data analysed retrospectively from von Buedingen 2018] | Unclear | No | Muth et al., 201877 |
| Number of patients with a change in application time point 6-9 months, Intervention vs Control [Data analysed retrospectively from von Buedingen 2018] | Unclear | No | Muth et al., 201877 |
| Number of patients with a daily dosage decrease 0-6 months, Intervention vs Control [Data analysed retrospectively from von Buedingen 2018] | Positive | Yes | Muth et al., 201877 |
| Number of patients with a daily dosage decrease 6-9 months, Intervention vs Control [Data analysed retrospectively from von Buedingen 2018] | Positive | No | Muth et al., 201877 |
| Number of patients with a daily dosage increase 0-6 months, Intervention vs Control [Data analysed retrospectively from von Buedingen 2018] | Negative | No | Muth et al., 201877 |
| Number of patients with a daily dosage increase 6-9 months, Intervention vs Control [Data analysed retrospectively from von Buedingen 2018] | Negative | No | Muth et al., 201877 |
| Number of patients with application interval prolonged 0-6 months, Intervention vs Control [Data analysed retrospectively from von Buedingen 2018] | Unclear | No | Muth et al., 201877 |
| Number of patients with application interval prolonged 6-9 months, Intervention vs Control [Data analysed retrospectively from von Buedingen 2018] | Unclear | No | Muth et al., 201877 |
| Number of patients with application interval shortened 0-6 months, Intervention vs Control [Data analysed retrospectively from von Buedingen 2018] | Unclear | No | Muth et al., 201877 |
| Number of patients with application interval shortened 6-9 months, Intervention vs Control [Data analysed retrospectively from von Buedingen 2018] | Unclear | No | Muth et al., 201877 |
| Number of patients with at least 1 dose adjustment at 12 months, Intervention vs Control | Positive | Yes | Campins et al., 201767 |
| Number of patients with at least 1 dose adjustment at 3 months, Intervention vs Control | Positive | Yes | Campins et al., 201767 |
| Number of patients with at least 1 dose adjustment at 6 months, Intervention vs Control | Positive | Yes | Campins et al., 201767 |
| Number of patients with pill splitting started 0-6 months, Intervention vs Control [Data analysed retrospectively from von Buedingen 2018] | Unclear | No | Muth et al., 201877 |
| Number of patients with pill splitting started 6-9 months, Intervention vs Control [Data analysed retrospectively from von Buedingen 2018] | Unclear | No | Muth et al., 201877 |
| Number of patients with pill splitting stopped 0-6 months, Intervention vs Control [Data analysed retrospectively from von Buedingen 2018] | Unclear | No | Muth et al., 201877 |
| Number of patients with pill splitting stopped 6-9 months, Intervention vs Control [Data analysed retrospectively from von Buedingen 2018] | Unclear | No | Muth et al., 201877 |
| Number of PRN medications deprescribed (dose reduction) from hospital enrolment, Intervention vs Control | Positive | No | Petersen et al., 201878 |
| Number of single doses at 6 months, Intervention vs Control | Negative | No | Muth et al., 201877 |
| Number of single doses at 9 months, Intervention vs Control | Negative | No | Muth et al., 201877 |
| Number of single doses T1-T0, Intervention vs Control | Negative | No | Muth et al., 201676 |
| Number of single doses T2-T0, Intervention vs Control | Negative | No | Muth et al., 201676 |
| Participants who had successful dose reduction of an antipsychotic drug, Intervention vs Control | Positive | No | Curtin et al., 202069 |
| Scheduled medications deprescribed (dose reduction) from hospital enrolment, Intervention vs Control | Positive | Yes | Petersen et al., 201878 |
| Total medications deprescribed (dose reduction) from hospital enrolment, Intervention vs Control | Positive | Yes | Petersen et al., 201878 |
| Drug related problems | Total number of drug related problems identified in the frame of the recognition/reconciliation process at hospital discharge[Types of drugs also reported but not recorded here] | NA | NA | Chiarelli et al., 202068 |
| Number of drug related problems, Intervention phase 1 vs Control | Positive | Yes | Koberlein-Neu et al., 201671 |
| Drug restart | Number of drugs that were discontinued as a result of the interventionhad been restarted at 3 months | NA | NA | Curtin et al., 202069 |
| Number of medications represcribed (% of deprescribed) [Lists no of medications represcribed by type, not reported here] | NA | NA | Russell et al., 201981 |
| Number of patients with restart of previouslydiscontinued drugs of active pharmaceutical ingredients 6-9 months, Intervention vs Control [Data analysed retrospectively from von Buedingen 2018] | Positive | No | Muth et al., 201877 |
| Number of restarted drugs at 12 months, Intervention vs Control | Negative | NR | Campins et al., 201767 |
| Number of restarted drugs at 3 months, Intervention vs Control | NA | NR | Campins et al., 201767 |
| Number of restarted drugs at 6 months, Intervention vs Control | Negative | NR | Campins et al., 201767 |
| Drug strength | Number of changes in the strength of the active pharmaceutical ingredients per patient 0-6 months[Data analysed retrospectively from von Buedingen 2018] | NA | NA | Muth et al., 201877 |
| Number of changes in the strength of the active pharmaceutical ingredients per patient 6-9 months[Data analysed retrospectively from von Buedingen 2018] | NA | NA | Muth et al., 201877 |
| Number of patients in which a change in the strength of the active pharmaceutical ingredients occurred 0-6 months[Data analysed retrospectively from von Buedingen 2018] | NA | NA | Muth et al., 201877 |
| Number of patients in which a change in the strength of the active pharmaceutical ingredients occurred 6-9 months[Data analysed retrospectively from von Buedingen 2018] | NA | NA | Muth et al., 201877 |
| Number of patients with a decrease in strength of active pharmaceutical ingredients 0-6 months, Intervention vs Control [Data analysed retrospectively from von Buedingen 2018] | Positive | No | Muth et al., 201877 |
| Number of patients with a decrease in strength of active pharmaceutical ingredients 6-9 months, Intervention vs Control [Data analysed retrospectively from von Buedingen 2018] | Negative | No | Muth et al., 201877 |
| Number of patients with an increase in strength of active pharmaceutical ingredients 0-6 months, Intervention vs Control [Data analysed retrospectively from von Buedingen 2018] | Unclear | NA | Muth et al., 201877 |
| Number of patients with an increase in strength of active pharmaceutical ingredients 6-9 months, Intervention vs Control [Data analysed retrospectively from von Buedingen 2018] | Unclear | No | Muth et al., 201877 |
| Drug substitution | Number of changes with a drug of a different but similar pharmacological class [Reports on number of intentional documented, intentional not documented and unintentional changes, not reported here] | NA | NA | Chiarelli et al., 202068  |
| Number of changes with a drug of the same pharmacological class [Reports on number of intentional documented, intentional not documented and unintentional changes, not reported here] | NA | NA | Chiarelli et al., 202068  |
| Number of drug substitutions in intervention group [changes reported by AnatomicalTherapeutic Chemical (ATC) drug groups, not recorded here] | NA | NA | Campins et al., 201767 |
| Number of drugs substituted as a consequence of the recognition/reconciliation process involving pharmacists and clinicians [Rationale for deprescribing] | NA | NA | Chiarelli et al., 202068  |
| Number of patients with an intraclass substitution of active pharmaceutical ingredients 0-6 months, Intervention vs Control [Data analysed retrospectively from von Buedingen 2018] | Unclear | No | Muth et al., 201877 |
| Number of patients with an intraclass substitution of active pharmaceutical ingredients 6-9 months, Intervention vs Control [Data analysed retrospectively from von Buedingen 2018] | Unclear | No | Muth et al., 201877 |
| Number of patients with at least 1 drug substitution at 12 months, Intervention vs Control | Positive | Yes | Campins et al., 201767 |
| Number of patients with at least 1 drug substitution at 3 months, Intervention vs Control | Positive | Yes | Campins et al., 201767 |
| Number of patients with at least 1 drug substitution at 6 months, Intervention vs Control | Positive | Yes | Campins et al., 201767 |
| Drugs deprescribed | Number of drugs deprescribed [Reports on number of intentional documented, intentional not documented and unintentional drugs deprescribed, not reported here] | NA | NA | Chiarelli et al., 2020 68 |
| Number of drugs deprescribed as a consequenceof the recognition/reconciliation process involving pharmacists and clinicians [Rationale for deprescribing] | NA | NA | Chiarelli et al., 202068  |
| Number of medications deprescribed (% of prescribed) [Lists no of medications deprescribed by type, not reported here] | NA | NA | Russell et al., 201981 |
| Number of medications further deprescribed (ceased and decreased) at 90-day follow in patients still alive in deprescribinggroup (n=49) | NA | NA | Russell et al., 201981 |
| Number of medications further deprescribed (ceased) at 90-day follow in patients still alive in deprescribinggroup (n=49) | NA | NA | Russell et al., 201981 |
| Number of medications further deprescribed (decreased) at 90-day follow in patients still alive in deprescribinggroup (n=49) | NA | NA | Russell et al., 201981 |
| Number of patients having >4 medications deprescribed | NA | NA | Russell et al., 201981 |
| Number of PRN medications deprescribed (medications stopped or dose reduction) from hospital enrolment, Intervention vs Control | Positive | No | Petersen et al., 201878 |
| Falls | Falls (n=99) | Positive | No | Curtin et al., 202069 |
| Number of falls at 6 months, patients with a decrease in START criteria (13) vs patients with no decrease in START criteria (71) | Positive | No | San-José et al., 202068 |
| Number of falls at 6 months, patients with a decrease in STOPP criteria (32) vs patients with no decrease in STOPP criteria (52) | Positive | Yes | San-José et al., 202082 |
| Fracture | Any new fracture, Intervention vs Control | Positive | No | Komagamine et al., 201773 |
| Non-vertebral fractures (n=99) | Positive | No | Curtin et al., 202069 |
| Frailty | Difference in Fried criteria at 3 months | NR | NR | Boersma et al., 201965 |
| Functional status | ADL (according to Barthel index), Intervention phase 1 vs Control | Equivocal | No | Koberlein-Neu et al., 201671 |
| Difference in Katz Index of Independencein Activities of Daily Living (Katz‐ADL) at 3 months | NR | NR | Boersma et al., 201965 |
| Functional status (VES-13) at 6 months, Intervention vs Control | Negative | No | Muth et al., 201877 |
| Functional status (VES-13) at 9 months, Intervention vs Control | Negative | Yes | Muth et al., 201877 |
| iADL (according to Lawton and Brody), Intervention phase 1 vs Control | Negative | No | Koberlein-Neu et al., 201671 |
| Mobility test according to Tinetti, Intervention phase 1 vs Control | Negative | No | Koberlein-Neu et al., 201671 |
| Health appointments/visits/tests | Mean number of complementary test per patient, 0-12 months, Intervention vs Control | Unclear | No | Campins et al., 201767 |
| Mean number of complementary test per patient, 0-3 months, Intervention vs Control | Unclear | No | Campins et al., 201767 |
| Mean number of complementary test per patient, 0-6 months, Intervention vs Control | Unclear | No | Campins et al., 201767 |
| Mean number of primary care visits per patient, 0-12 months, Intervention vs Control | Negative | No | Campins et al., 201767 |
| Mean number of primary care visits per patient, 0-3 months, Intervention vs Control | Negative | Yes | Campins et al., 201767 |
| Mean number of primary care visits per patient, 0-6 months, Intervention vs Control | Negative | Yes | Campins et al., 201767 |
| Mean number of specialty care visits per patient, 0-12 months, Intervention vs Control | Negative | No | Campins et al., 201767 |
| Mean number of specialty care visits per patient, 0-3 months, Intervention vs Control | Positive | No | Campins et al., 201767 |
| Mean number of specialty care visits per patient, 0-6 months, Intervention vs Control | Negative | No | Campins et al., 201767 |
| Number of emergency visits at 6 months, patients with a decrease in STOPP criteria (32) vs patients with no decrease in STOPP criteria (52) | Negative | No | San-José et al., 202082 |
| Unscheduled medical reviews by GP (n=99) | Negative | No | Curtin et al., 202069 |
| Hospital admission/readmission/visits | ED presentation (not admitted) | Positive | No | Curtin et al., 202069 |
| Length of stay (days), Patients whose medications were deprescribed vs Patients whose medications were not deprescribed | Negative | No | Russell et al., 201981 |
| Mean number of hospital emergency visits per patient, 0-12 months, Intervention vs Control | Positive | No | Campins et al., 201767 |
| Mean number of hospital emergency visits per patient, 0-3 months, Intervention vs Control | Negative | No | Campins et al., 201767 |
| Mean number of hospital emergency visits per patient, 0-6 months, Intervention vs Control | Negative | No | Campins et al., 201767 |
| Number of admissions at 6 months, patients with a decrease in START criteria (13) vs patients with no decrease in START criteria (71) | Negative | No | San-José et al., 202082 |
| Number of admissions at 6 months, patients with a decrease in STOPP criteria (32) vs patients with no decrease in STOPP criteria (52) | Negative | No | San-José et al., 202082 |
| Number of days spent in hospital at 6 months, Intervention vs Control | Negative | No | Muth et al., 201877 |
| Number of days spent in hospital at 9 months, Intervention vs Control | Negative | No | Muth et al., 201877 |
| Number of emergency visits at 6 months, patients with a decrease in START criteria (13) vs patients with no decrease in START criteria (71) | Negative | No | San-José et al., 202082 |
| Number of hospital stays at 6 months, Intervention vs Control | Equivocal | No | Muth et al., 201877 |
| Number of hospital stays at 9 months, Intervention vs Control | Equivocal | No | Muth et al., 201877 |
| Percentage of hospitalized patients, 0-12 months, Intervention vs Control | Positive | No | Campins et al., 201767 |
| Percentage of hospitalized patients, 0-3 months, Intervention vs Control | Positive | No | Campins et al., 201767 |
| Percentage of hospitalized patients, 0-6 months, Intervention vs Control | Negative | No | Campins et al., 201767 |
| Unplanned hospital admission | Negative | No | Curtin et al., 202069 |
| Implemented change in medication | Decreased medication at follow-up (Number of times) [Number of observed medication changes per therapeutic subgroup noted but not recorded here] | NA | NA | van Summeren et al., 201783 |
| Mean number of discontinuation changes made per patient | NA | NA | Campins et al., 201767 |
| Mean number of dose adjustment changes made per patient | NA | NA | Campins et al., 201767 |
| Mean number of drugs per patient with changes implemented | NA | NA | Campins et al., 201767 |
| Mean number of new drug prescription changes made per patient | NA | NA | Campins et al., 201767 |
| Mean number of substitution with a more cost-effective alternative changes made per patient | NA | NA | Campins et al., 201767 |
| Number of identified instances of potentially inappropriate prescribing acted on | NA | NA | McCarthy et al 201774 |
| Number of identified instances of potentially inappropriate prescribing acted on when the proton pump inhibitor PIP was excluded | NA | NA | McCarthy et al 201774 |
| Number of people who had medications deprescribed | NA | NA | Russell et al., 201981 |
| Stopped medication at follow-up (Number of times) [Number of observed medication changes per therapeutic subgroup noted but not recorded here] | NA | NA | van Summeren et al., 201783 |
| Switched medication at follow-up (Number of times) [Number of observed medication changes per therapeutic subgroup noted but not recorded here] | NA | NA | van Summeren et al., 201783 |
| Total number of observed medication changes [Number of proposed and observed medication changes per therapeutic subgroup noted but not recorded here] | NA | NA | van Summeren et al., 201783 |
| Total number of prescription changes in intervention group [changes reported by Anatomical Therapeutic Chemical (ATC) drug groups, not recorded here] | NA | NA | Campins et al., 201767 |
| 1 + TRIM recommendations implemented (bivariate analysis), Intervention vs Control (Control, N=32) | Positive | No | Fried et al., 201770 |
| Clinician Outcome: Recommendation(s) (bivariate analysis), Intervention vs Control (N=55) | Positive | Yes | Fried et al., 201770 |
| Difference in resident-implemented recommended PIM changes between intervention and control groups whenthe control group of the complete period was compared with both the intervention group before and intervention group after introductionof standardization instructions for the application of STOPP/START criteria and guidelines | Positive | Yes | Boersma et al., 201965 |
| Difference in resident-implemented recommended PPO changes between intervention and control groups whenthe control group of the complete period was compared with both the intervention group before and intervention group after introductionof standardization instructions for the application of STOPP/START criteria and guidelines | Positive | Yes | Boersma et al., 201965 |
| Number of resident implemented medication changes because of PIMs made per patient in accordance with the prescribing recommendations, Intervention vs control [Lists drugs: Most frequently recommended and implemented recommendations regarding PIMS by type, not reported here] | Positive | Yes | Boersma et al., 201965 |
| Number of resident implemented medication changes because of PPO made per patient in accordance with the prescribing recommendations, Intervention vs control [Lists drugs: Most frequently recommended and implemented recommendations regarding PPOs by type, not reported here] | Positive | Yes | Boersma et al., 201965 |
| Number of resident implemented medication changes because of suboptimal dosages made per patient in accordance with the prescribing recommendations, Intervention vs control | Positive | No | Boersma et al., 201965 |
| Resident additional PIM changes combined with the implemented prescribing recommendations, Intervention vs control | Positive | Yes | Boersma et al., 201965 |
| Resident additional PPO changes combined with the implemented prescribing recommendations, Intervention vs control | Positive | Yes | Boersma et al., 201965 |
| Resident additional suboptimal dose changes combined with the implemented prescribing recommendations, Intervention vs control | Positive | No | Boersma et al., 201965 |
| Resident identified PIM changes not included in prescribing recommendations, Interventon vs control | Positive | No | Boersma et al., 201965 |
| Resident identified PPO changes not included in prescribing recommendations, Interventon vs control | Positive | No | Boersma et al., 201965 |
| Inappropriate prescribing  | Instances of potentially inappropriate prescribing | NA | NA | Lesende et al., 201379 |
| Number of GPs for whom at least one instance of inappropriate prescribing was found - with one START criteria | NA | NA | Lesende et al., 201379 |
| Number of instances of inappropriate prescribing (potentially inappropriate prescribing or potentialprescribing omission) | NA | NA | Lesende et al., 201379 |
| Number of patients with at least 1 potentially inappropriate prescription [most common PIP identified but not recorded here] | NA | NA | McCarthy et al 201774 |
| Number of patients with at least 1 potentially inappropriate prescription excluding higher prevalence, lower risk proton pump inhibitor PIP[most common PIP identified but not recorded here] | NA | NA | McCarthy et al 201774 |
| Medications associated with geriatric syndromes at hospital discharge, Intervention vs Control | Positive | No | Petersen et al., 201878 |
| Instances of potentially inappropriate prescribing according to STOPP criteria [Lists common types of PIP, not recorded here] | NA | NA | Lesende et al., 201379 |
| Number of Adverse drug reaction identified in the frame of the recognition/reconciliation process at hospital discharge | NA | NA | Chiarelli et al., 202068 |
| Number of duplicates identified in the frame of the recognition/reconciliation process at hospital discharge | NA | NA | Chiarelli et al., 202068 |
| Number of inappropriate drugs identified in the frame of the recognition/reconciliation process at hospital discharge | NA | NA | Chiarelli et al., 202068  |
| Number of off-label use identified in the frame of the recognition/reconciliation process at hospital discharge | NA | NA | Chiarelli et al., 202068  |
| Number of overdoses identified in the frame of the recognition/reconciliation process at hospital discharge | NA | NA | Chiarelli et al., 202068  |
| Inappropriate prescriptions per group T0, T1, Intervention vs Control | Unclear | NA | Muth et al., 201676 |
| Inappropriate prescriptions per group T0, T2, Intervention vs Control | Positive | NA | Muth et al., 201676 |
| Inappropriate prescriptions per patient T0, T1, Intervention vs Control | Negative | NA | Muth et al., 201676 |
| Inappropriate prescriptions per patient T0, T2, Intervention vs Control | Positive | NA | Muth et al., 201676 |
| Number of PIMs prescribed, Intervention phase 1 vs Control | Positive | No | Koberlein-Neu et al., 201671 |
| Potentially inappropriate medications at hospital discharge, Intervention vs Control | Positive | Yes | Petersen et al., 201878 |
| Number of PIMs detected by the research physician using STRIP Assistant | NA | NA | Boersma et al., 201965 |
| Numbers of patients with PIMs in the Control group, before intervention vs after intervention | Mixed | NA | Boersma et al., 201965 |
| Numbers of patients with PIMs in the Intervention group, before intervention vs after intervention | Mixed | NA | Boersma et al., 201965 |
| Number of GPs for whom at least one instance of inappropriate prescribing was found | NA | NA | Lesende et al., 201379 |
| Number of GPs for whom at least one instance of inappropriate prescribing was found - at least one STOPP criteria | NA | NA | Lesende et al., 201379 |
| Dispensing of same specified drugs to avoid in the elderly (DAE) dispensed in the 100 days after the index DAE dispensing date, Invervention vs Control [Lists DAEs dispensed by type of medication class reported but not recorded here] | Positive | Yes | Caffiero et al., 201766 |
| Number of people with more than 1 dispensing of the specified drugs to avoid in the elderly during follow-up, Invervention vs Control | Negative | Yes | Caffiero et al., 201766 |
| Medication Appropriateness | Appropriateness of prescribing of PIMs, Interventon vs control | Positive | Yes | Boersma et al., 201965 |
| Medication Appropriate Index sum score at patient level, MAI sum score T1-T0 | Negative | No | Muth et al., 201676 |
| Medication Appropriate Index sum score at patient level, T2-T0 (Mean, ±SD) | Negative | No | Muth et al., 201676 |
| Medication Appropriateness Index (Sensitivity analysis) Patients not taking part in Disease Management Programme, 6 months (T1), Intervention vs Control | Negative | No | Muth et al., 201877 |
| Medication Appropriateness Index (Sensitivity analysis) Patients not taking part in Disease Management Programme, 9 months (T2), Intervention vs Control | Negative | No | Muth et al., 201877 |
| Medication Appropriateness Index (Sensitivity analysis) Patients taking part in Disease Management Programme, 6 months (T1), Intervention vs Control | Negative | No | Muth et al., 201877 |
| Medication Appropriateness Index (Sensitivity analysis) Patients taking part in Disease Management Programme, 9 months (T2), Intervention vs Control | Negative | Yes | Muth et al., 201877 |
| Medication Appropriateness Index sum score per patient, Intervention phase 1 vs Control | Negative | No | Koberlein-Neu et al., 201671 |
| Medication Appropriateness Index sum score per patient, Intervention phase 2 vs Intervention phase 1 | Negative | Yes | Koberlein-Neu et al., 201671 |
| Medication Appropriateness Index, 6 months (T1), Intervention vs Control | Negative | No | Muth et al., 201877 |
| Medication Appropriateness Index, 9 months (T2), Intervention vs Control | Negative | No | Muth et al., 201877 |
| Number of prescriptions rated with MAI, 6 months, Intervention vs Control | Equivocal | No | Muth et al., 201877 |
| Number of prescriptions rated with MAI, 9 months, Mean (SD), Intervention vs Control; RR (95%CI) | Equivocal | No | Muth et al., 201877 |
| Medication change | Cumulative changes in reference prescriptions during the nine-month follow-up.[Data analysed retrospectively from von Buedingen 2018] | NA | NA | Muth et al., 201877 |
| Maximum of medication changes 0-6 months[Data analysed retrospectively from von Buedingen 2018] | NA | NA | Muth et al., 201877 |
| Maximum of medication changes during 6-9 month[Data analysed retrospectively from von Buedingen 2018] | NA | NA | Muth et al., 201877 |
| Number of changes per reference prescription [Lists the most frequently changed drugs, not reported here][Data analysed retrospectively from von Buedingen 2018] | NA | NA | Muth et al., 201877 |
| Number of medication changes per patient 0-6 months[Data analysed retrospectively from von Buedingen 2018] | NA | NA | Muth et al., 201877 |
| Number of medication changes per patient 6-9 months [Data analysed retrospectively from von Buedingen 2018] | NA | NA | Muth et al., 201877 |
| Number of medication changes per patient over the nine-month period [Data analysed retrospectively from von Buedingen 2018] | NA | NA | Muth et al., 201877 |
| Proportion of patients showing at least one medication change over the nine-month period [Data analysed retrospectively from von Buedingen 2018] | NA | NA | Muth et al., 201877 |
| Medication changes (multivariate model) [Data analysed retrospectively from von Buedingen 2018] | Positive | Yes | Muth et al., 201877 |
| Medication complexity | Medication Regimen Complexity Index (MRCI) at 6 months, Intervention vs Control | Negative | No | Muth et al., 201877 |
| Medication Regimen Complexity Index (MRCI) at 9 months, Intervention vs Control | Negative | No | Muth et al., 201877 |
| Medication Regimen Complexity Index T1-T0, Intervention vs Control | Negative | No | Muth et al., 201676 |
| Medication Regimen Complexity Index T2-T0, Intervention vs Control | Negative | No | Muth et al., 201676 |
| Medication discrepancy | Medication reconciliation: Number of discrepancies, Intervention vs Control | Positive | NR | Fried et al., 201770 |
| Medication reconciliation: Proportion of patients for which the feedback report noted discrepancies in the medications patients reported taking at home and the medications in their record, Intervention vs Control | Negative | NR | Fried et al., 2017 |
| Number and types of medication discrepancies between pharmacists and clinicians at the time of hospital admission [Reports on number of intentional documented, intentional not documented and unintentional discrepancies, not reported here] | NA | NA | Chiarelli et al., 202068 |
| Number of deviations in medical drugs per patient at baseline when reconciling primary care physicians’ documentationwith patients’ drug intake at homein terms of dosages differing from those prescribed,modified intake modalities, or continued use of drugs that should have been discontinued. | NA | NA | Koberlein-Neu et al., 201671 |
| Medication errors | Medication reconciliation: Proportion of medication reconciliation errors corrected (bivariate analysis), Intervention vs Control (Control N=32) | Positive | Yes | Fried et al., 201770 |
| Medication interaction | Number of Drug-drug interaction (contraindicated) identified in the frame of the recognition/reconciliation process at hospital discharge | NA | NA | Chiarelli et al., 202068  |
| Number of Drug-drug interaction (major) identified in the frame of the recognition/reconciliation process at hospital discharge | NA | NA | Chiarelli et al., 202068 |
| Mental ability | Difference in mini‐mental state examination (MMSE) at 3 months | NR | NR | Boersma et al., 201965 |
| Mortality | 1 year post-operative mortality | NR | NR | Boersma et al., 201965 |
| 30-day mortality, Patients whose medications were deprescribed vs Patients whose medications were not deprescribed | Negative | No | Russell et al., 201981 |
| 90-day mortality, Patients whose medications were deprescribed vs Patients whose medications were not deprescribed | Negative | No | Russell et al., 201981 |
| Death or any new fracture, Intervention vs Control | Equivocal | No | Komagamine et al., 201772 |
| Death, Intervention vs Control | Negative | No | Komagamine et al., 201772 |
| Deaths | Positive | No | Curtin et al., 202069 |
| Number of patients 3 month postoperative mortality, Intervention vs control | Negative | No | Boersma et al., 201965 |
| Percentage of death, 0-12 months, Intervention vs Control | Negative | No | Campins et al., 201767 |
| Percentage of death, 0-3 months, Intervention vs Control | Negative | No | Campins et al., 201767 |
| Percentage of death, 0-6 months, Intervention vs Control | Negative | No | Campins et al., 201767 |
| Number of drugs | Fall in number of prescriptions | NA | NA | Muth et al., 201676 |
| Number of drugs 'other' as a consequence of the recognition/reconciliation process involving pharmacists and clinicians [Rationale for deprescribing] | NA | NA | Chiarelli et al., 202068  |
| Number of medications at 90 days, Patients whose medications were deprescribed vs Patients whose medications were not deprescribed | Positive | No | Russell et al., 201981 |
| Number of medications at discharge (including those dose-reduced), Patients whose medications were deprescribed vs Patients whose medications were not deprescribed | Positive | Yes | Russell et al., 201981 |
| Number of medications successfully deprescribed during IP stay [Lists no of medications deprescribed by type, not reported here] | NA | NA | Potter et al., 201980 |
| Number of new drug prescriptions in intervention group [changes reported by AnatomicalTherapeutic Chemical (ATC) drug groups, not recorded here] | NA | NA | Campins et al., 201767 |
| Total number of drug administrations saved in RACFs over the 90-day period | NA | NA | Russell et al., 201981 |
| Total number of drugs per patient[Data analysed retrospectively from von Buedingen 2018] | NA | NA | Muth et al., 201877 |
| Inhospital medications at hospital discharge, Intervention vs Control | Positive | Yes | Petersen et al., 201878 |
| Mean change in the number of regular prescriptions at 3 months, Intervention vs Control (N=98/130 data available) | Positive | Yes | Curtin et al., 202069 |
| Mean number of drugs prescribed, Intervention vs Control | Positive | Yes | Campins et al., 201767 |
| Number of drugs at T1-T0, Intervention vs Control | Negative | No | Muth et al., 201676 |
| Number of drugs at T2-T0, Intervention vs Control | Positive | No | Muth et al., 201676 |
| Number of medications at 90 days (bivariate analysis), Intervention vs Control | Positive | No | Fried et al., 201770 |
| Number of medicines at 6 months, patients with a decrease in START criteria (13) vs patients with no decrease in START criteria (71) | Positive | No | San-José et al., 202082 |
| Number of medicines at 6 months, patients with a decrease in STOPP criteria (32) vs patients with no decrease in STOPP criteria (52) | Positive | Yes | San-José et al., 202082 |
| Number of medicines prescribed, pre vs post intervention | Positive | NR | McCarthy et al 201774 |
| Number of medicines, baseline vs at 6 months | Positive | No | San-José et al., 202082 |
| Number of medicines, baseline vs at the end of the intervention | Positive | No | San-José et al., 202082 |
| Number of new prescriptions at 12 months, Intervention vs Control | Negative | NR | Campins et al., 201767 |
| Number of new prescriptions at 3 months, Intervention vs Control | Negative | NR | Campins et al., 201767 |
| Number of new prescriptions at 6 months, Intervention vs Control | Positive | NR | Campins et al., 201767 |
| Number of prehospital medications thatwere unknown to the hospital treatment team identified by Shed-MEDs, Intervention vs control | Negative | NR | Petersen et al., 201878 |
| Number of prescriptions at 6 months, Intervention vs Control | Negative | No | Muth et al., 201877 |
| Number of prescriptions at 9 months, Intervention vs Control | Negative | No | Muth et al., 201877 |
| Prehospital medications at hospital discharge, Intervention vs Control | Positive | No | Petersen et al., 201878 |
| PRN medications at hospital discharge, Intervention vs Control | Negative | No | Petersen et al., 201878 |
| Scheduled medications at hospital discharge, Intervention vs Control | Positive | Yes | Petersen et al., 201878 |
| Total medications at hospital discharge, Intervention vs Control | Positive | Yes | Petersen et al., 201878 |
| Total number of fall-risk increasing drugs at discharge, Invervention vs Control [Data broken down further in paper for no of fall-risk increasing drugs at discharge: 0-2, 3-5, 6 or more, not reported here]. | Positive | Yes | Komagamine et al., 20178 |
| Total number of medications at discharge, Intervention vs Control [Data broken down further in paper for no of medications at discharge: 0-4, 5-8, 9-12, 13 or more, not reported here] | Positive | Yes | Komagamine et al., 201772 |
| Total number of PIMs (defined based on the 2015 American Geriatric Society Beers Criteria) at discharge, Intervention vs Control. [Data broken down further in paper for no ofPIMS at discharge: 0-1, 2-3, 4 or more, not reported here]. | Positive | Yes | Komagamine et al., 201772 |
| Number of START criteria | Number of patients with a decrease in the number of START criteria at 6 months | NA | NA | San-José et al., 202082 |
| Number of patients with a decrease in the number of START criteria at the end of the intervention | NA | NA | San-José et al., 202082 |
| Number of START criteria, baseline vs at 6 months | Positive | Yes | San-José et al., 202082 |
| Number of START criteria, baseline vs at the end of the intervention | Positive | Yes | San-José et al., 202082 |
| Proportion of patients with 0,1,2 START criteria, baseline vs at 6 months | NA | NA | San-José et al., 202082 |
| Proportion of patients with 0,1,2 START criteria, baseline vs at the end of the intervention | NA | NA | van Summeren et al., 201783 |
| Changes in the START criteria: Angiotensin Converting Enzyme (ACE) inhibitor with systolic heart failure, beginning vs at 6 months | Positive | NR | San-José et al., 202082 |
| Changes in the START criteria: Angiotensin Converting Enzyme (ACE) inhibitor with systolic heart failure, beginning vs end of intervention | Positive | NR | San-José et al., 202082 |
| Changes in the START criteria:Appropriate beta-blocker (bisoprolol, nebivolol, metoprolol or carvedilol) with stable systolic heart failure, beginning vs at 6 months | Positive | NR | San-José et al., 202082 |
| Changes in the START criteria:Appropriate beta-blocker (bisoprolol, nebivolol, metoprolol or carvedilol) with stable systolic heart failure, beginning vs end of intervention | Positive | NR | San-José et al., 202082 |
| Number of STOPP criteria | Number of patients with a decrease in the number of STOPP criteria at 6 months | NA | NA | San-José et al., 202082 |
| Number of patients with a decrease in the number of STOPP criteria at the end of the intervention | NA | NA | San-José et al., 202082 |
| Number of STOPP criteria, baseline vs at 6 months | Positive | Yes | San-José et al., 202082 |
| Number of STOPP criteria, baseline vs at the end of the intervention | Positive | Yes | San-José et al., 202082 |
| Proportion of patients with 0,1,2 STOPP criteria, baseline vs at 6 months | NA | NA | San-José et al., 202082 |
| Proportion of patients with 0,1,2 STOPP criteria, baseline vs at the end of the intervention | NA | NA | San-José et al., 202082 |
| Changes in the STOPP criteria: Benzodiazepines for 4 weeks, beginning vs at 6 months | Positive | NR | San-José et al., 202082 |
| Changes in the STOPP criteria: Benzodiazepines for 4 weeks, beginning vs end of intervention | Positive | NR | San-José et al., 202082 |
| Changes in the STOPP criteria: Benzodiazepines: Drugs that predictably increase the risk of falls in older people, beginning vs at 6 months | Positive | NR | San-José et al., 202082 |
| Changes in the STOPP criteria: Benzodiazepines: Drugs that predictably increase the risk of falls in older people, beginning vs end of intervention | Positive | NR | San-José et al., 202082 |
| Pain | Pain (von Korff Index) at 6 months, Intervention vs Control | Negative | No | Muth et al., 201877 |
| Pain (von Korff Index) at 9 months, Intervention vs Control | Equivocal | No | Muth et al., 201877 |
| Visual Rating Scale (pain assessment) T1-T0, Intervention vs Control | Equivocal | No | Muth et al., 201676 |
| Visual Rating Scale (pain assessment) T2-T0, Intervention vs Control | Equivocal | No | Muth et al., 201676 |
| Patient/drug monitoring | Number of drugs monitored as a consequenceof the recognition/reconciliation process involving pharmacists and clinicians [Rationale for deprescribing] | NA | NA | Chiarelli et al., 202068  |
| Prescribing omission | Instances of potential prescribing omission | NA | NA | Lesende et al., 201379 |
| Instances of potential prescribing omission according to START criteria [Lists common types of PPO, not recorded here] | NA | NA | Lesende et al., 201379 |
| Numbers of patients with PPOs in the Control group, before intervention vs after intervention | Mixed | NR | Boersma et al., 201965 |
| Numbers of patients with PPOs in the Intervention group, before intervention vs after intervention | Positive | NR | Boersma et al., 201965 |
| Prioritised health outcome | Prioritised health outcome: Maintaining independence (n=7 patients) observed medication change [Number of observed medication changes per therapeutic subgroup noted but not recorded here] | NA | NA | van Summeren et al., 201783 |
| Prioritised health outcome: Maintaining independence (n=7 patients) proposed medication change [Number of proposed medication changes per therapeutic subgroup noted but not recorded here] | NA | NA | van Summeren et al., 201783 |
| Prioritised health outcome: Reducing other symptoms (n=5 patients) observed medication change [Number of observed medication changes per therapeutic subgroup noted but not recorded here] | NA | NA | van Summeren et al., 201783 |
| Prioritised health outcome: Reducing other symptoms (n=5 patients) proposed medication change [Number of proposed medication changes per therapeutic subgroup noted but not recorded here] | NA | NA | van Summeren et al., 201783 |
| Prioritised health outcome: Reducing pain (n=1 patients) observed medication change [Number of observed medication changes per therapeutic subgroup noted but not recorded here] | NA | NA | van Summeren et al., 201783 |
| Prioritised health outcome: Reducing pain (n=1 patients) proposed medication change [Number of proposed medication changes per therapeutic subgroup noted but not recorded here] | NA | NA | van Summeren et al., 201783 |
| Prioritised health outcome: Remaining alive (n=6 patients) proposed medication change [Number of proposed medication changes per therapeutic subgroup noted but not recorded here] | NA | NA | van Summeren et al., 201783 |
| Prioritised health outcome: Remaining alive observed medication change (n=6 patients) [Number of observed medication changes per therapeutic subgroup noted but not recorded here] | NA | NA | van Summeren et al., 201783 |
| Proposed change in medication | Mean number of recommendations per intervention group patient | NA | NA | Campins et al., 201767 |
| Number of deprescribing instances identified [Rationale for deprescribing listed but not reported here] | NA | NA | Potter et al., 201980 |
| Number of deprescribing opportunities identified | NA | NA | McDonald et al., 201975 |
| Number of medications identified for deprescribing per patient [Lists no of medications deprescribed by type, not reported here] | NA | NA | Potter et al., 201980 |
| Number of medications per patient targeted for discontinuation | NA | NA | Curtin et al., 202069 |
| Number of medications per patient targeted for dose reduction | NA | NA | Curtin et al., 202069 |
| Number of participants for whom at least 1 deprescribing recommendation was made in the intervention group | NA | NA | Curtin et al., 202069 |
| Number of planned outpatient initiation of deprescribing | NA | NA | Potter et al., 201980 |
| Number of recommendations made by the clinical pharmacist due to drug discontinuation in intervention group [changes reported by Anatomical Therapeutic Chemical (ATC) drug groups, not recorded here] | NA | NA | Campins et al., 201767 |
| Percentage of patients with at least 1 recommendation | NA | NA | Campins et al., 201767 |
| Proposed decreasing medication dose (Number of times) [Number of proposed medication changes per therapeutic subgroup noted but not recorded here] | NA | NA | van Summeren et al., 201783 |
| Proposed dose increase of medication (Number of times) [Number of proposed medication changes per therapeutic subgroup noted but not recorded here] | NA | NA | van Summeren et al., 201783 |
| Proposed medication switch (Number of times) [Number of proposed medication changes per therapeutic subgroup noted but not recorded here] | NA | NA | van Summeren et al., 201783 |
| Proposed stopping of medication (Number of times) [Number of proposed medication changes per therapeutic subgroup noted but not recorded here] | NA | NA | van Summeren et al., 201783 |
| Proposed unknown medication change (Number of times) [Number of proposed unknown medication changes per therapeutic subgroup noted but not recorded here] | NA | NA | van Summeren et al., 201783 |
| Recommendations: 1+ recommendation(s) to discontinue, decrease a PIM and/or simplify a medication regimen, Intervention vs Control [Number of recommendations broken down further by rationale but not recorded here] | NA | NA | Fried et al., 201770 |
| Total number of proposed medication changes [Number of proposed and observed medication changes per therapeutic subgroup noted but not recorded here] | NA | NA | van Summeren et al., 201783 |
| 1+ clinician recommendation(s) (adjusted for covariates and accounting for clustering of patients by clinician) | Positive | Yes | Fried et al., 201770 |
| Pursue offer to change drugs | Resident identified suboptimal changes not included in prescribing recommendations, Interventon vs control | Positive | No | Boersma et al., 201965 |
| Quality of life | Desired life duration (years) at 6 months, Intervention vs Control | Negative | No | Muth et al., 201877 |
| Desired life duration (years) at 9 months, Intervention vs Control | Positive | No | Muth et al., 201877 |
| EQ-5D, index T1-T0, Intervention vs Control | Negative | No | Muth et al., 201676 |
| EQ-5D, index T2-T0, Intervention vs Control | Negative | No | Muth et al., 201676 |
| Expected life duration (years) at 6 months, Intervention vs Control | Equivocal | No | Muth et al., 201877 |
| Expected life duration (years) at 9 months, Intervention vs Control | Positive | No | Muth et al., 201877 |
| Health related quality of life EQ-5D index at 6 months(percentage), Intervention vs Control | Positive | No | Muth et al., 201877 |
| Health related quality of life EQ-5D index at 9 months (percentage), Intervention vs Control; Adjusted mean difference | Positive | No | Muth et al., 201877 |
| HRQL- 30 days, Summary - SF8, Deprescribing at Discharge vs Not Deprescribing at Discharge | Negative | No | Russell et al., 201981 |
| HRQL- 90 days, Summary - SF8, Deprescribing at Discharge vs Not Deprescribing at Discharge | Equivocal | No | Russell et al., 201981 |
| Mean change in self-reported and proxy-measured quality of life outcomes (ICECAP-O) at baseline and 3-month follow-up, Intervention vs Control | Negative | No | Curtin et al., 202069 |
| Mean change in self-reported and proxy-measured quality of life outcomes (QUALIDEM) at baseline and 3-month follow-up, Intervention vs Control | Positive | No | Curtin et al., 202069 |
| Patients’ quality of life (SF-12 – physical sum scale), Intervention phase 1 vs Control | Equivocal | No | Koberlein-Neu et al., 201671 |
| Patients’ quality of life (SF-12 – psychological sum scale), Intervention phase 1 vs Control | Equivocal | No | Koberlein-Neu et al., 201671 |
| Self-reported quality of life (EuroQoL-5D) change from the baseline score, Intervention vs Control | Negative | No | Campins et al., 201767 |
| Social support | Attained level of social support | NR | NR | Koberlein-Neu et al., 201671 |

**SAFTEY OUTCOMES**

| **Outcome** | **Outcome definition** | **Impact on deprescribing** | **Statistical significance** | **Study** |
| --- | --- | --- | --- | --- |
| Adverse drug event (unspecified) | Adverse drug event if the medication was discontinued due to its harmful effect during hospital stay, Intervention vs Control | Positive | No | Komagamine et al., 201772 |
| Number of ADR symptoms T1-T0, Intervention vs Control | Positive | No | Muth et al., 201676 |
| Number of ADR symptoms T2-T0, Intervention vs Control | Negative | No | Muth et al., 201676 |
| Occurrence of ADEs within 30 days of hospital discharge, Intervention period vs Control period | Positive | No | McDonald et al., 201975 |
| Adverse event (unspecified) | Number of potential adverse effects of deprescribing reported to the research team during the conduct of the trial. | Positive | NA | Curtin et al., 202069 |
| Proportion of patients with an adverse event within 30 days of hospital discharge, Intervention period vs Control period | Positive | No | McDonald et al., 201975 |
| Cardiovascular event | Adverse events during hospital stay: Cardiovascular event, Intervention vs control | Positive | No | Komagamine et al., 201772 |
| Cardiovascular event, Intervention vs control | Positive | No | Komagamine et al., 201772 |
| Delirium | Adverse events during hospital stay: Delirium, Intervention vs control | Positive | No | Komagamine et al., 201772 |
| Drug discontinuation | Proportion of deprescribed PIMs stopped during the intervention phase [Records Most Common Classes of Drugs Identified as Potentially Inappropriate and deprescribed and relative changes in deprescribing vs control period for each class of potentially inappropriate therapy, not reported here] | NA | NA | McDonald et al., 201975 |
| Hospital admission/readmission/visits | 30-day readmission, Patients whose medications were deprescribed vs Patients whose medications were not deprescribed | Negative | No | Russell et al., 201981 |
| 90-day readmission, Patients whose medications were deprescribed vs Patients whose medications were not deprescribed | Negative | No | Russell et al., 201981 |
| Days in hospital (aggregated for both follow-ups: T1+T2−T0), Intervention vs Control | Positive | NR | Muth et al., 201676 |
| Multiple readmission, Patients whose medications were deprescribed vs Patients whose medications were not deprescribed | Negative | No | Russell et al., 201981 |
| Number of hospital stays (aggregated for both follow-ups: T1+T2−T0), Intervention vs Control | Positive | NR | Muth et al., 201676 |
| Single readmission, Patients whose medications were deprescribed vs Patients whose medications were not deprescribed | Negative | No | Russell et al., 201981 |
| Unplanned hospital admission, Intervention vs control | Positive | No | Komagamine et al., 201772 |
| In hospital death | Adverse events during hospital stay: In-hospital death, Intervention vs control | Positive | No | Komagamine et al., 201772 |
| Number of patients had deprescribing opportunities identified and who died during admission during the control phase | NA | NA | McDonald et al., 201975 |
| Number of patients had deprescribing opportunities identified and who died during admission during the intervention phase | NA | NA | McDonald et al., 201975 |
| Infection | Adverse events during hospital stay: In-hospital infection (requiring antibiotic treatment), Intervention vs control | Positive | No | Komagamine et al., 201772 |
| Medication interaction | Fall in number of potentiallysevere drug–drug interactions | NA | NA | Muth et al., 201676 |
| Patient/drug monitoring | Number of patients that would likely require outpatient clinic follow-up to ensure monitoringof safety | NA | NA | Potter et al., 201980 |

**ACCEPTABILITY OUTCOMES**

| **Outcome** | **Outcome definition** | **Impact on deprescribing** | **Statistical significance** | **Study** |
| --- | --- | --- | --- | --- |
| Communication | Patient Assessment of Care for Chronic Conditions PACIC >10 (adjusted for covariates and accounting for clustering of patients by clinician) | Positive | No | Fried et al., 201770 |
| Patient outcome: Medication-related communication (bivariate analysis), Intervention vs Control (N=55) | Positive | Yes | Fried et al., 201770 |
| Patient outcome: Patient Assessment of Care for Chronic Conditions (PACIC) >10 (bivariate analysis), Intervention vs Control | Positive | No | Fried et al., 201770 |
| Clinician Outcome: Facilitative communication (bivariate analysis), Intervention vs Control (N=55) | Positive | Yes | Fried et al., 201770 |
| Clinician Outcome: Medication-related communication (bivariate analysis), Intervention vs Control (N=55) | Positive | Yes | Fried et al., 201770 |
| Drug discontinuation | Number of GPs stopping inappropriate non-steroidal anti-inflammatory drugs prescriptions for the case vignette | OMQ/NA | NA | Muth et al., 201676 |
| Drug substitution | Number of GPs substituting inappropriate non-steroidal anti-inflammatory drugs prescriptions with appropriate analgesics for the case vignette | OMQ/NA | NA | Muth et al., 201676 |
| Participation | Patient outcome: Active participation (bivariate analysis), Intervention vs Control (N=55) | Positive | Yes | Fried et al., 201770 |
| Pursue offer to change drugs | Number of patients who accepted vs refused deprescribing intervention[Acceptability defined as patients who had given written consent to receive the intervention] | OMQ/NA | NA | Komagamine et al., 201872 |
| Number of patients who did not pursue an offer by their GP to change drugs (stop, reduce, substitute) [Rationale for patient non-acceptance reported but not recorded here] | OMQ/NA | NA | Zechmann et al., 201984 |
| Number of offers to change drugs pursued after Shared Decision Making [List of drugs that patients chose not to implement their GPs’ recommended changes are reported in Appendix 4, not reported here] | OMQ/NA | NA | Zechmann et al., 201984 |
| Overall changes to initial deprescribing recommendations (per patient, n=20) | OMQ/NA | NA | Petersen et al., 201878 |
| Recommendations changed from continued to deprescribed (per patient, n=20) | OMQ/NA | NA | Petersen et al., 201878 |
| Recommendations changed from deprescribed to continued (per patient, n=20) | OMQ/NA | NA | Petersen et al., 201878 |
| Recommendations changed to different dose or tempo of treatment (e.g. stop to decrease dose or start as outpatient to start now) | OMQ/NA | NA | Petersen et al., 201878 |
| GP acceptance vs refusal of pharmaceutical recommendations to change the dose of an existing drug | OMQ/NA | NA | Koberlein-Neu et al., 201671 |
| GP acceptance vs refusal of pharmaceutical recommendations to start prescribing a new drug | OMQ/NA | NA | Koberlein-Neu et al., 201671 |
| GP acceptance vs refusal of pharmaceutical recommendations to stop medications | OMQ/NA | NA | Koberlein-Neu et al., 201671 |
| Number of consultations accepted by clinician [Type of DRP and consultations accepted] | OMQ/NA | NA | Chiarelli et al., 202068  |
| Number of deprescribing recommendations accepted and implemented by the attending physicians [rationale for deprescribing as per STOPP criteria and types of drugs deprescribed reported in supplementary material, not recorded here] | OMQ/NA | NA | Curtin et al.,202068 |
| Number of GPs accepting all STOPP/START criteria | OMQ/NA | NA | Lesende et al., 201379 |
| Number of pharmacist recommended dose adjustment drug changes implemented in intervention group [changes reported by Anatomical Therapeutic Chemical (ATC) drug groups, not recorded here] | OMQ/NA | NA | Campins et al., 201767 |
| Number of pharmacist recommended drug discontinuation changes implemented after discussion with physician in intervention group [changes reported by Anatomical Therapeutic Chemical (ATC) drug groups, not recorded here] | OMQ/NA | NA | Campins et al., 201767 |
| Number of pharmacist recommended drug substitution changes implemented after discussion with physician in intervention group [changes reported by Anatomical Therapeutic Chemical (ATC) drug groups, not recorded here] | OMQ/NA | NA | Campins et al., 201767 |
| Number of pharmacist recommended new drug prescription changes implemented after discussion with physician in intervention group [changes reported by Anatomical Therapeutic Chemical (ATC) drug groups, not recorded here] | OMQ/NA | NA | Campins et al., 201767 |
| Total number of pharmacist recommended drug changes implemented after discussion with physician in intervention group [changes reported by Anatomical Therapeutic Chemical (ATC) drug groups, not recorded here] | OMQ/NA | NA | Campins et al., 201767 |
| Total number of recommendations on drug therapy implemented vs refused by the physicians | OMQ/NA | NA | Koberlein-Neu et al., 201671 |
| Total number of START recommendations GPs adhered to [Lists types of drugs and rationale for which START recommendations were not accepted are reported, but not recorded here] | OMQ/NA | NA | Lesende et al., 201379 |
| Total number of STOPP recommendations GPs adhered to [Lists types of drugs and rationale for which STOPP recommendations were not accepted are reported, but not recorded here] | OMQ/NA | NA | Lesende et al., 201379 |
| Total number of STOPP/START recommendations GPs adhered to [Lists types of drugs and rationale for which START/STOPP recommendations were not accepted are reported, but not recorded here] | OMQ/NA | NA | Lesende et al., 201379 |
| Satisfaction | Satisfaction with shared decision-making at 6 months, Man-Son-Hing Scale, Intervention vs Control | OMQ/NA | NA | Muth et al., 201877 |
| Satisfaction with shared decision-making at 9 months, Man-Son-Hing Scale, Intervention vs Control | OMQ/NA | NA | Muth et al., 201877 |
| Accceptability of the intervention | NA | NA | McCarthy et al 201774 |
| GP (number) experience of communication with HCA | OMQ/NA | NA | Muth et al., 201676 |
| GP (number) experience of GP-patient consultation | OMQ/NA | NA | Muth et al., 201676 |
| GP (number) experience with CDSS | OMQ/NA | NA | Muth et al., 201676 |
| GP satisfaction with interventions | OMQ/NA | NA | Muth et al., 201676 |
| HCA (number) experience with CDSS | OMQ/NA | NA | Muth et al., 201676 |
| HCA reported difficulties with intervention | OMQ/NA | NA | Muth et al., 201676 |
| HCA satisfaction with interventions | OMQ/NA | NA | Muth et al., 201676 |
| Number of GPs requiring support in using CDSS | OMQ/NA | NA | Muth et al., 201676 |
| Perception of usefulness of the tool in daily practice - Number of GPs who said they believed that the STOPP/START tool met the needs of their patients | OMQ/NA | NA | Lesende et al., 201379 |
| Perception of usefulness of the tool in daily practice - Number of GPs who said they believed that the STOPP/START tool was feasible to follow in routine practice [Lists reasons why 7 GPs felt the tool was not feasible, not recorded here - see notes] | OMQ/NA | NA | Lesende et al., 201379 |
| Perception of usefulness of the tool in daily practice - Number of GPs who said they trust in STOPP/START tool recommendations | OMQ/NA | NA | Lesende et al., 201379 |
| Technical usability of the CDSS rated by GPs | OMQ/NA | NA | Muth et al., 201676 |
| Technical usability of the CDSS rated by HCAs | OMQ/NA | NA | Muth et al., 201676 |
| Time | GP time requirement per patient | OMQ/NA | NA | Muth et al., 201676 |
| GP time to undertake review | OMQ/NA | NA | McCarthy et al 201774 |
| HCA time requirement per patient | OMQ/NA | NA | Muth et al., 201676 |

**OTHER OUTCOMES**

| **Outcome** | **Outcome definition** | **Impact on deprescribing** | **Statistical significance** | **Short ref** |
| --- | --- | --- | --- | --- |
| Drugs deprescribed | Effect of deprescribing on medication class | Equivocal | No | Russell et al., 201981 |
| Functional status | Barthel index at 6 months, patients with a decrease in START criteria (13) vs patients with no decrease in START criteria (71) | NA | No | San-José et al., 202082 |
| Barthel index at 6 months, patients with a decrease in STOPP criteria (32) vs patients with no decrease in STOPP criteria (52) | NA | No | San-José et al., 202082 |
| Proposed change in medication | Number of recommendations made by the clinical pharmacist due to dose adjustment in intervention group [changes reported by Anatomical Therapeutic Chemical (ATC) drug groups, not recorded here] | NA | NA | Campins et al., 201767 |
| Number of recommendations made by the clinical pharmacist due to drug substitution in intervention group [changes reported by Anatomical Therapeutic Chemical (ATC) drug groups, not recorded here] | NA | NA | Campins et al., 201767 |
| Number of recommendations made by the clinical pharmacist due to new drug prescription in intervention group [changes reported by Anatomical Therapeutic Chemical (ATC) drug groups, not recorded here] | Unclear | NA | Campins et al., 201767 |
| Total number of recommendations made by the clinical pharmacist due to drug inappropriateness (drug discontinuation, or dose adjustment or drug substitution, or new drug prescription) in intervention group [changes reported by Anatomical Therapeutic Chemical (ATC) drug groups, not recorded here] | NA | NA | Campins et al., 201767 |