Additional tables from: Ryan R, Santesso N, Lowe D, Hill S, Grimshaw JM, Prictor M, Kaufman C, Cowie G, Taylor M. Interventions to improve safe and effective medicines use by consumers: an overview of systematic reviews. Cochrane Database of Systematic Reviews 2014, Issue 4. Art. No.: CD007768. DOI: 10.1002/14651858.CD007768.pub3.

**Characteristics of included reviews**

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| **Aaserud 2006** | |
| **Review question/objective:**  What are the effects of pharmaceutical pricing and purchasing policies on medicines use, healthcare utilisation, patient outcomes and costs? | |
| **Studies** | Search date up to: September 2005  Number of studies related to medicines use:  11  Study design:  ITS (simple and repeated measure designs; some with controls), CBA |
| **Participants** | Patients: elderly people aged 65 years and older; otherwise not specified. Medicines involved included nitrates, beta-blockers, ACE inhibitors, calcium channel blockers, histamine H2 receptor antagonists, proton pump inhibitors, antidiabetic agents, antibiotics, and antidepressants.  Carers: not specified.  Professionals: not specified. |
| **Setting** | Not specified |
| **Interventions** | Reference pricing; index pricing; other |
| **Maps to intervention taxonomy categories** | Improving quality |
| **Outcomes** | Adverse events, health status and wellbeing, system benefits |
| **Quality of the review (AMSTAR)** | 10 |
| **Quality of the included studies** | Overall, included studies were generally well designed but some had serious limitations in design and implementation. Transferability across populations and settings may also be limited. |

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| **Al-aqeel 2011** | |
| **Review question/objective:**  What is the effectiveness of interventions to improve adherence to antiepileptic medications in adults and children with epilepsy? | |
| **Studies** | Search date up to: June 2010  Number of studies related to medicines use:  6  Study design: RCT, CT |
| **Participants** | Patients: adults and children prescribed antiepileptic medicines.  Carers: parents of children with epilepsy.  Professionals: none. |
| **Setting** | Outpatient |
| **Interventions** | Identifying cues (Implementation intervention); motivational interviewing; education and psychosocial therapy; patient reminders plus counselling leaflet; patient education, usual care |
| **Maps to intervention taxonomy categories** | Providing information or education, Supporting behaviour change |
| **Outcomes** | Health behaviour, knowledge and understanding |
| **Quality of the review (AMSTAR)** | 7 |
| **Quality of the included studies** | All interventions were assessed by single studies which had unclearly reported allocation, blinding and randomisation (sequence generation) which may contribute potential sources of bias in the majority of studies. No studies assessed adverse events or cost. |

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| **Amico 2006** | |
| **Review question/objective:**  What are the effects of interventions to improve adherence to antiretroviral therapy (ART) for people living with HIV? | |
| **Studies** | Search date: from 1996 up to December 2004  Number of studies related to medicines use:  24  Study design:  RCT, CCT, CBA |
| **Participants** | Patients: people with Human Immunodeficiency Virus (HIV) and receiving antiretroviral therapy.  Carers: informal caregivers.  Professionals: none. |
| **Setting** | Community, not specified |
| **Interventions** | Any intervention to improve adherence (support and referral interventions; education; feedback on viral load; reminder or calendar packaging or pill boxes; alarms; information provision, counselling and support; problem solving skills training; self-management medication training; harm reduction training; directly observed therapy; incentives; medication diaries); control |
| **Maps to intervention taxonomy categories** | Providing information or education, Supporting behaviour change, Acquiring skills and competencies, Support, Minimising risks or harms |
| **Outcomes** | Health behaviour |
| **Quality of the review (AMSTAR)** | 4 |
| **Quality of the included studies** | Included study populations were generally small and may have been too small (based on power calculations) to detect effects of interventions. Half (52%) of included studies were RCTs, others included were of non-randomised or within-group design. Methodological quality was not formally assessed so the risk of bias is unknown. |

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| **Argarwal 2011** | |
| **Review question/objective:**  Does home blood pressure monitoring overcome therapeutic inertia and improve hypertension control? | |
| **Studies** | Search date: from 1966 up to May 2010  Number of studies related to medicines use: 37  Study design:  RCT |
| **Participants** | Patients: people taking antihypertensive medicines including haemodialysis patients, otherwise not described.  Carers: none.  Professionals: none. |
| **Setting** | Home, primary care, community, hospital, outpatient |
| **Interventions** | Home blood pressure monitoring; clinic blood pressure monitoring |
| **Maps to intervention taxonomy categories** | Acquiring skills and competencies, Minimising risks or harms |
| **Outcomes** | Health behaviour, health status and wellbeing |
| **Quality of the review (AMSTAR)** | 5 |
| **Quality of the included studies** | The quality for each study was not described, but studies were typically of moderate to high quality. |

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| **Austvoll-Dahlgren 2008** | |
| **Review question/objective:**  What are the effects of cap and co-payment (cost-sharing) policies on medicines use, healthcare utilisation, health outcomes and costs? | |
| **Studies** | Search date up to: September 2007  Number of studies related to medicines use:  21  Study design:  RCT, ITS (simple and repeated measure designs), CBA |
| **Participants** | Patients: families; employees in large companies; community mental health service users; people with schizophrenia; elderly people (high, low and mixed income groups); nursing home residents; low income populations (including those receiving social security, families with dependent children). Medicines involved included antihypertensives, anticoagulants, antithrombotics, nitrates, corticosteroids, anticonvulsants, neuroleptics, antibiotics, diabetic agents, thyroid agents, beta-blockers, antiparkinsonian drugs, antipsychotics, mood stabilizers and antidepressants.  Carers: not specified.  Professionals: not specified. |
| **Setting** | Primary care, hospital, long term care, community, home, private organisation, not specified |
| **Interventions** | Cap (limits on: number of prescriptions reimbursed, number of repeat prescriptions, or number of days before prescriptions can be re-supplied); fixed co-payments (fixed co-payment per branded or generic medicine, income based partial co-payments up to limit, co-payments in different schedules, phased co-payment increases); ceiling (based on proportion of income), including fixed co-payments with ceiling; co-insurance with ceiling (where co-payment was based on income, or ceiling was income based); fixed co-payments and co-insurance with ceiling; tier co-payments (based on different numbers of tiers according to medicine types); no restrictions; full medicine coverage; no medicine coverage; alternate medicine cap and co-payment policies (different schedules, tiers, ceilings) |
| **Maps to intervention taxonomy categories** | Improving quality |
| **Outcomes** | Health status and wellbeing, system benefits, health behaviour |
| **Quality of the review (AMSTAR)** | 10 |
| **Quality of the included studies** | Individual comparisons were typically based on small numbers of studies. Only 1 included study was randomised, while the majority (2/3rds) of included studies had some methodological limitations that may introduce bias, with 3 studies having serious limitations in design and implementation. |

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| **Bain-Brickley 2011** | |
| **Review question/objective:**  Do behavioural and medical interventions improve paediatric adherence to antiretroviral therapy? | |
| **Studies** | Search date up to: From January 1980 to July 2010  Number of studies related to medicines use: 4  Study design: RCT, CT |
| **Participants** | Patients: children (age less than 18 years) with HIV on ART.  Carers: adult parents and carers of children with HIV.  Professionals: none. |
| **Setting** | Community, outpatient, primary care |
| **Interventions** | Counselling plus medication diary; home based-education plus support; limited education and support; peer support group therapy; varied treatment regimens; usual care |
| **Maps to intervention taxonomy categories** | Providing information or education, Supporting behaviour change, Support |
| **Outcomes** | Health behavior, knowledge and understanding, health status and wellbeing |
| **Quality of the review (AMSTAR)** | 9 |
| **Quality of the included studies** | There were a limited number of included trials, and half had methodological weaknesses including lack of randomisation which may strongly predispose them to bias. |

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| **Bainbridge 2006** | |
| **Review question/objective:**  Does patient-controlled analgesia (PCA) improve clinical and healthcare utilisation outcomes post cardiac surgery when compared with nurse-controlled analgesia (NCA)? | |
| **Studies** | Search date up to: August 2005  Number of studies related to medicines use:  10  Study design:  RCT |
| **Participants** | Patients: cardiac surgery patients (coronary artery bypass graft, with or without valvular repair).  Carers: none.  Professionals: none. |
| **Setting** | Hospital, not specified |
| **Interventions** | PCA (using ketobemidone, morphine, piritramide, hydromorphone; intravenous administration, with or without limits, lockouts or infusions); NCA (ketobemidone codeine, morphine, piritramide, Demerol; administered orally and/or through infusion) |
| **Maps to intervention taxonomy categories** | Acquiring skills and competencies, Minimising risks or harms |
| **Outcomes** | Health behaviour, consumer evaluation of care, adverse events, health status and wellbeing |
| **Quality of the review (AMSTAR)** | 9 |
| **Quality of the included studies** | Many included studies were too small to detect differences between groups, and there was significant heterogeneity for many outcomes. Included studies were all of moderate methodological quality, but groups were unevenly distributed on several key characteristics, and this may predispose the results to bias. |

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| **Bayoumi 2009** | |
| **Review question/objective:**  Do medicines reconciliation interventions in primary care improve medicines discrepancies and related outcomes? | |
| **Studies** | Search date up to: March 2008  Number of studies related to medicines use: 4  Study design: RCT, BA |
| **Participants** | Patients: adult patients in primary care or ambulatory settings.  Carers: none.  Professionals: physicians, pharmacists, nurses, receptionists. |
| **Setting** | Outpatient, primary care, hospital, community, home |
| **Interventions** | Ambulatory care medicines reconciliation; post-hospital discharge medicines reconciliation; usual care |
| **Maps to intervention taxonomy categories** | Minimising risks or harms, Supporting behaviour change, Improving quality |
| **Outcomes** | Health behaviour, adverse events, system benefits |
| **Quality of the review (AMSTAR)** | 7 |
| **Quality of the included studies** | There was limited information about the clinical importance of the errors detected and none on patients’ medicines knowledge. Results are based on very few studies, only one of which was a randomised controlled trial, while the remaining lacked a control group and so were of poor design for assessing effectiveness. All included studies had methodological limitations that may introduce bias. |

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| **Bennett 2009** | |
| **Review question/objective:**  Do patient-based educational interventions improve knowledge, attitudes and pain management in cancer patients? | |
| **Studies** | Search date up to: November 2007  Number of studies related to medicines use: 21  Study design: RCT, CT, CBA |
| **Participants** | Patients: adults taking analgesics for cancer-based pain.  Carers: caregivers of adults with cancer-based pain.  Professionals: none. |
| **Setting** | Home, community, primary care, hospital |
| **Interventions** | Patient-based cancer pain management education; usual care |
| **Maps to intervention taxonomy categories** | Providing information or education, Supporting behaviour change |
| **Outcomes** | Health behaviour, knowledge and understanding, support and skills acquisition of consumer, health status and wellbeing, adverse events, system benefits |
| **Quality of the review (AMSTAR)** | 7 |
| **Quality of the included studies** | The majority of included studies had methodological limitations that may predispose them to bias, including unclear allocation concealment and blinding. |

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| **Bhogal 2006** | |
| **Review question/objective:**  Do written action plans improve the management of asthma in children and adolescents? | |
| **Studies** | Search date up to: November 2004  Number of studies related to medicines use: 4  Study design: RCT, CCT |
| **Participants** | Patients: school-aged children and adolescents with mild to severe asthma.  Carers: parents of children or adolescents with asthma. Professionals: none. |
| **Setting** | Primary care, secondary care, home |
| **Interventions** | Symptom-based written action plan; peak flow-based written action plan |
| **Maps to intervention taxonomy categories** | Supporting behaviour change, Facilitating communication and/or decision making, Acquiring skills and competencies, Minimising risks or harms |
| **Outcomes** | System benefits, health status and wellbeing, support and consumer skills acquisition, health behaviour |
| **Quality of the review (AMSTAR)** | 11 |
| **Quality of the included studies** | Overall of included trials only 1 was of good quality, 2 were assessed as of fair quality, and 1 poor quality, and these limitations may introduce bias. Of included trials, 3 were truly randomised, with allocation concealment inadequate in 1 trial and unclear in 2 trials. All but 1 trial assessed baseline comparability and adequately followed up participants. None used intention-to-treat analysis. |

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| **Bower 2006** | |
| **Review question/objective:**  Do collaborative care interventions improve the symptoms of depression and use of antidepressants in patients in primary care settings? | |
| **Studies** | Search date up to: November 2005  Number of studies related to medicines use: 32  Study design: RCT |
| **Participants** | Patients: adults with depressive symptoms or depression managed in primary care.  Carers: none.  Professionals: none. |
| **Setting** | Primary care |
| **Interventions** | Collaborative care; usual care |
| **Maps to intervention taxonomy categories** | Improving quality |
| **Outcomes** | Health behaviour, health status and wellbeing |
| **Quality of the review (AMSTAR)** | 4 |
| **Quality of the included studies** | Allocation concealment was unclear in the majority of studies and other aspects of methodological quality were not assessed; therefore the risk of bias is unclear. All results of meta-regression analysis should be interpreted with caution as they rely on observational comparisons between groups. |

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| **Buckley 2010** | |
| **Review question/objective:**  Do service organisation interventions in primary care improve secondary prevention of ischaemic heart disease by improving risk factor management and use of appropriate medicines? | |
| **Studies** | Search date up to: February 2008  Number of studies related to medicines use:  8  Study design:  RCT |
| **Participants** | Patients: adults with ischaemic heart disease (angina, previous acute myocardial infarction, coronary artery bypass graft, pericutaneous transluminal coronary angioplasty).  Carers: none.  Professionals: doctors, nurses and pharmacists. |
| **Setting** | Primary care, community |
| **Interventions** | Service organisation interventions; usual care |
| **Maps to intervention taxonomy categories** | Supporting behaviour change, Providing information or education, Improving quality |
| **Outcomes** | Health behaviour, health status and wellbeing |
| **Quality of the review (AMSTAR)** | 8 |
| **Quality of the included studies** | The included studies were typically of high quality, and at low risk of bias but interventions were heterogeneous in terms of their components. |

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| **Castelino 2009** | |
| **Review question/objective:**  Do interventions delivered by pharmacists improve suboptimal prescribing in the elderly? | |
| **Studies** | Search date up to: December 2008  Number of studies related to medicines use: 11  Study design: RCT |
| **Participants** | Patients: adults 65 years or older.  Carers: none.  Professionals: pharmacists, physicians, nurses. |
| **Setting** | Home, hospital, community, long term care, outpatient, primary care |
| **Interventions** | Multidisciplinary team including pharmacist intervention; pharmacist-delivered intervention; control; usual care |
| **Maps to intervention taxonomy categories** | Improving quality, Minimising risks or harms |
| **Outcomes** | Health behaviour, health status and wellbeing, knowledge and understanding, system benefits, adverse events, consumer evaluation of care |
| **Quality of the review (AMSTAR)** | 5 |
| **Quality of the included studies** | The majority of results were based on a small number of studies, and the methodological quality of included studies was poorly described, meaning that results may be affected by an unknown risk of bias. |

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| **Chivu 2008** | |
| **Review question/objective:**  Do interventions to promote awareness and use of folic acid supplementation in women of reproductive age improve outcomes compared to usual care? | |
| **Studies** | Search date up to: not stated, searched for studies published 1992 up to 2005  Number of studies related to medicines use: 29  Study design: RCT, CT, CBA, BA, ITS, other |
| **Participants** | Patients: women of reproductive age (15 to 49 years).  Carers: none.  Professionals: health professionals, not otherwise specified. |
| **Setting** | Primary care, outpatient, community, pharmacy, home |
| **Interventions** | Intervention to women promoting folic acid consumption; intervention to health professional promoting folic acid consumption; control |
| **Maps to intervention taxonomy categories** | Providing information or education, Supporting behaviour change |
| **Outcomes** | Consumer knowledge and understanding, health behaviour, provider knowledge and understanding |
| **Quality of the review (AMSTAR)** | 5 |
| **Quality of the included studies** | Most results were based on studies of poor design for assessing intervention effectiveness (i.e., no control group) and results should be treated with caution due to potential for bias. |

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| **De Bleser 2009** | |
| **Review question/objective:**  What is the efficacy of interventions to improve adherence to medicines regimens in solid organ transplant patients? | |
| **Studies** | Search date up to: August 2008  Number of studies related to medicines use: 12  Study design: RCT, CT, BA |
| **Participants** | Patients: adult and child recipients of renal, heart, lung or liver transplants.  Carers: carers of child recipients of renal, heart, lung or liver transplants.  Professionals: pharmacists, nurses, transplant team, otherwise not described. |
| **Setting** | Hospital, outpatient, home |
| **Interventions** | Education (informational, hehaviour); education (informational, affective); behavioural intervention; mixed (informational, behavioural, affective); patient (informational, behavioural); free immunosuppressants; no control group; usual care; control |
| **Maps to intervention taxonomy categories** | Providing information or education, Supporting behaviour change, Improving quality |
| **Outcomes** | Health behaviour, knowledge and understanding, support and consumer skills acquisition, health status and wellbeing, adverse events |
| **Quality of the review (AMSTAR)** | 5 |
| **Quality of the included studies** | Effects were inconsistent and most of the results were based on a small number of studies, some of which were also of small sample size. Most of the included studies were of poor design for assessing intervention effectiveness (i.e., no control group) and results should be treated with caution due to the potential for bias. Those studies that were randomised were of poor methodological quality. |

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| **Ford 2009** | |
| **Review question/objective:**  Does directly observed therapy (DOT) improve adherence to highly active antiretroviral therapy (HAART) or clinical outcomes, compared to self-administration, for patients with human immunodeficiency virus (HIV)? | |
| **Studies** | Search date up to: July 2009  Number of studies related to medicines use: 12  Study design: RCT |
| **Participants** | Patients: adults with HIV requiring HAART.  Carers: none.  Professionals: none. |
| **Setting** | Outpatient, community, private organisation |
| **Interventions** | DOT; self-administered therapy |
| **Maps to intervention taxonomy categories** | Supporting behaviour change, Minimising risks or harms |
| **Outcomes** | Health behaviour, health status and wellbeing, adverse events |
| **Quality of the review (AMSTAR)** | 9 |
| **Quality of the included studies** | Included trials were of moderate methodological quality overall, with some potential for bias. Feasibility and cost of DOT interventions are further issues for lifelong HAART therapy required in HIV treatment. |

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| **Garcia-Alamino 2010** | |
| **Review question/objective:**  Does self-monitoring or self-management of oral anticoagulation therapy improve the quality of anticoagulation and patient outcomes compared to standard monitoring? | |
| **Studies** | Search date up to: November 2007  Number of studies related to medicines use: 18  Study design: RCT |
| **Participants** | Patients: adults requiring long term (> 2 month) anticoagulant therapy for any indication (such as valve replacement, atrial fibrillation, venous thromboembolism).  Carers: none.  Professionals: none. |
| **Setting** | Primary care, hospital, home, outpatient |
| **Interventions** | Self-monitoring (self-testing and calling a clinic to receive the appropriate dose adjustment); self-management (self-testing and then self-adjusting treatment based on a predetermined dose schedule); standard monitoring |
| **Maps to intervention taxonomy categories** | Acquiring skills and competencies, Minimising risks or harms, Supporting behaviour change |
| **Outcomes** | Health behaviour, health status and wellbeing, adverse events, consumer evaluation of care |
| **Quality of the review (AMSTAR)** | 11 |
| **Quality of the included studies** | Included trials were of moderate methodological quality overall, with some potential for bias. A significant proportion (mean 25%) of people assigned to self-monitoring or self-management were unable to complete treatment and dropped out, reasons included device problems, physical limitations preventing self-testing inability to attend training or failing the assessment. Trial participation was also low with 68% overall refusing participation.  Long term effects were generally not reported by trials even though the requirements for anticoagulant therapy may be long term or lifelong. |

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| **Gilbody 2006** |
| This review is a duplicate of [Bower 2006](file:///C:\Users\laqwa\AppData\Local\Temp\medicines%20overview%20updating%20April%202013\medicines%20overview%20updating%20April%202013\cadth%20data%20for%20overview%20update%20April%202013\medicines%20overview%20updating%20April%202013\Bower%202006). |

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| **Giuffrida 1997** | |
| **Review question/objective:**  Do financial incentives improve adherence to healthcare interventions or treatments? | |
| **Studies** | Search date up to: April 1997  Number of studies related to medicines use:  4  Study design:  RCT |
| **Participants** | Patients: with hypertension, tuberculosis, cocaine dependence or overweight; pregnant teenagers, or teenage mothers.  Carers: parents considering dental care or immunisation for children; parents for paediatric outpatient clinic attendance. Professionals: none. |
| **Setting** | Community, primary care, outpatient, not specified |
| **Interventions** | Financial incentives; other interventions; usual care/ no intervention |
| **Maps to intervention taxonomy categories** | Improving quality |
| **Outcomes** | Health behaviour |
| **Quality of the review (AMSTAR)** | 6 |
| **Quality of the included studies** | Most studies in the review were small, none performed a sample size calculation to justify choice of numbers in sample, and none indicated that allocation was adequately concealed. |

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| **Gleeson 2009** | |
| **Review question/objective:**  Are interventions to improve adherence and persistence with osteoporosis medicines effective? | |
| **Studies** | Search date: 1990 up to July 2008  Number of studies related to medicines use: 7  Study design:  RCT, CT |
| **Participants** | Patients: new or current users of osteoporosis therapy.  Carers: none.  Professionals: physicians. |
| **Setting** | Primary care, home, hospital, outpatient, academic institution |
| **Interventions** | Patient education; patient education and medicines barriers counseling; patient and physician education; simplified dosing and patient support; feedback on response to therapy plus patient education and/or medicines barriers counseling; usual care |
| **Maps to intervention taxonomy categories** | Providing information or education, Support, Supporting behaviour change |
| **Outcomes** | Health behaviour |
| **Quality of the review (AMSTAR)** | 6 |
| **Quality of the included studies** | All results were based on a small number of studies of moderate quality. Adherence and persistence were measured inconsistently, impairing comparability of the outcomes between the studies and blinding was inadequate in all studies, potentially introducing bias in self-reported outcomes. |

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| **Golicki 2008** | |
| **Review question/objective:**  Does the Continuous Glucose Monitoring System improve glycemic control and other outcomes, compared with self-monitoring blood glucose, in children with type 1 diabetes mellitus? | |
| **Studies** | Search date up to: June 2007  Number of studies related to medicines use: 5  Study design: RCT |
| **Participants** | Patients: children with type 1 diabetes.  Carers: none.  Professionals: none. |
| **Setting** | Not specified |
| **Interventions** | Continuous Glucose Monitoring System device (CGMS) use, Self-monitoring of blood glucose (SMBG). |
| **Maps to intervention taxonomy categories** | Minimising risks or harms |
| **Outcomes** | Health behaviour, health status and wellbeing, adverse events |
| **Quality of the review (AMSTAR)** | 7 |
| **Quality of the included studies** | Reported results are typically based on relatively few studies, and the majority of included studies had methodological limitations that may introduce bias: generation of allocation sequence and allocation concealment were inadequate in 3 of 5 studies, and blinding not done in 2 of 5 studies. |

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| **Gray 2009** | |
| **Review question/objective:**  What are the effects of interventions to help people adhere to ocular hypotensive therapies? | |
| **Studies** | Search date up to: January 2009  Number of studies related to medicines use: 8  Study design: RCT,CT |
| **Participants** | Patients: people with raised intraocular pressure or glaucoma who were prescribed ocular hypotensive therapy.  Carers: none.  Professionals: none. |
| **Setting** | Outpatien |
| **Interventions** | Reminder devices; simplified regimens; education and individualised care planning; control; usual regimen |
| **Maps to intervention taxonomy categories** | Supporting behaviour change, Providing information or education |
| **Outcomes** | Health behavior, health status and wellbeing, adverse events |
| **Quality of the review (AMSTAR)** | 10 |
| **Quality of the included studies** | Most outcomes were reported by single studies. Included studies were of generally poor or unclear methodological quality, with allocation concealment, blinding and incomplete outcome data reporting being the main potential sources of bias. |

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| **Halpern 2011** | |
| **Review question/objective:**  Do enhanced counselling techniques or other client-provider interventions increase adherence to and continuation of hormonal contraceptives? | |
| **Studies** | Search date up to: October 2010  Number of studies related to medicines use: 8  Study design: RCT |
| **Participants** | Patients: women of reproductive age (no contraindications to hormone use), women who wanted or were willing to use hormonal contraception, who requested an abortion or had an abortion and who were at risk of unplanned pregnancy.  Carers: none.  Professionals: none. |
| **Setting** | Primary care, hospital, outpatient |
| **Interventions** | Group motivational counselling; structured counselling; multicomponent intervention; peer counseling; nurse counselling; intensive reminders; written appointment cards; daily text message reminders; motivational phone calls; routine counselling; no reminders |
| **Maps to intervention taxonomy categories** | Facilitating communication and decision making, Providing information or education, Support, Supporting behaviour change |
| **Outcomes** | Health behaviour, health status and wellbeing |
| **Quality of the review (AMSTAR)** | 8 |
| **Quality of the included studies** | There were several limitations: studies were of moderate quality; typically losses to follow-up were high which may jeopardise the validity of the results; and interventions were assessed by individual studies of small sample size. The effect of enhanced counselling interventions may be different depending on the site and groups and may not be generalisable to wider populations. |

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| **Haynes 2008** | |
| **Review question/objective:**  What are the effects of interventions to help patients follow prescriptions for medical problems? | |
| **Studies** | Search date up to: February 2007  Number of studies related to medicines use: 78  Study design:  RCT |
| **Participants** | Patients: all ages, acute infections and long-term conditions (including heart disease and related conditions, HIV, mental health, asthma/ chronic obstructive pulmonary disease (COPD), arthritis, epilepsy, diabetes, tuberculosis, contraception).  Carers: parents, carers or legal guardians of children were included; as were carers of elderly people.  Professionals: none. |
| **Setting** | Community, outpatient, primary care, hospital, home |
| **Interventions** | Instruction; counselling; automated telephone monitoring and counselling; manual telephone follow-up; family intervention; increasing the convenience of care; simplified dosing; self-monitoring; reminders; special 'reminder' pill packaging; dose-dispensing units and medicines charts; appointment and prescription refill reminders; reinforcement/rewards; medicines formulations; crisis intervention; direct observation of treatment; lay health mentoring; comprehensive pharmaceutical care services; psychological therapy |
| **Maps to intervention taxonomy categories** | Providing information or education,  Facilitating communication and/or decision making, Acquiring skills and competencies,  Supporting behaviour change,  Support,  Minimising risks or harms,  Improving quality |
| **Outcomes** | Health behaviour, health status and wellbeing |
| **Quality of the review (AMSTAR)** | 10 |
| **Quality of the included studies** | Most included study populations were small and there is a high possibility that no difference in adherence was found by studies when in truth there was one. Only a minority of included studies adequately concealed allocation; however studies with high drop out (> 20%) or those with confounded comparisons were excluded by the review. Only published studies were included, this may overestimate intervention effects. Interventions for long-term treatments were complex and labour-intensive, and feasibility of implementation in ‘real world’ settings is unclear. Elements of the interventions were also not described well in many studies, and effectiveness of the individual components is also not clear. |

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| **Haywood 2009** | |
| **Review question/objective:**  Do patient- or provider-targeted interventions improve adherence to sickle cell disease (SCD) therapy recommendations and patient outcomes? | |
| **Studies** | Search date up to: June 2007  Number of studies related to medicines use: 13  Study design: RCT, BA, CBA |
| **Participants** | Patients: adults and children with SCD.  Carers: parents or carers of children with SCD.  Professionals: Healthcare providers, otherwise not described. |
| **Setting** | Primary care, outpatient, community, hospital, home |
| **Interventions** | Provider-targeted interventions (clinical protocol with or without provider sensitivity training; audit and feedback; organisational or structural changes (day hospital establishment, fast track admission)); patient-targeted interventions (self-management; telephone outreach); control |
| **Maps to intervention taxonomy categories** | Providing information or education, Supporting behaviour change, Improving quality |
| **Outcomes** | Health behavior, consumer evaluation of care, system benefits, health status and wellbeing |
| **Quality of the review (AMSTAR)** | 6 |
| **Quality of the included studies** | Most of the results were based on a small number of studies, some of which were also of small sample size. Most of the included studies were of poor design for assessing intervention effectiveness (i.e., no control group) and results should be treated with caution due to the potential for bias. |

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| **Holland 2008** | |
| **Review question/objective:**  Does pharmacist-led medicines review improve clinical and patient outcomes in older people? | |
| **Studies** | Search date up to: September 2005  Number of studies related to medicines use: 32  Study design: RCT |
| **Participants** | Patients: mean age older than 60 years, and unrestricted to a particular disease or diagnosis.  Carers: none.  Professionals: none. |
| **Setting** | Primary care, outpatient, home, pharmacy, long-term care, hospital |
| **Interventions** | Pharmacist-led medicines review; control |
| **Maps to intervention taxonomy categories** | Improving quality, Minimising risks or harms, Providing information or education, Support, Supporting behaviour change |
| **Outcomes** | Health behavior, adverse events, knowledge and understanding, health status and wellbeing, consumer evaluation of care, system benefits |
| **Quality of the review (AMSTAR)** | 6 |
| **Quality of the included studies** | The majority of the included studies adequately addressed more than half of the methodological quality criteria components, although many trials failed to report a sample of size calculation, define primary outcomes, use intention to treat analysis or check data. Patient characteristics and outcomes were not consistently reported and this also limited conclusions. |

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| **Jacobson 2005** | |
| **Review question/objective:**  Do patient reminder and recall systems improve immunisation rates? | |
| **Studies** | Search date up to: May 2007  Number of studies related to medicines use: 47  Study design:  RCT, CBA |
| **Participants** | Patients: children and adolescents (birth to 18 years); adults 65 years and older or those with chronic illnesses; adults.  Carers: family members.  Professionals: healthcare providers/ physicians/ community residents who deliver immunisations. |
| **Setting** | Primary care, community, academic institution, private organisation |
| **Interventions** | Patient reminder and recall systems (letters, postcards, person-to-person phone calls, autodialer computer phone messages, reminders with outreach or with provider reminder, and reminders in combination); usual care |
| **Maps to intervention taxonomy categories** | Supporting behaviour change, Minimising risks or harms |
| **Outcomes** | Health behaviour, system benefits |
| **Quality of the review (AMSTAR)** | 10 |
| **Quality of the included studies** | Several included studies had methodological limitations that may introduce bias. Allocation concealment was unclear in over half of included trials; follow-up was unclear in almost half of studies (21/47); blinding of outcome assessment was done in half of studies; while protection against contamination was implemented in only a minority (6/47) of included trials. Only papers published in English were included, but publication bias was assessed, and did not appear likely. |

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| **Jegu 2011** | |
| **Review question/objective:**  Is slow-release oral morphine an effective alternative for opioid maintenance therapy? | |
| **Studies** | Search date up to: October 2010  Number of studies related to medicines use: 13  Study design:  RCT, CT, other |
| **Participants** | Patients: adults with opioid dependence, receiving opioid maintenance treatment or not.  Carers: none.  Professionals: none. |
| **Setting** | Not specified |
| **Interventions** | Slow release oral morphine (SROM) maintenance treatment; usual care |
| **Maps to intervention taxonomy categories** | Minimising risks or harms |
| **Outcomes** | Health behavior, health status and wellbeing, consumer evaluation of care, adverse events |
| **Quality of the review (AMSTAR)** | 4 |
| **Quality of the included studies** | While SROM may lead to improvements in some outcomes, most studies did not make comparisons with other maintenance treatments (ie they did not have a control group) and the evidence that SROM is an effective alternative for opioid maintenance therapy is therefore limited. |

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| **Koshman 2008** | |
| **Review question/objective:**  Does pharmacist care improve outcomes for people with heart failure? | |
| **Studies** | Search date up to: August 2007  Number of studies related to medicines use: 12  Study design: RCT |
| **Participants** | Patients: adults (majority over 65) with heart failure.  Carers: none.  Professionals: general practitioners, community pharmacists. |
| **Setting** | Outpatient, community, home, hospital, pharmacy |
| **Interventions** | Pharmacist directed care (including medicines assessment and recommendations, self-monitoring education, General Practitioner (GP) liaison, written information, adherence assessment, medicines review and organizers, adherence aids); pharmacist collaborative care (including medicines assessment, education and recommendations, self-monitoring education, referrals to community pharmacist, telephone follow-up, GP liaison, written and audio information); usual care; no education; no intervention; general information |
| **Maps to intervention taxonomy categories** | Providing information or education, Supporting behaviour change, Minimising risks or harms, Improving quality |
| **Outcomes** | Health behaviour, health status and wellbeing, adverse events, system benefits |
| **Quality of the review (AMSTAR)** | 6 |
| **Quality of the included studies** | Included studies were of variable quality, and the majority of studies did not adequately conceal allocation or blind different aspects of the study, which may introduce bias. Authors note that analysis based on study quality showed that lower quality studies were more likely to overestimate interventions' effects. |

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| **Lewin 2010** | |
| **Review question/objective:**  Do lay health worker interventions in primary and community health care improve maternal and child health and the management of infectious diseases? | |
| **Studies** | Search date up to: April 2009  Number of studies related to medicines use: 17  Study design: RCT |
| **Participants** | Patients: adults and children.  Carers: families and mothers of children.  Professionals: none. |
| **Setting** | Home, primary care, community |
| **Interventions** | LHW interventions; usual care; other adherence support |
| **Maps to intervention taxonomy categories** | Improving quality, Minimising risks or harms, Providing information or education, Supporting behaviour change |
| **Outcomes** | Health behavior, health status and wellbeing |
| **Quality of the review (AMSTAR)** | 10 |
| **Quality of the included studies** | The included studies were of low to moderate methodological quality, which may introduce bias. |

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| **Liu 2008** | |
| **Review question/objective:**  Do reminder systems and late patient tracers improve treatment commencement, completion and cure rates in people being treated for active tuberculosis or receiving treatment prophylactically? | |
| **Studies** | Search date up to: June 2008  Number of studies related to medicines use: 8  Study design: RCT, CT |
| **Participants** | Patients: adults and children, undergoing treatment for active tuberculosis, tuberculosis diagnosis, tuberculosis chemoprophylaxis, and students participating in tuberculosis detection drives.  Carers: parents and adults of children receiving tuberculosis prevention, treatment or diagnosis.  Professionals: none. |
| **Setting** | Primary care, outpatient, community, academic institution |
| **Interventions** | Late patient tracer (home visit, reminder letter, home visit plus health education); reminder (automated telephone reminder, non-automated telephone reminder, reminder plus health education, postcard, take-home card, person-to-person home visit); no reminder; usual care; no late patient tracer |
| **Maps to intervention taxonomy categories** | Minimising risks or harms, Providing information or education, Supporting behaviour change |
| **Outcomes** | Health behavior, health status and wellbeing |
| **Quality of the review (AMSTAR)** | 9 |
| **Quality of the included studies** | Results are based on a small number of studies for each comparison, and the majority of included studies have methodological limitations that may introduce bias (including unclear or inadequate sequence generation, allocation concealment, blinding and protection against contamination). |

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| **Lummis 2006** | |
| **Review question/objective:**  Are there benefits, risks and other impacts when patients' own medicines (POMs) are used in hospital? | |
| **Studies** | Search date up to: From 1984 up to 2004  Number of studies related to medicines use: 5  Study design: CT, BA |
| **Participants** | Patients: patients on hospital wards (acute medical, general medical and surgical, endocrine and diabetes medicine, vascular surgery and renal medicine).  Carers: none.  Professionals: ward pharmacists, discharge pharmacists, dispensary staff, nurses. |
| **Setting** | Hospital |
| **Interventions** | Using patients' own medicines (POM) that have been prescribed and dispensed in the community and brought to hospital; pharmacists assessing POMs use; POM use; control |
| **Maps to intervention taxonomy categories** | Support, Minimising risks or harms, Improving quality |
| **Outcomes** | Health status and wellbeing, adverse events, system benefits |
| **Quality of the review (AMSTAR)** | 5 |
| **Quality of the included studies** | Results should be interpreted with caution due to small numbers of studies assessing relevant outcomes and comparisons. There were also serious limitations of study design that introduce the risk of bias: none were RCTs; only 1 included study was quasi-randomised and the remainder were observational studies which are prone to bias. |

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| **Lutge 2012** | |
| **Review question/objective:**  Do material incentives improve management of tuberculosis (TB) treatment? | |
| **Studies** | Search date up to: June 2011  Number of studies related to medicines use: 9  Study design: RCT |
| **Participants** | Patients: adolescents or adults requiring tuberculosis prophylaxis or treatment or undergoing diagnostic testing (tuberclin test).  Carers: none.  Professionals: none. |
| **Setting** | Community, primary care, private organisation |
| **Interventions** | Material incentives (e.g. cash payments, vouchers); immediate incentives; delayed incentives; nutritional advice; education; counseling; usual care |
| **Maps to intervention taxonomy categories** | Minimising risks or harms, Supporting behaviour change |
| **Outcomes** | Health behaviour |
| **Quality of the review (AMSTAR)** | 11 |
| **Quality of the included studies** | A major limitation was the difficulty in generalising study findings; most studies were conducted with specific highly vulnerable populations (e.g. homeless males) for whom the relationship to incentives may be different to that for the general population. The quality of the evidence was also generally low to very low, with specific methodological limitations predisposing the results to bias. |

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| **Machado 2007b** | |
| **Review question/objective:**  Do pharmacists' interventions improve outcomes for patients with hypertension? | |
| **Studies** | Search date up to: December 2006  Number of studies related to medicines use: 28  Study design:  RCT, CT, BA, Other |
| **Participants** | Patients: adults with hypertension.  Carers: none.  Professionals: none. |
| **Setting** | Hospital, community, primary care, pharmacy, private organisation |
| **Interventions** | Pharmacist interventions; control |
| **Maps to intervention taxonomy categories** | Providing information or education, Supporting behaviour change |
| **Outcomes** | Health behaviour, health status and wellbeing, knowledge and understanding |
| **Quality of the review (AMSTAR)** | 8 |
| **Quality of the included studies** | Results were presented in the review as ‘sensitive,’ defined as a clinically important (10 mmHg systolic or 5mmHg diastolic change) and statistically significant change; or as 'non-sensitive' (if failing to meet both criteria). Included studies were of fair methodological quality, but with lack of blinding and randomisation common limitations that may introduce bias. |

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| **Machado 2007a** | |
| **Review question/objective:**  Do pharmacists' interventions improve outcomes for patients with diabetes? | |
| **Studies** | Search date up to: December 2006  Number of studies related to medicines use:  36  Study design:  RCT, CT, BA, Other |
| **Participants** | Patients: adults with diabetes (type 1 and/or 2) prescribed medicine.  Carers: none.  Professionals: none. |
| **Setting** | Hospital, outpatient, community, primary care, pharmacy, private organisation |
| **Interventions** | Pharmacist interventions; control |
| **Maps to intervention taxonomy categories** | Providing information or education, Supporting behaviour change |
| **Outcomes** | Health behaviour, health status and wellbeing, knowledge and understanding |
| **Quality of the review (AMSTAR)** | 7 |
| **Quality of the included studies** | Results were presented in the review as ‘sensitive,’ defined as a change of more than 10% and statistically significant; or as 'non-sensitive' (if failing to meet both criteria). Included studies were of fair methodological quality, but with lack of blinding and randomisation common limitations that may introduce bias. Typically adherence and adverse events were not reported by the included studies. |

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| **Machado 2008** | |
| **Review question/objective:**  Do pharmacists' interventions improve outcomes for patients with hyperlipidemia? | |
| **Studies** | Search date up to: August 2007  Number of studies related to medicines use: 23  Study design: RCT, CT, BA, Other |
| **Participants** | Patients: adults with hyperlipidemia.  Carers: none.  Professionals: none. |
| **Setting** | Hospital, outpatient, community, primary care, pharmacy, home |
| **Interventions** | Pharmacist interventions; control |
| **Maps to intervention taxonomy categories** | Providing information or education, Supporting behaviour change |
| **Outcomes** | Health behaviour, health status and wellbeing |
| **Quality of the review (AMSTAR)** | 8 |
| **Quality of the included studies** | Results were presented in the review as ‘sensitive,’ defined as a clinically important (change was more than 10%) and statistically significant; or as ‘non-sensitive’ (if failing to meet both criteria). Included studies were of generally good methodological quality, but a minority of studies did not adequately randomise participants and this may introduce bias. |

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| **Maglione 2002** | |
| **Review question/objective:**  Do mass mailings increase the uptake of influenza immunisation among people receiving Medicare? | |
| **Studies** | Search date up to: Early 1999  Number of studies related to medicines use: 5  Study design:  RCT, CT |
| **Participants** | Patients: adult Medicare beneficiaries eligible for influenza vaccination.  Carers: unclear.  Professionals: none. |
| **Setting** | Not specified |
| **Interventions** | Mass mailings (personalised or form letters, postcards and/or brochures); control |
| **Maps to intervention taxonomy categories** | Providing information or education, Supporting behaviour change, Minimising risks or harms |
| **Outcomes** | Health behaviour |
| **Quality of the review (AMSTAR)** | 5 |
| **Quality of the included studies** | The quality and number of studies in the review were limited. No further details were provided and so risk of bias is unclear. |

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| **Mahtani 2011** | |
| **Review question/objective:**  What are the effects of reminder packaging aids to enhance patient adherence to self-administered medicines taken for one month or more? | |
| **Studies** | Search date up to: September 2010  Number of studies related to medicines use: 12  Study design: RCT |
| **Participants** | Patients: adults with hypertension, type II diabetes, chronic mental illness; African-Americans with low literacy skills and chronic medical conditions; elderly with variety of illnesses, grass pollen-induced allergic rhinoconjunctivitis (with or without asthma), healthy adults. Self-administered medicine for at least one month, at least 80% follow-up, direct observation of therapy by health professional excluded.  Carers: administration by carer included.  Professionals: none. |
| **Setting** | Community, academic institution, outpatient |
| **Interventions** | Reminder packaging, usual care |
| **Maps to intervention taxonomy categories** | Supporting behaviour change |
| **Outcomes** | Health behaviour, health status and wellbeing, consumer evaluation of care, system benefits |
| **Quality of the review (AMSTAR)** | 10 |
| **Quality of the included studies** | The majority of the studies in this review were of low quality and are therefore at high risk of bias. Potential sources of bias included unclear adequacy of randomisation and allocation concealment methods in the majority of studies. Conclusions about effects of different types of reminder packages could not be made. There were also few studies focusing on the elderly. |

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| **Maio 2005** | |
| **Review question/objective:**  What is the impact of pharmacy utilisation management measures (PUM) on the care of seniors? | |
| **Studies** | Search date up to: May 2003  Number of studies related to medicines use: 18  Study design: RCT, other |
| **Participants** | Patients: people older than 60 years (or mean > 60).  Carers: none.  Professionals: none. |
| **Setting** | Community, pharmacy, outpatient |
| **Interventions** | Drug benefit cap; copayment, coinsurance, deductibles; prior authorisation; closed formulary; therapeutic substitution; generic substitution; incented formulary |
| **Maps to intervention taxonomy categories** | Improving quality |
| **Outcomes** | Health behaviour, health status and wellbeing, adverse events, system benefits |
| **Quality of the review (AMSTAR)** | 6 |
| **Quality of the included studies** | Overall, the number of included studies was small. Trial methodological quality was generally inadequately reported, and where reported trials lacked rigorous study design. It is therefore difficult to assess the impacts of interventions conclusively or to draw valid conclusions. |

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| **Mbuba 2008** | |
| **Review question/objective:**  Do interventions to improve treatment for epilepsy in developing countries improve health and other outcomes? | |
| **Studies** | Search date up to: June 2007  Number of studies related to medicines use: 27  Study design: BA |
| **Participants** | Patients: adults and children with epilepsy.  Carers: none.  Professionals: health care workers (primary health care nurses, environmental health technicians, district medical officers, neurologists, state health administrators). |
| **Setting** | Community |
| **Interventions** | Health care worker education; patient education; AED provision; usual care |
| **Maps to intervention taxonomy categories** | Improving quality, Providing information or education |
| **Outcomes** | Health behaviour, health status and wellbeing, adverse events, knowledge and understanding |
| **Quality of the review (AMSTAR)** | 5 |
| **Quality of the included studies** | Provision of AEDs may improve clinical and medicines use outcomes but are based on studies without control groups. Effects of interventions on other outcomes are unclear. Studies were of generally poor design for assessing intervention effectiveness and this may introduce bias, and follow-up was typically short so applicability to longer-term outcomes is unknown. |

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| **McIntosh 2006** | |
| **Review question/objective:**  Does compliance therapy improve adherence to antipsychotic medication, symptoms or quality of life for people with schizophrenia? | |
| **Studies** | Search date up to: June 2005  Number of studies related to medicines use: 1  Study design: RCT |
| **Participants** | Patients: English-speaking adults with a diagnosis of schizophrenia.  Carers: none.  Professionals: none |
| **Setting** | Primary care, hospital |
| **Interventions** | Compliance therapy using aspects of motivational interviewing, cognitive therapy, cognitive behavioural techniques and psychoeducation to explore with the patient their medical history and the benefits and limitations of antipsychotic treatment; non-specific counselling |
| **Maps to intervention taxonomy categories** | Facilitating communication and/or decision making, Supporting behaviour change, Support |
| **Outcomes** | Health behaviour, health status and well being, adverse events, system benefits |
| **Quality of the review (AMSTAR)** | 10 |
| **Quality of the included studies** | Results are based on a single small study. This study was at moderate risk of bias: it was rated as poor on randomisation and allocation concealment; blinding of outcome assessment was unclear;  reasons for dropouts were not given, although all participants were accounted for; and it was unclear whether analysis was based on intention-to-treat principles for all reported outcomes. |

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| **Misso 2010** | |
| **Review question/objective:**  Do continuous subcutaneous insulin infusion (CSII) improve outcomes for patients with type 1 diabetes, compared to multiple insulin injections (MI)? | |
| **Studies** | Search date up to: July 2009  Number of studies related to medicines use: 23  Study design: RCT |
| **Participants** | Patients: adults and children with type 1 diabetes taking insulin treatment; one study included only pregnant females, the rest excluded them.  Carers: none.  Professionals: none. |
| **Setting** | Outpatient, hospital, primary care |
| **Interventions** | Continuous subcutaneous insulin infusion (CSII); multiple insulin injections (MI) |
| **Maps to intervention taxonomy categories** | Supporting behaviour change, Minimising risks or harms |
| **Outcomes** | Health behaviour, health status and wellbeing, adverse events |
| **Quality of the review (AMSTAR)** | 10 |
| **Quality of the included studies** | The majority of the included studies had small sample sizes and there was considerable heterogeneity in the outcomes, therefore pooled effect estimates need to be interpreted with caution. The quality of the included studies was also often unclear, which means that results may be predisposed to an unknown level of bias. |

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| **Molife 2009** | |
| **Review question/objective:**  Do insulin pen devices result in better patient outcomes compared to conventional vial and syringe for diabetes management? | |
| **Studies** | Search date: January 1980 to February 2009  Number of studies related to medicines use: 38  Study design: RCT, CT, BA |
| **Participants** | Patients: adults and children with Type 1 and/ or Type 2 diabetes who require insulin.  Carers: not described.  Professionals: none. |
| **Setting** | Not described |
| **Interventions** | Insulin pen device; vial and syringe |
| **Maps to intervention taxonomy categories** | Supporting behaviour change |
| **Outcomes** | Health status and wellbeing, adverse events, consumer evaluation of care |
| **Quality of the review (AMSTAR)** | 6 |
| **Quality of the included studies** | The statistical significance of the findings was not reported, and neither was methodological quality of the included studies, therefore the studies have unknown limitations that may predispose them to bias. |

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| **Mollon 2009** | |
| **Review question/objective:**  Do prescribing computer decision support systems improve provider behaviour and patient outcomes? | |
| **Studies** | Search date up to: June 2008  Number of studies related to medicines use: 41  Study design: RCT |
| **Participants** | Patients: adults and children requiring prescriptions.  Carer: none.  Professionals: physicians, pharmacists, or practices, care units or health centres. |
| **Setting** | Hospital, outpatient, community, primary care, pharmacy |
| **Interventions** | Prescribing computer decision support system (CDSS); control |
| **Maps to intervention taxonomy categories** | Supporting behaviour change, Minimising risks or harms, Providing information or education |
| **Outcomes** | Health status and wellbeing, system benefits, consultation and communication by provider |
| **Quality of the review (AMSTAR)** | 5 |
| **Quality of the included studies** | Included studies were of generally good quality. There insufficient information about the significance of results reported within the review to draw conclusions. There was considerable heterogeneity between the settings, diseases, CDSS interventions, and participants of included studies, and the results should be interpreted carefully. |

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| **Morrison 2001** | |
| **Review question/objective:**  Do services provided by pharmacists improve patient outcomes in ambulatory care settings? | |
| **Studies** | Search date up to: May 1999  Number of studies related to medicines use: 32  Study design: RCT, CCT |
| **Participants** | Patients: patients requiring pharmacist services.  Carers: none.  Professionals: physicians of patients requiring pharmacist services. |
| **Setting** | Outpatient, primary care, hospital, home, pharmacy, community |
| **Interventions** | Pharmacist counselling of patients; pharmacist counselling of physicians; pharmacist counselling of patients and physicians; pharmacist provided patient care; usual care |
| **Maps to intervention taxonomy categories** | Providing information or education, Acquiring skills and competencies, Supporting behaviour change |
| **Outcomes** | Health behaviour, knowledge and understanding, health status and wellbeing, adverse events |
| **Quality of the review (AMSTAR)** | 4 |
| **Quality of the included studies** | Conclusions are limited by the small number of studies reporting several outcomes. Methodological quality of included studies overall was fair, however many had methodological limitations that may introduce bias: the majority (26/32 trials) were randomised; but observers were blinded in the minority of trials (8/32) and subjects were blinded in only 2/32 trials. |

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| **Nicolson 2009** | |
| **Review question/objective:**  Does providing written information about individual prescription or over-the-counter medicines improve patient outcomes? | |
| **Studies** | Search date up to: June 2007  Number of studies related to medicines use: 25  Study design: RCT |
| **Participants** | Patients: individuals of any age currently taking medicines (prescribed or over the counter  medicines).  Carers: none.  Providers: none. |
| **Setting** | Hospital, outpatient, community, long term care, primary care |
| **Interventions** | Written medicines information; written medicines information in different formats; no written medicines information |
| **Maps to intervention taxonomy categories** | Providing information or education, Supporting behaviour change |
| **Outcomes** | Knowledge and understanding, consumer evaluation of care, health behaviour, consumer involvement in care process |
| **Quality of the review (AMSTAR)** | 9 |
| **Quality of the included studies** | For many comparisons, there were only single small studies contributing to results. Included trials were of generally poor quality which may introduce bias: 10 trials reported adequate randomisation, but 15 trials failed to report this or rated it as unclear; 8 trials reported allocation  concealment but this was rated as adequate in only 5 and unclear in the remaining trials; 10 trials adequately blinded outcome assessors, and in 2 this was inadequate. Loss to follow up was variable, ranging from 0 to 68% (mean loss to follow-up in the 22 trials reporting it was 16%). Withdrawals in the 11 trials reporting it was also variable, ranging from 0 to 37% (mean withdrawal was 12%). |

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| **Nishtala 2008** | |
| **Review question/objective:**  Do educational interventions and/ or medicines review improve psychotropic drug use in older adults in long-term care facilities? | |
| **Studies** | Search date up to: April 2007  Number of studies related to medicines use: 11  Study design: RCT, CT. |
| **Participants** | Patients: elderly adults (mean ≥ 65 years), in long term care facilities.  Carers: none.  Professionals: physicians, nurses pharmacists and psychologists. |
| **Setting** | Long term care |
| **Interventions** | Pharmacist medicines review and/or healthcare worker education; health care worker education; usual care |
| **Maps to intervention taxonomy categories** | Providing information or education, Supporting behaviour change, Minimising risks or harms |
| **Outcomes** | Health behaviour, health status and wellbeing |
| **Quality of the review (AMSTAR)** | 4 |
| **Quality of the included studies** | Reported results are typically based on relatively few studies, and as methodological quality of included studies was not assessed, results need to be interpreted with caution as there are unknown potential sources of bias. |

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| **Nkansah 2010** | |
| **Review question/objective:**  Does expanding the role of outpatient pharmacists improve patient outcomes and management of medicines? | |
| **Studies** | Search date up to: March 2007  Number of studies related to medicines use: 43  Study design: RCT |
| **Participants** | Patients: adults and children receiving medicines and including those with asthma, COPD, depression, diabetes, heart failure, hyperlipedemia, hypertension, home care patients, patients with repeat prescriptions, patients on warfarin or those at high risk for medicines problems.  Carers: none.  Professionals: physicians, not specified. |
| **Setting** | Outpatient, pharmacy, academic institution, primary care, private organisation, home |
| **Interventions** | Pharmacist services targeted at patients; pharmacist services targeted at professionals; services delivered by other professionals (physician); usual care. |
| **Maps to intervention taxonomy categories** | Improving quality, Providing information or education, Supporting behaviour change |
| **Outcomes** | Health behaviour, adverse events, health status and wellbeing |
| **Quality of the review (AMSTAR)** | 9 |
| **Quality of the included studies** | The majority of results were based on single or a small number of studies, and included studies were generally of moderate methodological quality which may introduce bias. |

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| **Odegard 2007** | |
| **Review question/objective:**  What are the effects of interventions to improve medicines adherence in type 1 and type 2 diabetes mellitus? | |
| **Studies** | Search date up to: May 2007  Number of studies related to medicines use: 7  Study design: RCT, other |
| **Participants** | Patients: adolescents (aged 13 to 17 years) and older adults, including veterans (mean age range 52 to 69 years) with type 1 or type 2 diabetes mellitus.  Carers: none.  Professionals: none. |
| **Setting** | Primary care, home, pharmacy |
| **Interventions** | Pharmacological education and/or medicines review by pharmacist; reminder; unit-dose packaging; reminder plus unit-dose packaging; cue-dose training; counselling (psychotherapy or counselling); weekly telephone follow-up by nurse educator; standard care; control |
| **Maps to intervention taxonomy categories** | Improving quality, Providing information or education, Support, Supporting behaviour change |
| **Outcomes** | Health behaviour, health status and wellbeing, system benefits |
| **Quality of the review (AMSTAR)** | 4 |
| **Quality of the included studies** | Most outcomes and comparisons were reported in only a small number of studies, and all had methodological limitations than may introduce bias. |

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| **Olthoff 2005** | |
| **Review question/objective:**  What are the effects of interventions to help patients adhere to medicines for glaucoma? | |
| **Studies** | Search date up to: February 2004  Number of studies related to medicines use: 4  Study design: RCT, ITS, CBA |
| **Participants** | Patients: people with raised intraocular pressure or glaucoma.  Carers: none.  Professionals: none. |
| **Setting** | Not specified |
| **Interventions** | Compliance aid (medicines alarm or memory aid); counselling and memory aid; education and tailoring of medicines routine; counselling only; no intervention |
| **Maps to intervention taxonomy categories** | Providing information or education, Supporting behaviour change |
| **Outcomes** | Health behaviour |
| **Quality of the review (AMSTAR)** | 7 |
| **Quality of the included studies** | Of the 4 included intervention studies, only 1 study was rated as good quality (with 2 rated as moderate and 1 poor), and this may introduce bias. |

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| **Orton 2005** | |
| **Review question/objective:**  What are the effects of unit-dose packaged treatment on cure and treatment adherence for people with uncomplicated malaria? | |
| **Studies** | Search date up to: November 2004  Number of studies related to medicines use: 4  Study design: RCT, CT |
| **Participants** | Patients: people with uncomplicated malaria.  Carers: parents.  Professionals: none. |
| **Setting** | Primary care, community, home |
| **Interventions** | Unit-dose packaged medicines: labelled and boxed blister packs or labelled and sectioned polythene bags; usual care |
| **Maps to intervention taxonomy categories** | Supporting behaviour change |
| **Outcomes** | Health behaviour, health status and wellbeing, adverse events |
| **Quality of the review (AMSTAR)** | 10 |
| **Quality of the included studies** | All of the included studies were relatively small and had serious methodological limitations that might introduce bias. Only 1 cluster RCT adequately generated the randomisation sequence; while adequacy of allocation concealment was unclear in all included studies. Similarly, blinding of outcome assessment was not done all trials; completeness of outcome data was assessed in only 2 trials (1 assessed as adequate, 1 inadequate); and there were unit of analysis issues in cluster RCTs. |

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| **Oyo-Ita 2011** | |
| **Review question/objective:**  What is the effectiveness of interventions to improve immunisation coverage in low- and middle-income countries? | |
| **Studies** | Search date up to: March 2011  Number of studies related to medicines use: 6  Study design: RCT |
| **Participants** | Patients: children (aged 0-4), pregnant mothers, general populations.  Carers: parents and general population.  Professionals: primary healthcare workers. |
| **Setting** | Community, home, clinic |
| **Interventions** | Health education (information campaign; facility based; facility based plus redesigned immunisation card; or evidence-based community discussion); monetary incentive; provider-oriented interventions (training); health system intervention (home visit or provision of equipment, drugs and materials); routine immunisation |
| **Maps to intervention taxonomy categories** | Providing information or education, Supporting behaviour change, Improving quality, Minimising risks or harms |
| **Outcomes** | Health behaviour, system benefits |
| **Quality of the review (AMSTAR)** | 8 |
| **Quality of the included studies** | The majority of interventions were assessed in single studies of low to moderate quality. |

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| **Pankowska 2009** | |
| **Review question/objective:**  Does continuous subcutaneous insulin infusion improve glycemic control and other outcomes, compared with multiple daily injections, in children with type 1 diabetes mellitus? | |
| **Studies** | Search date up to: October 2007  Number of studies related to medicines use: 6  Study design: RCT |
| **Participants** | Patients: children, adolescents, and young adults aged 1 to 21 years with type 1 diabetes for at least 3 months.  Carers: none.  Professionals: none. |
| **Setting** | Not specified |
| **Interventions** | Continuous subcutaneous insulin infusion (CSII); multiple daily injections (MDI) |
| **Maps to intervention taxonomy categories** | Minimising risks or harms |
| **Outcomes** | Health behaviour, health status and wellbeing, adverse events |
| **Quality of the review (AMSTAR)** | 7 |
| **Quality of the included studies** | Included studies were of variable methodological quality: randomisation was adequate in half of studies, intention to treat analysis done in the minority (2 of 6 studies), and allocation concealment and blinding not achieved for any included study. These limitations may introduce bias that influences the results. |

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| **Parr 2009** | |
| **Review question/objective:**  Do targeted interventions (gradual dose reduction, brief interventions, and psychological interventions) improve benzodiazepine cessation, compared to routine care? | |
| **Studies** | Search date up to: 2007  Number of studies related to medicines use: 32  Study design: RCT |
| **Participants** | Patients: adults who used benzodiazepines continuously for at least 3 months.  Carers: none.  Professionals: none. |
| **Setting** | Primary care, outpatient, community, private organisation |
| **Interventions** | Combinations of: Brief intervention; gradual dose reduction (GDR); psychological intervention; abrupt or gradual substitutive pharmacotherapy; abrupt withdrawal; routine care |
| **Maps to intervention taxonomy categories** | Supporting behaviour change, Providing information or education |
| **Outcomes** | Health behaviour |
| **Quality of the review (AMSTAR)** | 5 |
| **Quality of the included studies** | Included studies were of variable quality, and results should be interpreted with caution due to the possibility of bias. Blinding of outcome assessors was not achieved in over half the studies and there was less than 70% follow-up in a quarter; however authors did test for and note that results were not related to methodological quality scores of included studies. |

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| **Polis 2007** | |
| **Review question/objective:**  Does advance provision of emergency contraception improve pregnancy rates and other outcomes? | |
| **Studies** | Search date up to: August 2006  Number of studies related to medicines use: 8  Study design: RCT, CT |
| **Participants** | Patients: women.  Carers: none.  Professionals: none. |
| **Setting** | Community, hospital, outpatient, not specified |
| **Interventions** | Advance provision of emergency contraception; standard provision of emergency contraception |
| **Maps to intervention taxonomy categories** | Supporting behaviour change, Improving quality |
| **Outcomes** | Health behaviour, health status and wellbeing |
| **Quality of the review (AMSTAR)** | 5 |
| **Quality of the included studies** | Included studies were of variable methodological quality: while randomisation and allocation concealment were adequate in the majority of studies, follow-up rates were variable and may represent a source of bias. |

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| **Ranji 2008** | |
| **Review question/objective:**  Are quality improvement interventions effective at reducing inappropriate antibiotic prescribing for acute outpatient illnesses? | |
| **Studies** | Search date up to: March 2007  Number of studies related to medicines use: 43  Study design: RCT, CT, CBA |
| **Participants** | Patients: adults and children; illnesses included bronchitis, acute respiratory infection, pharyngitis, otitis media, sinusitis, sore throat, acute diarrhea, acute cough, common cold.  Carers: parents.  Professionals: clinicians. |
| **Setting** | Outpatient, not specified |
| **Interventions** | Clinician education alone (mailed materials, seminars, outreach or workshops, written materials); patient education alone (mailed and office based materials, self-management guides, individual and group interactive meetings, written materials); clinician plus patient education (patient and/or clinician: educational materials, outreach, workshops, written materials, group sessions, mass media campaign); clinician plus patient education plus audit and feedback (clinician audit and feedback, educational meetings, outreach, guideline development and written materials, patient written or mailed educational materials, self-management guide);  other quality improvement strategies (combinations of paper or computer-based decision support systems); educational meetings, outreach or workshops; written educational materials for providers; financial disincentives for patients; patient educational materials (written and electronic); audit and feedback; community-based interventions (mass media campaigns, patient or provider educational meetings and outreach, written materials, audit and feedback, guideline distribution for providers, decisional support materials, self-management guides); non-community-based interventions targeting clinicians and patients (combinations of audit and feedback, education outreach and meetings, written and or mailed educational materials, guideline development, self-management guides for patient); non-community-based studies targeting clinicians (educational workshops, guideline distributions, patient-centred communication skills interactive training, audit and feedback, computer based reminders, written materials, paper based decision support system); non-community-based interventions targeting patients (financial incentives, educational video, material and/or pamphlet); delayed prescriptions; control |
| **Maps to intervention taxonomy categories** | Facilitating communication and/or decision making, Improving quality, Minimising risks or harms, Providing information or education |
| **Outcomes** | Health behaviour, adverse events, consumer evaluation of care, health status and wellbeing, system benefits |
| **Quality of the review (AMSTAR)** | 6 |
| **Quality of the included studies** | Intervention components and details of implementation were not well described and most comparisons are based on small numbers of studies. The overall quality of included studies was fair although cluster sizes were not reported in majority of studies. |

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| **Roughead 2005** | |
| **Review question/objective:**  Do pharmaceutical care service interventions improve patient outcomes? | |
| **Studies** | Search date up to: December 2003  Number of studies related to medicines use: 22  Study design: RCT |
| **Participants** | Patients: adults and children with chronic conditions or at high risk of medicines misadventure (eg polypharmacy).  Carers: none.  Professionals: none. |
| **Setting** | Outpatient, primary care, pharmacy, community |
| **Interventions** | Pharmaceutical care services involving one-to-one consultation between patient and pharmacist, to manage health or resolve medicines-related problems, to develop a care plan and provide follow-up; usual care |
| **Maps to intervention taxonomy categories** | Facilitating communication and/or decision making, Acquiring skills and competencies, Minimising risks or harms, Improving quality |
| **Outcomes** | Health behaviour, knowledge and understanding, health status and wellbeing, adverse events, system benefits |
| **Quality of the review (AMSTAR)** | 7 |
| **Quality of the included studies** | This review included only published, English-language randomised trials, and almost half (10/22) were rated as having a high risk of bias. Methodological limitations included inadequate randomisation in some included trials, allocation concealment adequacy was often unclear, as were blinding of outcome assessors and contamination between study sites. Additionally, some included studies had sample sizes that were too small to detect effects of interventions. |

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| **Royal 2006** | |
| **Review question/objective:**  Do interventions aiming to reduce preventable medicines-related adverse events decrease morbidity, hospital admission and mortality? | |
| **Studies** | Search date up to: February 2005  Number of studies related to medicines use: 38  Study design:  RCT, CT, CBA, ITS |
| **Participants** | Patients: people taking medicines.  Carers: none.  Professionals: healthcare professionals and pharmacists providing care in community-based family medical services. |
| **Setting** | Primary care, community, long term care, pharmacy |
| **Interventions** | Pharmacist-led medicines review; primary healthcare professional-led interventions (nurse protocols or primary care physician education); complex interventions including medicines review to reduce falls; control |
| **Maps to intervention taxonomy categories** | Minimising risks or harms, Improving quality |
| **Outcomes** | Adverse events, health status and wellbeing, system benefits |
| **Quality of the review (AMSTAR)** | 8 |
| **Quality of the included studies** | None of the included studies were designed to explicitly assess patient outcomes that could be linked causally to medicines adverse events, and these studies set in primary care may not be applicable to other healthcare settings. All of the included studies had methodological limitations that are likely to introduce bias: many are subject to attrition bias, allocation concealment and blinding of assessors was unclear or not done in the majority of studies and analysis did not adjust for clusters of sites. |

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| **Rueda 2006** | |
| **Review question/objective:**  What are the effects of interventions to support and educate people living with HIV/AIDS on adherence to highly active antiretroviral therapy (HAART)? | |
| **Studies** | Search date up to: May 2005  Number of studies related to medicines use: 19  Study design: RCT |
| **Participants** | Patients: adults and children with HIV and receiving HAART.  Carers: none.  Professionals: none. |
| **Setting** | Outpatient, hospital, community |
| **Interventions** | Support and education interventions; individual or group interventions; medical management strategies; cognitive behavioural therapy; motivational interviewing; usual care |
| **Maps to intervention taxonomy categories** | Providing information or education, Acquiring skills and competencies, Supporting behaviour change, Support |
| **Outcomes** | Health behaviour, health status and well being |
| **Quality of the review (AMSTAR)** | 9 |
| **Quality of the included studies** | Overall, the quality of studies was low, with potential for bias. Randomisation was described and adequate in only 5 trials, with allocation adequately concealed in 3. Intention-to-treat analysis was conducted in 3 included trials, while follow-up post intervention and up to 6 months was variable (3 studies up to 6 months). Only 6 studies used an objective measure of adherence. |

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| **Russell 2006** | |
| **Review question/objective:**  Do interventions directed at older adults improve medicines adherence? | |
| **Studies** | Search date up to: 2004  Number of studies related to medicines use: 57  Study design: RCT |
| **Participants** | Patients: older adults (mean age over 60 years) with hypertension or other cardiac, diabetes mellitus, osteoarthritis, cancer, glaucoma, receiving blood thinners, or with multiple (> 2) or other diagnoses.  Carers: none.  Professionals: none. |
| **Setting** | Home, community, pharmacy, hospital, primary care |
| **Interventions** | Counselling and education (brief (1 to 3 days), extensive (> 3 days), or unknown duration); cues, organisers or both; simplification of dose frequency; self-medication management programs; control |
| **Maps to intervention taxonomy categories** | Providing information or education, Supporting behaviour change, Acquiring skills and competencies, Support |
| **Outcomes** | Health behaviour |
| **Quality of the review (AMSTAR)** | 4 |
| **Quality of the included studies** | Many studies were small, with insufficient power to detected an effect of interventions in approximately 1/3rd of studies. Study quality was not formally assessed, and risk of bias is therefore unknown. |

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| **Saini 2009** | |
| **Review question/objective:**  Does simplifying the dosage frequency of oral daily medicines for chronic conditions improve adherence? | |
| **Studies** | Search date up to: 2007  Number of studies related to medicines use: 11  Study design: RCT, other, not specified |
| **Participants** | Patients: adults with chronic diseases (hypertension, stable angina, type 2 diabetes mellitus, epilepsy).  Carers: none.  Professionals: none. |
| **Setting** | Not described |
| **Interventions** | Simplified oral medicines dosage: once daily, twice daily, three times daily; four times daily |
| **Maps to intervention taxonomy categories** | Supporting behaviour change |
| **Outcomes** | Health behaviour |
| **Quality of the review (AMSTAR)** | 4 |
| **Quality of the included studies** | The methodological quality of included studies was poorly described, which means that results may be affected by an unknown risk of bias. |

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| **Schedlbauer 2010** | |
| **Review question/objective:**  What is the effect of adherence-enhancing interventions to help people take prescribed self-administered lipid lowering medicines? | |
| **Studies** | Search date up to: March 2008  Number of studies related to medicines use: 11  Study design: RCT |
| **Participants** | Patients: adults (over 18 years age) prescribed lipid-lowering medicines for primary and secondary prevention of cardiovascular disease.  Carers: none.  Professionals: none. |
| **Setting** | Primary care, pharmacy, outpatient |
| **Interventions** | Simplification of medicine regime (decreasing intake from four times daily to twice daily or powder form to bar form); patient information and education (pharmacist-mediated counselling and information, handing out videotapes, booklets and newsletters, followed by educational newsletters sent via post or sending out informational/educational videotapes); intensified patient care (reminders via mail and telephone); complex behavioural approach – group sessions (small group training with information packages sent by post); usual care or other intervention |
| **Maps to intervention taxonomy categories** | Providing information or education, Supporting behaviour change |
| **Outcomes** | Health behaviour, consumer evaluation of care, health status and wellbeing, adverse events |
| **Quality of the review (AMSTAR)** | 9 |
| **Quality of the included studies** | There were no studies evaluating decision support or administrative improvements. There are very few studies in this area and quality of the studies ranged from moderate to high risk of bias. |

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| **Schroeder 2004** | |
| **Review question/objective:**  What is the effect of adherence-enhancing interventions to help people take prescribed antihypertensive medicines? | |
| **Studies** | Search date up to: April 2002  Number of studies related to medicines use: 38  Study design: RCT |
| **Participants** | Patients: community dwelling adults with primary hypertension, newly diagnosed or established; excluded: secondary hypertension; hospitalised (non-ambulatory) patients.  Carers: none.  Professionals: none. |
| **Setting** | Primary care, community, outpatient |
| **Interventions** | Simplification of medicines regimens (once daily versus twice daily; tablet to transdermal delivery; 2 tablets versus 1 tablet); patient education (programmes with slides, audiotapes, booklets, group education, written materials, visual aids, lecture, discussion and knowledge tests); complex health and organisational interventions including interventions in combination and structured hypertension management; patient motivation, support and reminders (dispensers, medicines reminder charts with pharmacist supervision, self-recording of blood pressure, home visits, nurse and psychologist teaching self-determination, counselling, nurse phone calls, social support, group training, postal reminders, reminder packaging, telephone-linked computer counselling); usual care or no treatment |
| **Maps to intervention taxonomy categories** | Providing information or education, Supporting behaviour change, Support; Improving quality |
| **Outcomes** | Health behaviour, health status and wellbeing |
| **Quality of the review (AMSTAR)** | 10 |
| **Quality of the included studies** | Results may be limited as study quality was generally low. No included study met all methodological quality criteria. Randomisation method and adequate allocation concealment occurred in only 10/38 studies; outcome assessors were blinded in 12/38 studies; losses to follow-up were accounted for in 33/38 studies. Only a minority (8/38 studies) reported a power calculation and the majority of the remaining trials appear too small to detect clinically important differences between groups. |

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| **Smith 2009** | |
| **Review question/objective:**  Do provider and user behaviour interventions improve appropriateness and timing of malaria treatment? | |
| **Studies** | Search date up to: March 2008  Number of studies related to medicines use: 23  Study design:  RCT, CBA, BA, other |
| **Participants** | Patients: adults and children.  Carers: parents or carers of children with malaria symptoms.  Professionals: public and private formal (e.g.,doctors, pharmacists, nurses) or informal (e.g.,medicine vendors, shopkeepers) providers, community health workers, community drug distributors, village health motivators, school teachers and midwives. |
| **Setting** | Community, primary care, not specified |
| **Interventions** | Education; education and/or training plus pre-packaged AM; pre-packaged AM tablet; AM syrup plus pictorial instruction; AM syrup plus pictorial instruction plus verbal instruction; AM syrup; integrated childhood disease management; treatment supervision; provider (formal or informal) training/ education; dispensing and communication skills training; training plus community education; control; no intervention |
| **Maps to intervention taxonomy categories** | Providing information or education, Supporting behaviour change |
| **Outcomes** | Health behaviour, knowledge and understanding, provider knowledge and understanding |
| **Quality of the review (AMSTAR)** | 5 |
| **Quality of the included studies** | Most results were based on one or two studies poor design for assessing intervention effectiveness (i.e., no control group) and results should be treated with caution due to the potential for bias. |

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| **Spurling 2007** | |
| **Review question/objective:**  What are the effects of delaying antibiotic prescriptions for at least 48 hours after respiratory infection symptoms begin on antibiotic use, clinical outcomes and patient satisfaction? | |
| **Studies** | Search date up to: January 2007  Number of studies related to medicines use: 9  Study design: RCT |
| **Participants** | Patients: adults or children with respiratory infections.  Carers: parents.  Professionals: none. |
| **Setting** | Primary care, outpatient, home |
| **Interventions** | Delayed antibiotics; immediate antibiotics; no antibiotics |
| **Maps to intervention taxonomy categories** | Facilitating communication and/or decision making, Minimising risks or harms |
| **Outcomes** | Health behaviour, consumer evaluation of care, health status and wellbeing, adverse events |
| **Quality of the review (AMSTAR)** | 9 |
| **Quality of the included studies** | There were methodological limitations with some included studies that may introduce bias. Overall, 8 studies were rated as high quality. All 9 included trials were properly randomised, with 5 adequately concealing allocation. Six trials had attempted blinding some aspect of the study; and analysis was on an intention-to-treat basis in 5 trials. |

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| **Stevenson 2004** | |
| **Review question/objective:**  What are the effects of interventions to improve two-way communication between patients and healthcare professionals about medicines? | |
| **Studies** | Search date up to: From 1991 up to July 2001  Number of studies related to medicines use: 16  Study design: RCT, CBA, BA |
| **Participants** | Patients: any patient requiring medicines.  Carers: none.  Professionals: pharmacists and pharmacy staff, GPs, nurses, outpatient clinic doctors and staff, staff at psychiatric inpatient units. |
| **Setting** | Primary care, outpatient, hospital, pharmacy, community, home |
| **Interventions** | Training seminars for doctors; patient communication skills training; medicine fact sheet plus counselling; modified pharmacy services and medicines review; advertising campaign to promote communication with pharmacists; written questions for pharmacist plus counselling; nurse/ assistant telephone follow-up; nurse/ assistant face-to-face consultation; usual care; medicines education; medicines fact sheet; no control |
| **Maps to intervention taxonomy categories** | Providing information or education, Facilitating communication and/or decision making, Improving quality, Support, Minimising risks or harms |
| **Outcomes** | Health behaviour, knowledge and understanding, consumer evaluation of care, health status and wellbeing, adverse events, consumer involvement in care process, communication and consultation by provider, system benefits |
| **Quality of the review (AMSTAR)** | 5 |
| **Quality of the included studies** | Most included studies were only of moderate methodological quality that may predispose results to bias. Of the included intervention studies, 10 were RCTs, however, many included studies had methodological limitations (such as lack of randomisation, lack of numbers recruited, pre- and post-intervention data not given; attrition from study), and these may introduce bias. |

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| **Stone 2002** | |
| **Review question/objective:**  Which interventions improve adherence to preventive cancer screening and adult immunisation guidelines? | |
| **Studies** | Search date up to: February 1999  Number of studies related to medicines use: 29  Study design: RCT, CT |
| **Participants** | Patients: adults eligible for immunisation or cancer screening.  Carers: none.  Professionals: any involved in the delivery of preventive care services. |
| **Setting** | Not specified |
| **Interventions** | Organisational change; provider reminder; patient financial incentives; provider education; patient reminder; patient education; provider financial incentive; feedback; usual care/control |
| **Maps to intervention taxonomy categories** | Providing information or education, Supporting behaviour change, Improving quality, Minimising risks or harms |
| **Outcomes** | Health behaviour |
| **Quality of the review (AMSTAR)** | 9 |
| **Quality of the included studies** | Most included studies were high quality (although not described in any detail). The majority of included studies were RCTs, but no further details were given about assessment of risk of bias. Authors note that several cluster randomised trials suffered from unit of analysis issues which may distort the results. |

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| **Thomas 2010** | |
| **Review question/objective:**  Are interventions to increase influenza vaccination rates in adults 60 years and older in the community effective? | |
| **Studies** | Search date up to: July 2010  Number of studies related to medicines use: 44  Study design: RCT |
| **Participants** | Patients: adults 60 years and older.  Carers: none.  Professionals: Physicians, clinic staff |
| **Setting** | Home, primary care, community, outpatient |
| **Interventions** | Participant reminders (postcard); tailored reminders (letter, postcard or phone call); participant reminder and recall (telephone call and education brochure); participant reminder and recall (letter and leaflet, letter alone, customised letter, telephone invitation); participant invitation while in clinic; education and vaccination offer; health risk appraisal and vaccination offer; group visits to providers plus offer to vaccinate; home visit plus vaccination offer; home visits with vaccination encouragement plus GP care plan; home visit plus safety intervention; free vaccination offer; vaccination invitation (patient pays); physician reminder (posters of vaccination uptake in clinic) alone or plus patient postcard; facilitators working with physicians on prevention measures including influenza vaccination; educational reminders plus academic detailing and peer comparisons; education and feedback to physicians; chart review and feedback; financial incentives to physicians; no intervention; usual care |
| **Maps to intervention taxonomy categories** | Facilitating communication and decision making, Providing information or education, Improving quality, Supporting behaviour change, Minimising risks or harms |
| **Outcomes** | Health behaviour |
| **Quality of the review (AMSTAR)** | 10 |
| **Quality of the included studies** | The majority of interventions were examined in single studies. The included studies were of moderate quality with allocation concealment and blinding being potential sources of bias in the majority of studies. |

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| **van Eijken 2003** | |
| **Review question/objective:**  What is the effectiveness of interventions, both multifaceted and tailored, that aim to improve medicines adherence in older people living in the community? | |
| **Studies** | Search date up to: June 2001  Number of studies related to medicines use: 14  Study design: RCT |
| **Participants** | Patients: people aged 60 years (median > 70); community-dwelling.  Carers: none.  Professionals: none. |
| **Setting** | Community, pharmacy, home, primary care |
| **Interventions** | Single generalised intervention; multifaceted generalised intervention; multifaceted tailored intervention; control |
| **Maps to intervention taxonomy categories** | Supporting behaviour change, Improving quality |
| **Outcomes** | Health behaviour |
| **Quality of the review (AMSTAR)** | 6 |
| **Quality of the included studies** | The methodological quality of the studies was moderate. Although all 14 included studies were RCTs, many had methodological limitations that may introduce bias: only 3 reported power calculation to justify sample size; only 4 described randomisation explicitly; only 1 conducted intention-to-treat analysis; and proportion of patients followed up was unclear in 5 trials. |

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| **van Wijk 2005** | |
| **Review question/objective:**  Do interventions delivered by community pharmacists improve patient adherence to chronic medicines? | |
| **Studies** | Search date up to: November 2003  Number of studies related to medicines use: 17  Study design:  RCT, BA, other |
| **Participants** | Patients: patients prescribed medicine for a chronic disease (lasting > 3 months).  Carers: none.  Professionals: community pharmacists. |
| **Setting** | Community, pharmacy |
| **Interventions** | Education; counselling and monitoring (at prescription refill or initial fill, pharmacist incorporation of written patient questions, identification of medicines problems); chart review and identification of drug related problems; usual care |
| **Maps to intervention taxonomy categories** | Providing information or education, Support |
| **Outcomes** | Health behaviour |
| **Quality of the review (AMSTAR)** | 5 |
| **Quality of the included studies** | Studies were generally small in size, and only a minority of studies reported conducting a power calculation and most contained methodological limitations that may introduce bias. Overall, several studies were of poor design for assessing effectiveness, and in many baseline adherence was high which may mask intervention effects. Overall quality of included studies was poor: only a minority of included studies blinded outcome assessors or had < 10% loss to follow up; randomisation was not clear in many studies; and several included studies were of non-randomised design and this may introduce bias. |

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| **Vergouwen 2003** | |
| **Review question/objective:**  What is the effectiveness of interventions to improve adherence to antidepressant medicines in patients with unipolar depression? | |
| **Studies** | Search date up to: January 2002  Number of studies related to medicines use: 19  Study design: RCT |
| **Participants** | Patients: people with unipolar depression.  Carers: none.  Professionals: physicians, nurses, psychiatrists, psychologists. |
| **Setting** | Primary care, outpatient |
| **Interventions** | Education (outpatient); education (primary care); multimodal collaborative care (primary care; including counselling, general and emotional support, psychotherapy); dosage regimen; usual care |
| **Maps to intervention taxonomy categories** | Providing information or education, Supporting behaviour change, Support, Improving quality |
| **Outcomes** | Health behaviour, health status and wellbeing |
| **Quality of the review (AMSTAR)** | 5 |
| **Quality of the included studies** | There were methodological limitations to included studies which may introduce bias, and several studies on patient education in particular were of poor methodological quality. Few details of quality assessment were reported, except for numbers completing, which ranged from 38% to 100% in included trials |

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| **Vermeire 2005** | |
| **Review question/objective:**  What are the effects of interventions to improve adherence to treatment recommendations for people with type 2 diabetes mellitus? | |
| **Studies** | Search date up to: November 2002  Number of studies related to medicines use: 21  Study design: RCT, CT, CBA, other |
| **Participants** | Patients: people with Type 2 diabetes.  Carers: none.  Professionals: none. |
| **Setting** | Primary care, outpatient |
| **Interventions** | Nurse led interventions; home aides; diabetes education programmes; pharmacy based interventions; dosing and frequency interventions; other: patient participation programme; oral versus injected medicines; fundus photography; patient participation consultation; counselling; usual care |
| **Maps to intervention taxonomy categories** | Providing information or education, Acquiring skills and competencies, Supporting behaviour change |
| **Outcomes** | Health behaviour, health status and wellbeing, knowledge and understanding |
| **Quality of the review (AMSTAR)** | 10 |
| **Quality of the included studies** | Overall, of 21 included studies, 3 were considered at low risk of bias; 13 moderate; and 5 high risk of bias. In 5 randomised trials, randomisation and allocation were both adequate; in 6 trials there was adequate randomisation but not concealment of allocation; and in 4 studies both were unclear due to lack of data. Groups were similar at baseline in 15 trials. In 3 studies blinding of patients, administrators and outcome assessors was adequate; 2 studies had adequate blinding of patients, but not of administrators and outcome assessors; in 1 study there was adequate blinding of patients, but unclear blinding of administrators or outcome assessors; in 11 studies data any blinding was unclear; and 1 study did not apply any form of blinding. In 11 studies, groups were provided with comparable care (1 study not equivalent; missing in 5 studies); analysis was on an intention-to-treat basis in 8 studies, and other losses to follow-up were adequately described in 15 (inadequately in 6 studies). |

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| **Volmink 2006** | |
| **Review question/objective:**  Does directly observed therapy (DOT) cure or improve treatment completion in people with clinically active tuberculosis or requiring prevention of active disease? | |
| **Studies** | Search date up to: May 2007  Number of studies related to medicines use: 11  Study design: RCT, CT |
| **Participants** | Patients: low, middle and high-income countries; preventive therapy for tuberculosis or clinically active tuberculosis.  Carers: none.  Professionals: none. |
| **Setting** | Outpatient, community, home, primary care |
| **Interventions** | DOT; DOT at home or at clinic; DOT by family member, community health worker, nurse, family member, lay health worker; DOT for prophylaxis with IV drug users (own location or treatment centre); self-administration |
| **Maps to intervention taxonomy categories** | Supporting behaviour change, Minimising risks or harms |
| **Outcomes** | Health behaviour, system benefits, health status and wellbeing |
| **Quality of the review (AMSTAR)** | 10 |
| **Quality of the included studies** | Several of the included studies had methodological limitations that may introduce bias. Generation of the allocation sequence was adequate in 7 trials; inadequate in 1 and unclear in the remainder. Allocation concealment was adequate in 4 trials; unclear in 3; and inadequate in those remaining. Blinding of outcome assessment occurred in only 4 trials; while completeness of follow up was adequate in all but 6 trials (2 trials with > 20% excluded from analysis; 4 trials where follow-up was rated unclear). |

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| **Wright 2006** | |
| **Review question/objective:**  Do self-administration programmes improve medicine adherence, risks associated with medicines, clinical and other outcomes for people in hospital? | |
| **Studies** | Search date up to: March 2004  Number of studies related to medicines use: 47  Study design: RCT, CT, CBA, ITS, BA, other |
| **Participants** | Patients: not specified.  Carers: none.  Professionals: pharmacists, nursing staff. |
| **Setting** | Hospital, long-term care |
| **Interventions** | Self-administration programmes (including one or more of the following in combination): Discharge planning and/or counselling; reminders (diary cards, record sheets); information provision and education (written, verbal); compliance aids; structured teaching; nurse or technician or pharmacist administration; control |
| **Maps to intervention taxonomy categories** | Acquiring skills and competencies, Minimising risks or harms, Providing information or education, Support, Supporting behaviour change |
| **Outcomes** | Health behaviour, knowledge and understanding, consumer evaluation of care, adverse events |
| **Quality of the review (AMSTAR)** | 5 |
| **Quality of the included studies** | No health outcomes, treatment failures or hospitalisation data were reported. Included trials were generally small and several were of poor design for assessing intervention effectiveness. The majority of included studies had serious methodological limitations, including lack of blinding and sample attrition, and this likely introduces bias. |

|  |  |
| --- | --- |
| **Yankova 2008** | |
| **Review question/objective:**  Does structured preoperative education on patient controlled analgesia (PCA) improve pain management post-surgery? | |
| **Studies** | Search date up to: Not stated  Number of studies related to medicines use: 6  Study design: RCT, CT |
| **Participants** | Patients: surgical patients (16 years and older) prescribed requiring PCA postoperatively.  Carers: none.  Professionals: none. |
| **Setting** | Hospital |
| **Interventions** | Structured PCA education; informal routine PCA education |
| **Maps to intervention taxonomy categories** | Providing information or education, Acquiring skills and competencies |
| **Outcomes** | Knowledge and understanding, health status and wellbeing |
| **Quality of the review (AMSTAR)** | 5 |
| **Quality of the included studies** | This review suggests that although knowledge may be improved by structured patient education on PCA, compared to informal or routine education, pain control is not consistently improved. Included studies were of variable methodological quality: while 5 of 6 studies used random allocation and withdrawals were generally well described, only the minority (2 of 6) blinded study researchers, and such limitations may introduce bias. Additionally content or delivery of routine education (control) was not well described in any study. |

|  |  |
| --- | --- |
| **Zygmunt 2002** | |
| **Review question/objective:**  Do psychosocial interventions improve adherence to antipsychotic medicines in people with schizophrenia? | |
| **Studies** | Search date up to: December 2000  Number of studies related to medicines use: 39  Study design: RCT, CT |
| **Participants** | Patients: people with schizophrenia requiring antipsychotic medicine.  Carers: family members.  Professionals: none. |
| **Setting** | Outpatient, hospital, home, community |
| **Interventions** | Pyschoeducation (dissemination of knowledge about disease, treatment and medicines); group programmes (peer support and shared identification); family (influence on patient illness); cognitive (attitudes and beliefs towards medicines); behavioural; and, community (support and rehabilitation); standard care; other interventions |
| **Maps to intervention taxonomy categories** | Providing information or education, Facilitating communication and/or decision making, Supporting behaviour change, Support |
| **Outcomes** | Health behaviour, health status and wellbeing |
| **Quality of the review (AMSTAR)** | 4 |
| **Quality of the included studies** | Limited outcomes were reported. Effectiveness of components of multifaceted interventions could not be assessed. No included study rigorously assessed adherence; and methodological quality was variable, although no further details were provided so risk of bias is unknown. |

**Characteristics of excluded reviews**

|  |  |
| --- | --- |
| **Author Date** | **Reason for exclusion** |
| Akl 2011 | Moderate or lower relevance |
| Akl 2011b | Moderate or lower relevance |
| Al-Ansary 2011 | Moderate or lower relevance |
| Allemann 2009 | Moderate or lower relevance |
| Allen 2009 | Moderate or lower relevance |
| Alvarez-Jimenez 2011 | Moderate or lower relevance |
| Ammenworth 2008 | Moderate or lower relevance |
| [Ara 2004](file:///C:\Users\RRyan\Desktop\Ara%202004) | Moderate or lower relevance |
| [Armour 2005](file:///C:\Users\RRyan\Desktop\Armour%202005) | Moderate or lower relevance |
| [Arnold 2005](file:///C:\Users\RRyan\Desktop\Arnold%202005) | Moderate or lower relevance  (indirect) |
| [Arroll 2003](file:///C:\Users\RRyan\Desktop\Arroll%202003) | Overlap |
| Asfar 2011 | Moderate or lower relevance |
| [Bailey 2009](file:///C:\Users\RRyan\Desktop\Bailey%202009) | Moderate or lower relevance |
| Banham 2010 | Moderate or lower relevance |
| Baradaran 2010 | Moderate or lower relevance |
| Barlow 2010 | Moderate or lower relevance |
| Barnard 2007 | Moderate or lower relevance |
| Barnard 2010 | Moderate or lower relevance |
| Batty 2010 | Moderate or lower relevance |
| Baumeister 2011 | Moderate or lower relevance |
| Belling 2009 | Moderate or lower relevance |
| Beney 2000 | Updated; replaced by Nkansah 2010 |
| Berkman 2011 | Moderate or lower relevance |
| [Blackstock 2006](file:///C:\Users\RRyan\Desktop\Blackstock%202006) | Moderate or lower relevance |
| Blaya 2010 | Moderate or lower relevance |
| Bloomfield 2011 | Overlap |
| Boonacker 2010 | Moderate or lower relevance |
| [Bordley 2000](file:///C:\Users\RRyan\Desktop\Bordley%202000) | Too indirect to consumer |
| Boren 2009 | Moderate or lower relevance |
| Boren 2009b | Moderate or lower relevance |
| Borkhoff 2011 | Moderate or lower relevance |
| [Bosch-Capblanch 2007](file:///C:\Users\RRyan\Desktop\Bosch-Capblanch%202007) | Moderate or lower relevance |
| Bosch-Capblanch 2011 | Moderate or lower relevance |
| Boyd 2009 | Moderate or lower relevance |
| Boyle 2011 | Moderate or lower relevance |
| [Bradley 2008](file:///C:\Users\RRyan\Desktop\Bradley%202008) | Moderate or lower relevance |
| [Bravata 2007](file:///C:\Users\RRyan\Desktop\Bravata%202007) | Moderate or lower relevance |
| Bray 2010 | Moderate or lower relevance |
| [Bridle 2005](file:///C:\Users\RRyan\Desktop\Bridle%202005) | Moderate or lower relevance |
| [Briss 2000](file:///C:\Users\RRyan\Desktop\Briss%202000) | Overlap |
| [Brown 2004](file:///C:\Users\RRyan\Desktop\Brown%202004) | Moderate or lower relevance |
| Brown 2011 | Moderate or lower relevance |
| Brownstein 2007 | Moderate or lower relevance |
| Bunn 2004 | Moderate or lower relevance |
| Burton 2010 | Moderate or lower relevance |
| [Cabana 2004](file:///C:\Users\RRyan\Desktop\Cabana%202004) | Moderate or lower relevance |
| Cabassa 2007 | Moderate or lower relevance |
| Cameron 2010 | Moderate or lower relevance |
| Cape 2010 | Moderate or lower relevance |
| Carson 2012 | Moderate or lower relevance |
| Carter 2009 | Moderate or lower relevance |
| Chan 2011 | Moderate or lower relevance |
| [Chang 2007](file:///C:\Users\RRyan\Desktop\Chang%202007) | Moderate or lower relevance |
| Chisholm 2008 | Moderate or lower relevance |
| Chisholm-Burns 2010 | Low quality (AMSTAR < 4) |
| [Christensen 2007](file:///C:\Users\RRyan\Desktop\Christensen%202007) | Overlap |
| Churchill 2009 | Moderate or lower relevance |
| [Clar 2007](file:///C:\Users\RRyan\Desktop\Clar%202007) | Moderate or lower relevance |
| [Clark 2007](file:///C:\Users\RRyan\Desktop\Clark%202007) | Moderate or lower relevance |
| Clark 2010 | Moderate or lower relevance |
| Clement 2009 | Moderate or lower relevance |
| Coffman 2009 | Moderate or lower relevance |
| Coleman 2010 | Moderate or lower relevance |
| Cole-Lewis 2010 | Moderate or lower relevance |
| Concha 2009 | Moderate or lower relevance |
| Connock 2007 | Overlap |
| [Connor 2004](file:///C:\Users\RRyan\Desktop\Connor%202004) | Overlap |
| [Cooper 2006](file:///C:\Users\RRyan\Desktop\Cooper%202006) | Moderate or lower relevance |
| Coren 2010 | Moderate or lower relevance |
| [Costello 2004](file:///C:\Users\RRyan\Desktop\Costello%202004) | Overlap |
| Costello 2008 | Moderate or lower relevance |
| [Cote 2005](file:///C:\Users\RRyan\Desktop\Cote%202005) | Overlap |
| Cox 2008 | Low quality (AMSTAR < 4) |
| [Craven 2006](file:///C:\Users\RRyan\Desktop\Craven%202006) | Moderate or lower relevance |
| [Currell 2000](file:///C:\Users\RRyan\Desktop\Currell%202000) | Moderate or lower relevance |
| Cushing 2010 | Moderate or lower relevance |
| Cutrona 2010 | Low quality (AMSTAR < 4) |
| Dalal 2010 | Moderate or lower relevance |
| Dale 2008 | Moderate or lower relevance |
| Dalton 2008 | Moderate or lower relevance |
| [Davey 2005](file:///C:\Users\RRyan\Desktop\Davey%202005) | Moderate or lower relevance |
| de Belvis 2009 | Moderate or lower relevance |
| [Deakin 2005](file:///C:\Users\RRyan\Desktop\Deakin%202005) | Moderate or lower relevance |
| Dean 2010 | Low quality (AMSTAR < 4) |
| Deenadayalan 2010 | Moderate or lower relevance |
| Dieterich 2010 | Moderate or lower relevance |
| Ditewig 2010 | Moderate or lower relevance |
| [Desplenter 2006](file:///C:\Users\RRyan\Desktop\Desplenter%202006) | Overlap |
| Dexheimer 2008 | Low quality (AMSTAR < 4) |
| [Doggett 2005](file:///C:\Users\RRyan\Desktop\Doggett%202005) | Moderate or lower relevance |
| Dolan 2008 | Low quality (AMSTAR < 4) |
| [Dolder 2003](file:///C:\Users\RRyan\Desktop\Dolder%202003) | Overlap |
| [Donald 2005](file:///C:\Users\RRyan\Desktop\Donald%202005) | Moderate or lower relevance |
| Dorresteijn 2011 | Moderate or lower relevance |
| Duncan 2010 | Moderate or lower relevance |
| Durrani 2009 | Moderate or lower relevance |
| [Ebrahim 2006](file:///C:\Users\RRyan\Desktop\Ebrahim%202006) | Moderate or lower relevance |
| [Effing 2007](file:///C:\Users\RRyan\Desktop\Effing%202007) | Moderate or lower relevance |
| [Ersser 2007](file:///C:\Users\RRyan\Desktop\Ersser%202007) | Moderate or lower relevance |
| Eslami 2009 | Moderate or lower relevance |
| [Fahey 2005](file:///C:\Users\RRyan\Desktop\Fahey%202005) | Moderate or lower relevance |
| [Fahey 2006](file:///C:\Users\RRyan\Desktop\Fahey%202006) | Moderate or lower relevance |
| Fatourechi 2009 | Moderate or lower relevance |
| Fealy 2009 | Moderate or lower relevance |
| Felder 2011 | Moderate or lower relevance |
| Ferreira 2009 | Moderate or lower relevance |
| Ferron 2009 | Moderate or lower relevance |
| [Finley 2003](file:///C:\Users\RRyan\Desktop\Finley%202003) | Low quality (AMSTAR < 4) |
| Fischer 2010 | Moderate or lower relevance |
| Fjeldsoe 2009 | Moderate or lower relevance |
| Fleury 2009 | Moderate or lower relevance |
| Flodgren 2011 | Moderate or lower relevance |
| Forsetlund 2009 | Moderate or lower relevance |
| Forsetlund 2010 | Moderate or lower relevance |
| [Forster 2008](file:///C:\Users\RRyan\Desktop\Forster%202008) | Moderate or lower relevance |
| [Foster 2007](file:///C:\Users\RRyan\Desktop\Foster%202007) | Moderate or lower relevance |
| Fox 2009 | Moderate or lower relevance |
| Freund 2009 | Moderate or lower relevance |
| [Gagnon 2007](file:///C:\Users\RRyan\Desktop\Gagnon%202007) | Moderate or lower relevance |
| [Gaston 2005](file:///C:\Users\RRyan\Desktop\Gaston%202005) | Moderate or lower relevance |
| [Gensichen 2006](file:///C:\Users\RRyan\Desktop\Gensichen%202006) | Moderate or lower relevance |
| George 2008 | Overlap |
| Gialamas 2010 | Moderate or lower relevance |
| [Gibson 2002](file:///C:\Users\RRyan\Desktop\Gibson%202002) | Moderate or lower relevance |
| [Gibson 2003](file:///C:\Users\RRyan\Desktop\Gibson%202003) | Moderate or lower relevance |
| [Gilbody 2003](file:///C:\Users\RRyan\Desktop\Gilbody%202003) | Moderate or lower relevance |
| [Gill 1999](file:///C:\Users\RRyan\Desktop\Gill%201999) | Moderate or lower relevance  (indirect) |
| [Gillespie 2001](file:///C:\Users\RRyan\Desktop\Gillespie%202001) | Moderate or lower relevance |
| Gillespie 2009 | Moderate or lower relevance |
| Glasdam 2010 | Moderate or lower relevance |
| [Glazier 2006](file:///C:\Users\RRyan\Desktop\Glazier%202006) | Moderate or lower relevance |
| Glenton 2011 | Overlap |
| Glueckauf 2009 | Moderate or lower relevance |
| Gogia 2010 | Moderate or lower relevance |
| Goldman 2007 | Low quality (AMSTAR < 4) |
| Goulding 2010 | Moderate or lower relevance |
| Govindan 2010 | Moderate or lower relevance |
| Graziano 2009 | Moderate or lower relevance |
| [Grilli 2002](file:///C:\Users\RRyan\Desktop\Grilli%202002) | Moderate or lower relevance  (indirect) |
| Guldberg 2009 | Moderate or lower relevance |
| [Gunn 2006](file:///C:\Users\RRyan\Desktop\Gunn%202006) | Moderate or lower relevance |
| [Haby 2001](file:///C:\Users\RRyan\Desktop\Haby%202001) | Moderate or lower relevance |
| Hailey 2008 | Moderate or lower relevance |
| Hajjar 2007 | Low quality (AMSTAR < 4) |
| Halpern 2006 | Updated; replaced by Halpern 2011 |
| Han 2012 | Moderate or lower relevance |
| [Handford 2006](file:///C:\Users\RRyan\Desktop\Handford%202006) | Moderate or lower relevance |
| [Harding 2005](file:///C:\Users\RRyan\Desktop\Harding%202005) | Moderate or lower relevance |
| [Harris 2005](file:///C:\Users\RRyan\Desktop\Harris%202005) | Moderate or lower relevance |
| [Harris 2006](file:///C:\Users\RRyan\Desktop\Harris%202006) | Moderate or lower relevance |
| Hart 2010 | Overlap |
| Hartmann 2010 | Moderate or lower relevance |
| Hawkins 2007 | Low quality (AMSTAR < 4) |
| Hawthorne 2010 | Moderate or lower relevance |
| [Haynes 1996](file:///C:\Users\RRyan\Desktop\Haynes%201996) | Overlap |
| [Heideman 2005](file:///C:\Users\RRyan\Desktop\Heideman%202005) | Moderate or lower relevance |
| Heinrich 2010 | Moderate or lower relevance |
| Hemmingsen 2011 | Moderate or lower relevance |
| [Henderson 1999](file:///C:\Users\RRyan\Desktop\Henderson%201999) | Moderate or lower relevance |
| Heneghan 2006a | Updated; replaced by Mahtaini 2011 |
| Heneghan 2006b | Updated; replaced by Garcia-Alamino 2010 |
| Herman 2009 | Low quality (AMSTAR < 4) |
| [Hersh 2006](file:///C:\Users\RRyan\Desktop\Hersh%202006) | Moderate or lower relevance |
| Heselmans 2009 | Moderate or lower relevance |
| [Hey 2005](file:///C:\Users\RRyan\Desktop\Hey%202005) | Moderate or lower relevance |
| [Higgins 2004](file:///C:\Users\RRyan\Desktop\Higgins%202004) | Overlap |
| [Hiller 2002](file:///C:\Users\RRyan\Desktop\Hiller%202002) | Moderate or lower relevance |
| Hodge 2010 | Moderate or lower relevance |
| [Hodnett 2000](file:///C:\Users\RRyan\Desktop\Hodnett%202000) | Moderate or lower relevance |
| Hodnett 2011 | Moderate or lower relevance |
| Hoeks 2011 | Moderate or lower relevance |
| [Holland 2005](file:///C:\Users\RRyan\Desktop\Holland%202005) | Moderate or lower relevance |
| Hollands 2010 | Moderate or lower relevance |
| Hood 2010 | Moderate or lower relevance |
| Hoogendoorn 2010 | Moderate or lower relevance |
| Horsley 2010 | Moderate or lower relevance |
| Huffman 2010 | Moderate or lower relevance |
| [Hulscher 1999](file:///C:\Users\RRyan\Desktop\Hulscher%201999) | Moderate or lower relevance |
| [Hwang 2005](file:///C:\Users\RRyan\Desktop\Hwang%202005) | Moderate or lower relevance |
| [Ilott 2005](file:///C:\Users\RRyan\Desktop\Ilott%202005) | Overlap |
| [Ioannidis 2001](file:///C:\Users\RRyan\Desktop\Ioannidis%202001) | Moderate or lower relevance (indirect) |
| Irani 2010 | Moderate or lower relevance |
| [Jaber 2006](file:///C:\Users\RRyan\Desktop\Jaber%202006) | Moderate or lower relevance |
| [Jamtvedt 2006](file:///C:\Users\RRyan\Desktop\Jamtvedt%202006) | Moderate or lower relevance |
| Johansson 2010 | Moderate or lower relevance |
| [Johnson 2003](file:///C:\Users\RRyan\Desktop\Johnson%202003) | Moderate or lower relevance |
| [Jones 2002](file:///C:\Users\RRyan\Desktop\Jones%202002) | Moderate or lower relevance |
| [Jovicic 2006](file:///C:\Users\RRyan\Desktop\Jovicic%202006) | Moderate or lower relevance |
| [Kaboli 2006](file:///C:\Users\RRyan\Desktop\Kaboli%202006) | Low quality (AMSTAR < 4) |
| Kangelaris 2009 | Moderate or lower relevance |
| Kang-Yi 2010 | Moderate or lower relevance |
| [Kaper 2005](file:///C:\Users\RRyan\Desktop\Kaper%202005) | Moderate or lower relevance |
| [Karjalainen 1999](file:///C:\Users\RRyan\Desktop\Karjalainen%201999) | Moderate or lower relevance |
| [Karjalainen 2003a](file:///C:\Users\RRyan\Desktop\Karjalainen%202003a) | Moderate or lower relevance |
| [Karjalainen 2003b](file:///C:\Users\RRyan\Desktop\Karjalainen%202003b) | Moderate or lower relevance |
| Kastner 2008 | Moderate or lower relevance |
| [Kendrick 2000](file:///C:\Users\RRyan\Desktop\Kendrick%202000) | Overlap, outdated |
| Kendrick 2008 | Moderate or lower relevance |
| Kirby 2008 | Low quality (AMSTAR < 4) |
| Kisley 2011 | Moderate or lower relevance |
| Kongnyuy 2009 | Moderate or lower relevance |
| [Kripalani 2007](file:///C:\Users\RRyan\Desktop\Kripalani%202007) | Overlap |
| Krishna 2009 | Low quality (AMSTAR < 4) |
| [Krueger 2003](file:///C:\Users\RRyan\Desktop\Krueger%202003) | Overlap, low quality (AMSTAR < 4) |
| Kruk 2006 | Overlap, low quality (AMSTAR < 4) |
| [Kwan 2004](file:///C:\Users\RRyan\Desktop\Kwan%202004) | Moderate or lower relevance |
| [Lagarde 2007](file:///C:\Users\RRyan\Desktop\Lagarde%202007) | Moderate or lower relevance |
| Lagarde 2009 | Moderate or lower relevance |
| Lagarde 2011 | Moderate or lower relevance |
| Lai 2010 | Moderate or lower relevance |
| Lai 2010b | Overlap |
| [Lancaster 2002](file:///C:\Users\RRyan\Desktop\Lancaster%202002) | Moderate or lower relevance |
| [Lancaster 2004](file:///C:\Users\RRyan\Desktop\Lancaster%202004) | Moderate or lower relevance |
| Lancaster 2005 | Moderate or lower relevance |
| Lassi 2010 | Moderate or lower relevance |
| [Leach 2006](file:///C:\Users\RRyan\Desktop\Leach%202006) | Moderate or lower relevance |
| Légaré 2010 | Moderate or lower relevance |
| Lemmens 2009 | Moderate or lower relevance |
| [Lewin 2001](file:///C:\Users\RRyan\Desktop\Lewin%202001) | Moderate or lower relevance |
| Lewin 2005 | Updated; replaced by Lewin 2010 |
| Li 2010 | Moderate or lower relevance |
| Li 2011 | Moderate or lower relevance |
| Liang 2011 | Moderate or lower relevance |
| Lindsay 2010 | Moderate or lower relevance |
| [Liss 2002](file:///C:\Users\RRyan\Desktop\Liss%202002) | Moderate or lower relevance |
| Lodewijckx 2010 | Moderate or lower relevance |
| Lopez 2009 | Moderate or lower relevance |
| Lopez 2010 | Moderate or lower relevance |
| [Loveman 2003](file:///C:\Users\RRyan\Desktop\Loveman%202003) | Moderate or lower relevance |
| Lu 2008 | Low quality (AMSTAR < 4) |
| Lugtenberg 2000 | Moderate or lower relevance |
| Lumley 2009 | Moderate or lower relevance |
| [Lussier 2006](file:///C:\Users\RRyan\Desktop\Lussier%202006) | Moderate or lower relevance |
| Maeda 2009 | Low quality (AMSTAR < 4) |
| [Malone 2007](file:///C:\Users\RRyan\Desktop\Malone%202007) | Moderate or lower relevance |
| Maric 2009 | Moderate or lower relevance |
| [Marshall 1998](file:///C:\Users\RRyan\Desktop\Marshall%201998) | Moderate or lower relevance |
| [Martire 2005](file:///C:\Users\RRyan\Desktop\Martire%202005) | Moderate or lower relevance |
| Martire 2010 | Moderate or lower relevance |
| Matteson 2010 | Moderate or lower relevance |
| [McClure 2005](file:///C:\Users\RRyan\Desktop\McClure%202005) | Moderate or lower relevance |
| [McDonald 2002](file:///C:\Users\RRyan\Desktop\McDonald%202002) | Overlap |
| [McGraw 2004](file:///C:\Users\RRyan\Desktop\McGraw%202004) | Overlap |
| [McKinstry 2006](file:///C:\Users\RRyan\Desktop\McKinstry%202006) | Moderate or lower relevance |
| McLean 2010 | Moderate or lower relevance |
| McLean 2011 | Moderate or lower relevance |
| Meyer-Massetti 2011 | Low quality (AMSTAR < 4) |
| Michael 2010 | Moderate or lower relevance |
| Michael 2010b | Moderate or lower relevance |
| [Michie 2003](file:///C:\Users\RRyan\Desktop\Michie%202003) | Moderate or lower relevance |
| Minet 2010 | Moderate or lower relevance |
| [Mistiaen 2006](file:///C:\Users\RRyan\Desktop\Mistiaen%202006) | Moderate or lower relevance |
| Mohanan 2009 | Moderate or lower relevance |
| Moonesinghe 2011 | Moderate or lower relevance |
| Motamedi 2011 | Moderate or lower relevance |
| [Murray 2005](file:///C:\Users\RRyan\Desktop\Murray%202005) | Moderate or lower relevance |
| Nabhan 2011 | Moderate or lower relevance |
| [Ndiaye 2005](file:///C:\Users\RRyan\Desktop\Ndiaye%202005) | Overlap |
| [Newell 1999](file:///C:\Users\RRyan\Desktop\Newell%201999) | Overlap, outdated |
| Ni 2009 | Moderate or lower relevance |
| [Niesink 2007](file:///C:\Users\RRyan\Desktop\Niesink%202007) | Moderate or lower relevance |
| [Nilsen 2006](file:///C:\Users\RRyan\Desktop\Nilsen%202006) | Moderate or lower relevance |
| [Norris 2006](file:///C:\Users\RRyan\Desktop\Norris%202006) | Moderate or lower relevance |
| [Nose 2003](file:///C:\Users\RRyan\Desktop\Nose%202003) | Overlap |
| [O'Connor 2009](file:///C:\Users\RRyan\Desktop\O'Connor%202009) | Moderate or lower relevance |
| [Odegaard 2004](file:///C:\Users\RRyan\Desktop\Odegaard%202004) | Overlap |
| Oeseberg 2009 | Moderate or lower relevance |
| Okoli 2010 | Moderate or lower relevance |
| Oldenmenger 2009 | Low quality (AMSTAR < 4) |
| Ontario HTA series 2008 | Moderate or lower relevance |
| Oringanje 2009 | Moderate or lower relevance |
| [Page 2005](file:///C:\Users\RRyan\Desktop\Page%202005) | Moderate or lower relevance |
| [Pampallona 2002](file:///C:\Users\RRyan\Desktop\Pampallona%202002) | Overlap |
| Papadakis 2010 | Moderate or lower relevance |
| Paré 2007 | Moderate or lower relevance |
| Parienti 2009 | Low quality (AMSTAR < 4) |
| Pearson 2009 | Moderate or lower relevance |
| [Pegurri 2005](file:///C:\Users\RRyan\Desktop\Pegurri%202005) | Overlap |
| [Pekkala 2002](file:///C:\Users\RRyan\Desktop\Pekkala%202002) | Moderate or lower relevance |
| [Pelletier 2001](file:///C:\Users\RRyan\Desktop\Pelletier%202001) | Moderate or lower relevance |
| [Petersen 2006](file:///C:\Users\RRyan\Desktop\Petersen%202006) | Moderate or lower relevance |
| Petersen 2009 | Moderate or lower relevance |
| [Pharoah 2006](file:///C:\Users\RRyan\Desktop\Pharoah%202006) | Moderate or lower relevance |
| Pickup 2011 | Moderate or lower relevance |
| [Pignone 2005](file:///C:\Users\RRyan\Desktop\Pignone%202005) | Moderate or lower relevance |
| Pimouguet 2011 | Moderate or lower relevance |
| [Ploeg 2005](file:///C:\Users\RRyan\Desktop\Ploeg%202005) | Moderate or lower relevance |
| Polisena 2009 | Moderate or lower relevance |
| Polisena 2010 | Moderate or lower relevance |
| [Ponniah 2007](file:///C:\Users\RRyan\Desktop\Ponniah%202007) | Overlap |
| Poolsup 2008 | Moderate or lower relevance |
| Poolsup 2009 | Moderate or lower relevance |
| Post 2009 | Moderate or lower relevance |
| Postma 2009 | Moderate or lower relevance |
| [Powell 2003](file:///C:\Users\RRyan\Desktop\Powell%202003) | Moderate or lower relevance |
| Rackal 2011 | Moderate or lower relevance |
| [Raymond 2007](file:///C:\Users\RRyan\Desktop\Raymond%202007) | Moderate or lower relevance |
| [Raynor 2007](file:///C:\Users\RRyan\Desktop\Raynor%202007) | Overlap |
| [Reda 2001](file:///C:\Users\RRyan\Desktop\Reda%202001) | Moderate or lower relevance |
| Reda 2009 | Moderate or lower relevance |
| Reed 2010 | Moderate or lower relevance |
| Reeves 2010 | Moderate or lower relevance |
| [Renders 2000](file:///C:\Users\RRyan\Desktop\Renders%202000) | Moderate or lower relevance |
| Rex 2006 | Low quality (AMSTAR < 4) |
| Ryhanen 2010 | Moderate or lower relevance |
| [Rice 2004](file:///C:\Users\RRyan\Desktop\Rice%202004) | Moderate or lower relevance |
| [Riemsma 2003](file:///C:\Users\RRyan\Desktop\Riemsma%202003) | Moderate or lower relevance |
| Rigotti 2008 | Moderate or lower relevance |
| Robertson 2010 | Low quality (AMSTAR < 4) |
| [Roccaforte 2005](file:///C:\Users\RRyan\Desktop\Roccaforte%202005) | Moderate or lower relevance |
| [Rollason 2003](file:///C:\Users\RRyan\Desktop\Rollason%202003) | Low quality (AMSTAR < 4) |
| Russell-Minda 2009 | Moderate or lower relevance |
| [Sajatovic 2004](file:///C:\Users\RRyan\Desktop\Sajatovic%202004) | Overlap |
| Saksena 2010 | Moderate or lower relevance |
| Samoocha 2010 | Moderate or lower relevance |
| [Sanders 2006](file:///C:\Users\RRyan\Desktop\Sanders%202006) | Moderate or lower relevance |
| [Sangani 2001](file:///C:\Users\RRyan\Desktop\Sangani%202001) | Moderate or lower relevance |
| Sanghera 2006 | Low quality (AMSTAR < 4) |
| Santschi 2011 | Moderate or lower relevance |
| Saokaew 2010 | Moderate or lower relevance |
| Savage 2011 | Moderate or lower relevance |
| Schedlbauer 2004 | Updated, replaced by Schedlbauer 2010 |
| Schedlbauer 2007 | Overlap |
| Schedlbauer 2009 | Overlap |
| Schiffman 2010 | Moderate or lower relevance |
| [Schroeder 2004a](file:///C:\Users\RRyan\Desktop\Schroeder%202004a) | Overlap |
| [Scott 2003](file:///C:\Users\RRyan\Desktop\Scott%202003) | Moderate or lower relevance |
| [Scott 2008](file:///C:\Users\RRyan\Desktop\Scott%202008) | Moderate or lower relevance |
| Scott 2011 | Moderate or lower relevance |
| Shahab 2009 | Moderate or lower relevance |
| [Shaw 2007](file:///C:\Users\RRyan\Desktop\Shaw%202007) | Moderate or lower relevance |
| Shea 2009 | Low quality (AMSTAR < 4) |
| [Shepperd 2004](file:///C:\Users\RRyan\Desktop\Shepperd%202004) | Moderate or lower relevance |
| Shepperd 2010 (update of Shepperd 2004) | Moderate or lower relevance |
| Shojania 2009 | Moderate or lower relevance |
| Shojania 2010 | Moderate or lower relevance |
| [Siebenhofer 2004](file:///C:\Users\RRyan\Desktop\Siebenhofer%202004) | Overlap |
| Simoni 2006 | Overlap |
| [Simpson 2005](file:///C:\Users\RRyan\Desktop\Simpson%202005) | Too indirect to consumer |
| [Sinclair 2004](file:///C:\Users\RRyan\Desktop\Sinclair%202004) | Moderate or lower relevance |
| Smeets 2007 | Moderate or lower relevance |
| [Smetana 2007](file:///C:\Users\RRyan\Desktop\Smetana%202007) | Moderate or lower relevance |
| [Smith 2001](file:///C:\Users\RRyan\Desktop\Smith%202001) | Moderate or lower relevance |
| [Smith 2005](file:///C:\Users\RRyan\Desktop\Smith%202005) | Moderate or lower relevance |
| Smith 2007 | Moderate or lower relevance |
| [Smith 2007a](file:///C:\Users\RRyan\Desktop\Smith%202007a) | Moderate or lower relevance |
| [Smith 2007b](file:///C:\Users\RRyan\Desktop\Smith%202007b) | Moderate or lower relevance |
| Smith 2008 | Moderate or lower relevance |
| Smith 2010 | Moderate or lower relevance |
| Sorsdahl 2009 | Moderate or lower relevance |
| St John 2009 | Moderate or lower relevance |
| Stacey 2011 (update of O’Connor 2009) | Moderate or lower relevance |
| Steffen 2009 | Moderate or lower relevance |
| Stemer 2010 | Low quality (AMSTAR < 4) |
| Stinson 2009 | Moderate or lower relevance |
| [Stokes 2007](file:///C:\Users\RRyan\Desktop\Stokes%202007) | Moderate or lower relevance |
| Stolic 2010 | Moderate or lower relevance |
| Sutcliffe 2011 | Moderate or lower relevance |
| [Szilagyi 2000](file:///C:\Users\RRyan\Desktop\Szilagyi%202000) | Overlap |
| [Tapp 2007](file:///C:\Users\RRyan\Desktop\Tapp%202007) | Moderate or lower relevance |
| [Taylor 2005](file:///C:\Users\RRyan\Desktop\Taylor%202005) | Moderate or lower relevance |
| Thomas 2010b | Overlap |
| Tieu 2010 | Moderate or lower relevance |
| [Toelle 2004](file:///C:\Users\RRyan\Desktop\Toelle%202004) | Moderate or lower relevance |
| Towfigh 2008 | Moderate or lower relevance |
| Tremblay 2008 | Moderate or lower relevance |
| [Tsai 2005](file:///C:\Users\RRyan\Desktop\Tsai%202005) | Moderate or lower relevance |
| [Tully 2000](file:///C:\Users\RRyan\Desktop\Tully%202000) | Low quality (AMSTAR < 4) |
| [Turnock 2005](file:///C:\Users\RRyan\Desktop\Turnock%202005) | Moderate or lower relevance |
| [Urquhart 2005](file:///C:\Users\RRyan\Desktop\Urquhart%202005) | Qualitative review |
| Vaapio 2009 | Moderate or lower relevance |
| [Valk 2005](file:///C:\Users\RRyan\Desktop\Valk%202005) | Moderate or lower relevance |
| [Van der Wal 2005](file:///C:\Users\RRyan\Desktop\Van%20der%20Wal%202005) | Moderate or lower relevance |
| Van Rosse 2009 | Low quality (AMSTAR < 4) |
| Viswanathan 2009 | Moderate or lower relevance |
| [Volmink 1997](file:///C:\Users\RRyan\Desktop\Volmink%201997) | Overlap |
| Von Gunten 2007 | Low quality (AMSTAR < 4) |
| [Walburn 2001](file:///C:\Users\RRyan\Desktop\Walburn%202001) | Qualitative review |
| Walker 2010 | Moderate or lower relevance |
| [Walton 2008](file:///C:\Users\RRyan\Desktop\Walton%202008) | Too indirect to consumer |
| Watson 2009 | Moderate or lower relevance |
| Webel 2010 | Low quality (AMSTAR < 4) |
| Wei 2011 | Moderate or lower relevance |
| Welschen 2005 | Moderate or lower relevance |
| Welsh 2011 | Moderate or lower relevance |
| [Wendt 1998](file:///C:\Users\RRyan\Desktop\Wendt%201998) | Overlap, outdated |
| Wens 2008 | Moderate or lower relevance |
| [Werawatganon 2005](file:///C:\Users\RRyan\Desktop\Werawatganon%202005) | Moderate or lower relevance |
| White 2010 | Overlap |
| [Whittaker 2002](file:///C:\Users\RRyan\Desktop\Whittaker%202002) | Overlap |
| [Winkley 2006](file:///C:\Users\RRyan\Desktop\Winkley%202006) | Moderate or lower relevance |
| [Winterbottom 2008](file:///C:\Users\RRyan\Desktop\Winterbottom%202008) | Moderate or lower relevance |
| [Wise 2007](file:///C:\Users\RRyan\Desktop\Wise%202007) | Moderate or lower relevance |
| Wise 2008 | Overlap |
| Witter 2012 | Moderate or lower relevance |
| [Wofford 2005](file:///C:\Users\RRyan\Desktop\Wofford%202005) | Moderate or lower relevance |
| [Wolf 2003](file:///C:\Users\RRyan\Desktop\Wolf%202003) | Moderate or lower relevance |
| Wolfstadt 2008 | Low quality (AMSTAR < 4) |
| Wong 2010 | Overlap |
| [Woolacott 2006](file:///C:\Users\RRyan\Desktop\Woolacott%202006) | Moderate or lower relevance |
| Wu 2010 | Moderate or lower relevance |
| Young 2010 | Overlap |
| Yourman 2008 | Low quality (AMSTAR < 4) |
| [Yu 2006](file:///C:\Users\RRyan\Desktop\Yu%202006) | Moderate or lower relevance |
| Yuen 2010 | Moderate or lower relevance |
| Zaki 2008 | Moderate or lower relevance |
| Zedler 2011 | Overlap |
| [Zhang 2007](file:///C:\Users\RRyan\Desktop\Zhang%202007) | Moderate or lower relevance |

**Results of included reviews (by review, alphabetical)**

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| **Aaserud 2006** | | | |
| ***Pharmaceutical policies: effects of reference pricing, other pricing, and purchasing policies***  **Maps to: Improving quality** | | | |
| **Intervention & comparison** | **Outcome** | **No. studies or ints\*** | **Results** |
| Reference pricing policy | Reference medicine use (immediately following policy introduction) | 4 | Relative change = 119% (range 60% to 196%); 2 studies significant increase; 2 studies increase (significance unknown) |
| Reference medicine use (6 months to 1 year after policy introduction) | 3 | 1 study further increase relative to effects immediately after policy introduction (significance unknown); 2 studies less of an increase relative to effects immediately after policy introduction (significance unknown) |
| Use of cost share medicines (immediately following policy introduction) | 4 | Relative decrease = 38% (range 19% to 42%) |
| Total use of reference group medicines | 2 | Non-significant changes |
| Total use of medicines other than reference group | 2 | Non-significant changes |
| Patient payment share of total expenditure (immediately following policy introduction) | 1 | Increase from 0% to 16% |
| Medicine pricing | 2 | 2 studies decrease (range 11 to 26%): 1 study significant reduction in both generic and brand medicines; 1 study brand price reduction (significance unknown) |
| Mortality | 2 | Non-significant changes |
| Emergency visits and hospital admissions through emergency department | 10 ints | Relative increase = 9% (range -41% to 49%); 1 int significant increase; 5 ints non-significant increase |
| Non-emergency hospital admissions | 10 ints | Relative decrease = 12% (range -42% to 7%); 3 ints non-significant increase |
| Physician office visits | 10 ints | Relative increase = 1% (range -18% to 31%); 5 ints significant increase |
| Index pricing policy | Medicine use - brand medicines | 1 | Relative decrease = 29% immediately after policy introduction; 43% decrease at 6 months after policy introduction |
| Medicine use - generic medicines | 1 | Relative increase = 114% immediately after policy introduction; 55% increase at 6 months after policy introduction |
| Medicines pricing | 1 | Decreases immediately and long-term, with long-term decreases being larger than changes immediately post policy introduction for both brand (1.1% decrease) and generic (5.3% decrease) drugs |
| ***Summary of results:***  Reference pricing increased reference medicine use (4 studies) and decreased the use of cost share medicines (4 studies) immediately following policy change, and these trends were still apparent at 6 months to 1 year, although diminished in size (3 studies). Reference pricing reduced total medicine expenditures (2 studies) but increased the patients’ share of total medicines expenditure of total (1 study). Reference pricing had no significant effects on mortality; increased emergency visits and hospital admissions through the emergency department in a minority (1 of 10 interventions) of studies; and had mixed effects on non-emergency hospital admissions and physician visits (5 of 10 comparisons significant increase). There were no significant effects of reference pricing on total reference medicines use, and use of medicines other than those in the reference group. Index pricing reduced brand medicines use and increased use of generic medicines (1 study), and decreased costs of both medicines over time, although cost reductions were larger with generic than with brand medicines over time. | | | |
| ***Effectiveness statements:***  There is some evidence that reference pricing increases use of reference medicines and decreases the use of cost share medicines and total medicines expenditure - it is generally effective. There is some evidence that reference pricing increases healthcare use - results are mixed. There is insufficient evidence to determine the effects of reference pricing on patient expenditure, or the effects of index pricing. | | | |

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| **Al-aqeel 2011** | | | |
| ***Strategies for improving adherence to antiepileptic drug treatment in patients with epilepsy***  **Maps to: Providing information or education, Supporting behaviour change** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Identifying cues (implementation intervention) vs usual care | Adherence score | 1 | Non-significant increase |
| % doses taken | 1 | MI = 14.30 more out of 100 (95% CI: 3.79 to 24.81 more) |
| % days correct dose | 1 | MI = 23.40 more out of 100 (95% CI: 10.14 to 36.66 more) |
| % doses as scheduled | 1 | MI = 23.50 more out of 100 (95% CI: 9.26 to 37.74 more) |
| Motivational interviewing vs usual care | Adherence score | 1 | Non-significant reduction |
| % doses taken | 1 | Non-significant reduction |
| % doses as scheduled | 1 | Non-significant reduction |
| AGAS scores | 1 | Non-significant reduction |
| Education and psychosocial therapy vs usual care | Adherence (blood serum concentration) | 1 | Significant increase |
| Seizure frequency | 1 | Non-significant changes |
| Patient reminders plus counselling leaflet vs usual care | Serum levels | 1 | Significant increase |
| Dosage | 1 | Non-significant changes |
| Adherence (prescription refill frequency) | 1 | Non-significant increase |
| Seizure frequency | 1 | Non-significant reduction |
| Patient education vs usual care | Knowledge | 1 | Improved (significance unknown) |
| Serum levels | 1 | Non-significant changes |
| Adherence (from serum levels) | 1 | Significant increase |
| ***Summary of results:***  All results are based on single studies. Identifying cues (implementation intervention) significantly improved adherence, percentage of doses taken, percentage of days with correct dose and percentage of doses as scheduled compared to usual care, however, overall patient reported adherence using Antiretroviral General Adherence Scale (AGAS) score was non-significantly increased. Motivationa interviewing non-significantly reduced adherence, percentage of doses taken, percentage of doses as scheduled and AGAS scores compared to usual care. Education and psychosocial therapy significantly increased adherence measured by blood serum concentration but not seizure frequency compared to usual care. Patient reminders plus counselling significantly increased blood serum concentration but did not reduce seizure frequency without increasing dosage; however overall adherence was non-significantly increased. Patient education improved knowledge (significance unknown) but non-significantly changed serum levels compared to usual care. Parent education significantly improved adherence compared to usual care. | | | |
| ***Effectiveness statements:***  There is insufficient evidence to determine whether interventions to improve adherence to epilepsy medication are effective. | | | |

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| **Amico 2006** | | | |
| ***Efficacy of antiretroviral therapy adherence interventions: a research synthesis of trials, 1996 to 2004***  **Maps to: Providing information or education, Supporting behaviour change, Acquiring skills and competencies, Support, Minimising risks or harms** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Any intervention to improve adherence vs control | Adherence | 26 int | Significant increase, standardised MI = 0.35 (95% CI: 0.20 to 0.51). For people with poor adherence at baseline standardised MI = 0.62 (95% CI: 0.42 to 0.82); for those with unknown adherence levels at baseline standardised MI = 0.19 (95% CI: 0.10 to 0.27) |
| ***Summary of results:***  Twenty four studies including 26 interventions to improve antiretroviral therapy (ART) adherence were meta-analysed and a small effect size was found. Analysis showed that the intensity of the intervention, ranging from low intensity ad hoc conversations with healthcare professionals, to moderate intensity reminders and support, to high intensity self-management training, was not related to effect size. Duration of the intervention was also not related. A larger effect was seen in those people in whom adherence problems were known or anticipated, when compared with people with unknown pre-existing adherence problems. | | | |
| ***Effectiveness statements:***  There is some evidence that interventions to improve ART adherence lead to small increases in adherence - they are generally effective. | | | |

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| **Argarwal 2011** | | | |
| ***Role of home blood pressure monitoring in overcoming therapeutic inertia and improving hypertension control***  **Maps to: Acquiring skills and competencies, Minimising risks or harms** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Home blood pressure monitoring vs clinic blood pressure monitoring | Systolic BP (mmHg) | 22 | Significant reduction by -2.21 mmHg (95% CI: -3.03 to -1.39 lower) |
| Diastolic BP (mmHg) | 22 | Significant reduction by -0.82 mmHg (95% CI: -1.37 to -0.27 lower) |
| Arterial pressure BP (mmHg) | 3 | Significant reduction by -4.0 mmHg (95% CI: -6.22 to -1.79 lower) |
| Medicine reduction | 9 | Significant increase, RR = 2.02 (95% CI: 1.32 to 3.1) |
| Medicine increase | 12 | Non-significant increase |
| Home blood pressure monitoring vs clinic blood pressure monitoring | Therapeutic inertia | 15 | Significant reduction, RR = 0.82 (95% CI: 0.68 to 0.99) |
| ***Summary of results:***  Home blood pressure monitoring significantly reduced systolic, diastolic and arterial blood pressures and therapeutic inertia (defined as no change in medicines use despite elevated blood pressure). It significantly improved blood pressure as well as promoting a reduction in medicines use, but did not significantly change medicines use increase compared to clinic blood pressure monitoring. | | | |
| ***Effectiveness statements:***  There is sufficient evidence that home blood pressure monitoring improves clinical markers for hypertension, medicines overuse and therapeutic inertia - it is generally effective. There is insufficient evidence that home blood pressure monitoring leads to increased hypertensive medicines use - it is generally ineffective. | | | |

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| **Austvoll-Dahlgren 2008** | | | |
| ***Pharmaceutical policies: effects of cap and co-payment on rational drug use***  **Maps to: Improving quality** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Any cap vs full drug coverage | Overall prescription medicines use (general population) | 2 ints | 2 ints significant decrease: 1 int decreased by 42.7% (95%CI: -50.1% to -35.4%); 1 int decreased by 17% |
| Overall prescription medicines use (vulnerable population) | 1 int | 1 int significant decreased by 46% |
| "Essential" medicines use | 1 int | Significant decrease by 28.0% |
| Discretionary medicines use | 2 ints | 2 ints significant decrease: 1 int decrease by 42.7% (95% CI: -50.1% to -35.4%); 1 int decrease in "symptomatic relief drugs" by 38.0% and "limited efficacy drugs" by 58.0% |
| Healthcare use | 3 ints | 1 int non-significant change to hospitalisation rates (for complicated or uncomplicated peptic ulcers and non peptic ulcer conditions); 1 int significant 17% increase in psychiatric hospital admissions and significant 43.0% to 57.0% increase per month increase in number of community mental health centre visits (severe schizophrenia population); 1 int significant increase in risk of admissions to nursing homes (elderly population): RR = 1.8 (95% CI: 1.2 to 2.6) |
| One cap (5 reimbursed scripts) vs another (6 reimbursed scripts) | Overall prescription medicines use (vulnerable population) | 1 int | 1 int significant decrease by 5.9% (95% CI: -9.4 to -2.4) |
| Out of pocket expenditure (vulnerable population) | 1 int | 1 int significant increase by 26.5% (95% CI: 16.5% to 36.5%) |
| Fixed co-payment (US$1.50 to $3 per script filled) vs full coverage | Overall medicines use general population | 2 ints | 2 ints significant decrease, range = 10.6% to 10.7% lower per person |
| Patient medicine expenditure | 2 ints | 2 ints significant decrease, range = 5.2% to 6.7% lower |
| Fixed co-payment (US$0.50 per script filled) vs full coverage | Overall medicines use vulnerable populations | 2 ints | 1 int significant decrease by 12% per person; 1 int decreases (significance unclear), range = 5 to 17% lower across population subgroups |
| Fixed (income based) co-payment vs full coverage | Overall medicines use general population | 1 int | 1 int decrease by 14.2% (significance unclear) |
| "Essential" medicines use | 1 int | 1 int decrease, range = 10.3% to 15.9% (significance unclear) |
| Discretionary medicines use | 1 int | 1 int decrease, range = 14.3% to 24.3% (significance unclear) |
| Fixed co-payment (US$3) plus cap vs full coverage | Overall medicines use general population | 1 int | 1 int significant decrease by 12% |
| "Essential" medicines use | 1 int | Non-significant change |
| Medicine expenditure per prescription | 1 int | 1 int significant increase by 8.5% |
| Patient medicine expenditure | 1 int | 1 int significant decrease by 8.8% |
| One fixed co-payment vs another | Overall medicines use general population | 3 ints | 2 ints decreases, range = 21.3% to 22.5% lower per person; 1 int mixed effects |
| Patient medicines expenditure | 2 ints | 2 ints significant increase, range = 32.2 to 39.8% higher |
| Fixed co-payment with ceiling vs full coverage | "Essential" medicines use general populations | 1 int | 1 int significant decrease, range = 1.3 to 3.7% lower |
| "Essential" medicines use vulnerable populations | 2 ints | 2 ints significant decrease, range = 2.3 to 23% lower |
| Discretionary medicines use general population | 1 int | 1 int significant decrease by 1.3% |
| Discretionary medicines use vulnerable population | 2 ints | 2 ints significant decrease, range = 1.2 to 24% lower |
| One fixed co-payment (income-based) with ceiling vs another | “Essential” medicines use | 1 int | 1 int significant decrease by 22% |
| Discretionary medicines use | 1 int | 1 int significant decrease by 27% |
| Any co-insurance with ceiling vs full coverage | Overall medicines use general population | 4 ints | 4 ints significant decreases, range 33.6% to 18.4% lower |
| "Essential" medicines use vulnerable populations | 1 int | 1 int significant decrease by 17.7% (95% CI: -14.8 to -20.5) |
| Discretionary medicines use general population | 1 int | 1 int significant decrease by 19.4% (95% CI: -17.4 to -21.4) |
| One co-insurance with ceiling vs another | "Essential" medicines use general populations | 1 int | 1 int significant decrease by 6.9% (95% CI: -5.5 to -8.4) |
| Discretionary medicines use general population | 1 int | 1 int significant decrease by 14.0% (95% CI: -13.0 to -15.0) |
| Fixed co-payment plus coinsurance and ceiling vs fixed co-payment plus coinsurance | Overall medicines use | 1 int | 1 int mixed effects: significant decreases were seen women's use of drugs across medicines, while men's use of drugs did not show sustained significant changes |
| Change in tiered co-payment | Overall medicines use across tiers | 3 ints | 2 ints significant decrease, range = 5 to 24% lower; 1 int non-significant changes |
| Branded medicines use | 3 ints | 1 int significant decrease by 34%; 1 int significant decrease, range = 4 to 22% lower; 1 int non-significant changes |
| Generic medicines use | 1 int | Non-significant decrease |
| Patient medicines expenditure | 3 ints | 1 int significant increase 23% above predicted levels; 1 int significant increase, range = 118% to 148%; 1 int mixed effects |
| Changes to healthcare use | 1 int | Non-significant increases |
| ***Summary of results:***  Any cap intervention: Compared with full coverage, overall prescription medicines use in both general (2 ints) and vulnerable populations (1 int) decreased significantly, as did discretionary medicines use (2 ints). Essential medicines use also decreased significantly (1 int), and while effects on health care were mixed there were significant increases in admissions with the majority (2 of 3) of interventions. One cap (5 reimbursed scripts, vulnerable population): Compared to another cap (6 reimbursed scripts), overall prescription medicines use (1 int) and out-of-pocket drug expenditure (1 int) significantly decreased. Fixed co-payments (US$1.50 to $3 general population;US$0.50 vulnerable population ) per script: Compared with full medicines coverage, for fixed co-payments (US$0.50 vulnerable population), overall prescription medicines use (2 ints) decreased significantly. Compared with full medicines coverage, for fixed co-payments (US$1.50 to $3 per script general population), overall prescription medicines use (2 ints) and patient medicines expenditure (2 ints) decreased significantly. Fixed (income based) co-payment interventions: Compared with full coverage, there were decreases (significance unclear) in overall prescription medicines use (1 int) and both discretionary and essential medicines use (1 int). Fixed (US$3) co-payment plus cap interventions: Compared with full coverage, overall prescription medicines use decreased significantly (1 int), as did patient medicines expenditure (1 int), however, medicines expenditure per prescription significantly increased (1 int), while essential medicines use did not change significantly. One fixed co-payment intervention: Compared with another fixed co-payment, overall prescription medicines use decreased significantly (2 of 3 ints), but patient medicines expenditure significantly increased (2 ints). Fixed co-payment with ceiling interventions: Compared with full coverage, discretionary and essential medicines use decreased significantly in both general (1 int) and vulnerable populations (2 ints). Fixed co-payment (income based) interventions: Compared with another fixed co-payment, both discretionary (1 int) and essential medicines use (1 int) significantly decreased. Any co-insurance with ceiling interventions: Compared with full coverage there were significant decreases in overall medicines use in the general population (4 ints) and discretionary medicines use (1 int), but essential medicines use in the vulnerable population (1 int) also significantly decreased. One co-insurance with ceiling intervention: Compared with another co-insurance with ceiling intervention, both discretionary and essential medicines use significantly decreased (1 int). Fixed co-payment plus co-insurance, comparing with and without ceiling had mixed effects on overall medicines use (1 int). Comparative changes in tiered co-payments significantly decreased overall medicines use (2 of 3 ints) and branded medicines use (2 of 3 ints). Generic medicines use non-significantly decreased (1 int), but patient medicines expenditure significantly increased (2 of 3 ints) and effects on health service use increased non-significantly (1 int). | | | |
| ***Effectiveness statements:***  Overall, cap and copayment policy interventions have mixed effects on medicines use and costs. There is some evidence that caps may decrease overall and discretionary medicines use but may increase healthcare use - the results are mixed. There is insufficient evidence to determine the effects of caps on essential medicines use or patient expenditure. There is some evidence that fixed co-payments, with or without a cap, decrease overall prescription medicines use, but with mixed effects on patient medicines expenditure and cost per prescription - the results are mixed; and there is insufficient evidence to determine effects on essential medicines use. There is some evidence that fixed co-insurance with ceiling interventions decrease overall medicines use in the general population; but there is insufficient evidence to determine effects on essential and discretionary medicines use in general or vulnerable populations - the results are mixed. There is some evidence that changes in tiered co-payments interventions decrease overall and branded medicines use, and increase patient medicines expenditure - the results are mixed. There is insufficient evidence to determine the effects of changes to tiered co-payments on generic medicines use or health service use. There is insufficient evidence to determine the effects of fixed (income-based) interventions or fixed co-payment plus co-insurance, with or without ceiling interventions, on overall, essential or discretionary medicines use. | | | |

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| **Bainbridge 2006** | | | |
| ***Patient-controlled versus nurse-controlled analgesia after cardiac surgery - a meta-analysis.***  **Maps to: Acquiring skills and competencies, Minimising risks or harms** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Patient-controlled analgesia (PCA) vs nurse-controlled analgesia (NCA) | Pain (10 point VAS) (24 hr) | 7 | Non-significant reduction |
| Pain (10 point VAS) (48 hr) | 8 | MR = – 0.73 (95% CI: -1.19 to -0.27) points lower on a 10-point scale |
| Morphine (or equivalent) consumption (mg, 24hr) | 7 | MI = 6.84 mg (95% CI: 0.97 to 12.72) higher |
| Cumulative morphine (or equivalent) consumption (mg, 48 hr) | 5 | MI = 10.46 mg (95% CI: 2.02 to 18.9) higher |
| Satisfaction | 3 | Non-significant increase |
| Severe pain | 3 | Non-significant reduction |
| All-cause mortality | 3 | Non-significant increase |
| Discontinuations | 6 | Non-significant increase |
| Adverse events (post-operative nausea or vomiting) | 5 | Non-significant reduction |
| Adverse events (respiratory depression) | 4 | Non-significant increase |
| Adverse events (severe sedation) | 3 | Non-significant reduction |
| ***Summary of results:***  PCA non-significantly decreased pain at 24 hours, but at 48 hours this decrease was statistically significant, when compared with NCA. PCA also statistically significantly increased analgesic consumption at both 24 and 48 hours, compared with NCA. Comparative effects of PCA and NCA were not statistically significantly different in terms of outcomes of all-cause mortality, patient satisfaction, severe pain, adverse events (nausea and vomiting, severe sedation, respiratory depression), or treatment discontinuation. | | | |
| ***Effectiveness statements:***  There is some evidence from trials that PCA increases analgesic consumption – it is generally effective, and decreases pain scores, when compared with NCA — the results are mixed. There is insufficient evidence to support PCA over NCA in terms of mortality, satisfaction, adverse events or treatment discontinuation — it is generally ineffective. | | | |

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| **Bain-Brickley 2011** | | | |
| ***Interventions to improve adherence to antiretroviral therapy in children with HIV infection***  **Maps to: Providing information or education, Supporting behaviour change, Support** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Support and medicines diary vs usual care | Adherence (self- report: no missed doses) | 1 | Non-significant reduction |
| Viral load | 1 | Non-significant changes |
| Mean CD4 cell count | 1 | Non-significant reduction |
| Child growth | 1 | Non-significant changes |
| Home based-education plus support vs limited education and support | Adherence (self-report) | 1 | Non-significant increase |
| Adherence (pharmacy refill) | 1 | Significant increase |
| Viral load | 1 | Non-significant changes |
| Peer support group vs no peer support | Adherence | 1 | Non-significant changes |
| Viral load suppression (% people with less than or equal to 200 copies/ml viral load) | 1 | Non-significant increase |
| ART regimen (unboosted protease inhibitor (PI) vs non-nucleoside reverse transcriptase  inhibitor (NNRTI)-based regimen | Adherence (MEMs 80% adherence) | 1 | Non-significant changes |
| Viral load suppression (viral load of < 50 copies/mL) | 1 | Significant increase |
| ***Summary of results:***  All results were based on single studies. A medicines diary intervention delivered with support did not significantly improve adherence or biological outcomes (viral load, CD4 count), or child growth when compared to usual care. Home based-education plus support had mixed effects on adherence measured by self-report and pharmacy refill, and no significant effects on viral load, when compared to limited education and support. Peer support groups did not significantly improve adherence or viral load suppression, when compared to no peer support. An unboosted PI-containing ART regimen, compared to an NNRTI-based regimen, did not significantly alter adherence but did significantly improve viral load suppression. | | | |
| ***Effectiveness statements:***  There is insufficient evidence to determine whether behavioural or medical interventions improve antiretroviral adherence or other outcomes for children with HIV. | | | |

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| **Bayoumi 2009** | | | |
| ***Interventions to improve medication reconciliation in primary care***  **Maps to: Minimising risks or harms, Supporting behaviour change, Improving quality** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Ambulatory care medicines reconciliation vs usual care (before and after assessment; no control group) | Mean proportion of medicines discrepancies | 2 | 1 study significant reduction (prescription medicines) by 39.4%; 1 study non-significant increase (prescription and non-prescription medicines) |
| Proportion of medicine lists with medicines discrepancies | 2 | 1 study significant reduction (prescription medicines) by 22.9%; 1 study non-significant increase (prescription and non-prescription medicines) |
| Clinical relevance of prescription medicines discrepancies detected | 1 | Minor (prescription medicines) discrepancies increased by 7.9%, clinically significant discrepancies reduced by 7% and serious discrepancies reduced by 0.3% (significance unknown) |
| Post-hospital discharge medicines reconciliation vs usual care | Mean proportion of medicines name discrepancies | 1 | Significant reduction by 5.5% (prescription and non-prescription medicines) |
| Mean proportion of medicines dose discrepancies | 1 | Non-significant reduction (prescription and non-prescription medicines) |
| Post-hospital discharge medicines reconciliation vs usual care (before and after assessment; no control group) | Mean proportion of medicines discrepancies | 1 | Non-significant changes (prescription medicines) |
| Clinically important errors detected | 1 | Increase by 1.2% from admission to discharge (significance unknown) |
| ***Summary of results:***  Ambulatory care medicines reconciliation interventions significantly reduced mean proportion of medicines discrepancies and medicine lists with medicines discrepancies in half (1 of 2) of before and after studies. In one of these studies clinically minor discrepancies were increased, while clinically significant and serious discrepancies were decreased but significance of these results was unclear. In a single randomised study, post-hospital discharge medicines reconciliation significantly reduced medicines name but not dose discrepancies, when compared with usual care. In one further before and after study of post-hospital discharge medicines reconciliation there were no changes to mean proportion of medicines discrepancies but there was a small (1.2%) increase in clinically important errors detected (significance unknown). | | | |
| ***Effectiveness statements:***  There is insufficient evidence to determine the effects of medicines reconciliation interventions on medicines discrepancies, clinical or other outcomes. | | | |

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| **Bennett 2009** | | | |
| ***How effective are patient-based educational interventions in the management of cancer pain? Systematic review and meta-analysis.***  **Maps to: Providing information or education, Supporting behaviour change** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Patient-based cancer pain management education vs usual care | Knowledge and attitudes to cancer pain and analgesia | 17 | 7 studies significant increases; 5 studies non-significant increases; 2 studies non-significant reduction; 1 study non-significant changes; 1 study unclear |
| Average pain intensity | 8 | Significant reduction, MR = -1.10 lower (95% CI: -1.80 to -0.41 lower) |
| Maximum pain intensity | 8 | Significant reduction, MR = -0.78 lower (95% CI: -1.21 to -0.35 lower) |
| Least pain | 2 | Significant reduction, MR = -0.98 lower (95% CI: -1.68 to -0.28 lower) |
| Current pain | 4 | Significant reduction, MR = -0.65 lower (95% CI: -1.21 to -0.09 lower) |
| Tolerable pain intensity | 1 | Significant reduction, MR = -0.70 lower (95% CI: -1.11 to -0.29 lower) |
| Mean of worst least and current pain | 1 | Non-significant reduction |
| Pain rating index score | 1 | Non-significant increase |
| Pain intensity (number of words chosen) | 1 | Non-significant increase |
| Total pain quality management score | 1 | Non-significant reduction |
| Pain intensity - other | 4 | 3 studies significant reduction; 1 study non-significant changes |
| Mood or Quality of life | 7 | Non-significant changes |
| Self-efficacy | 6 | 3 studies significant improvement; 3 studies non-significant changes |
| Adherence | 3 | 1 study significant increase, MI = 1.92 (95% CI: 1.13 to 2.71 higher); 2 studies non-significant changes |
| Pain interference with daily life | 8 | 1 study significant reduction; 7 studies non-significant changes |
| Analgesics used | 3 | 2 studies reduction (significance unclear); 1 study increase (significance unclear) |
| Side effects experienced | 1 | Non-significant changes |
| Cost | 1 | Mean cost 9 cents more per participant with a desired outcome (significance unclear) |
| ***Summary of results:***  Patient-based cancer pain management education significantly reduced average pain intensity, maximum pain intensity, least pain, current pain and tolerable pain intensity and in the majority of studies significantly reduced other measures of pain intensity (3 of 4) compared to usual care. Patient-based cancer pain management education significantly improved self-efficacy in half (3 of 6) studies compared to usual care, and in the minority of studies, significantly increased adherence (1 of 3), and significantly increased knowledge and attitudes to cancer pain and analgesia (7 of 17) and significantly reduced pain interference with daily life (1 of 8) compared to usual care, but had non-significant effects on mood or quality of life. The effects of such cancer patient-based educational interventions on analgesic use were mixed with reductions in 2 studies and an increase in one - however the significance of these was unclear. In single studies, patient-based cancer pain management education increased mean costs by 9 cents per patient with a desired outcome compared to usual care (1 study; significance unknown), and had non-significant effects on mean of worst, least and current pain, pain rating index score, number of words chosen to describe pain intensity, total pain quality management score, and side effects compared to usual care. | | | |
| ***Effectiveness statements:***  There is sufficient evidence that patient-based cancer pain management education improves average pain intensity, maximum pain intensity, least pain, current pain and tolerable pain intensity - they are generally effective. There is some evidence that patient-based cancer pain management education improves knowledge and attitudes to cancer pain and analgesia, other measures of pain intensity, self-efficacy and analgesic use – the results were mixed. There is insufficient evidence to determine the effect of patient-based cancer pain management education on mean of worst least and current pain, pain rating index score, number of words chosen to describe pain intensity, total pain quality management score, side effects and cost. Although there is some evidence that patient-based cancer pain management education improves mood or quality of life, pain interference with daily life and adherence – they are generally ineffective. | | | |

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| **Bhogal 2006** | | | |
| ***Written action plans for asthma in children***  **Maps to: Supporting behaviour change, Facilitating communication and/or decision making, Acquiring skills and competencies, Minimising risks or harms** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Symptom monitoring action plans vs peak flow action plans | Number of patients with at least one acute care visit | 4 | ARR = 11 fewer patients out of 100 (95% CI: 18 to 0 fewer) with symptom monitoring plans |
| Number of patients requiring systemic steroids (per year) | 3 | Non-significant decrease with symptom monitoring plans |
| Withdrawals | 4 | Non-significant change |
| Change in number of symptomatic days per week | 2 | Significant decrease with peak flow written action plan MR =  0.45 (95% CI: 0.04 to 0.86) |
| Number of symptomatic days per week | 2 | Non-significant decrease with peak flow plans |
| Number of parents  intending to use monitoring strategy | 1 | Non-significant decrease with symptom monitoring plans; |
| Number of children intending to use monitoring strategy | 1 | ARI = 14 more people out of 100 (95% CI: 0 to 30 more) with symptom monitoring plans |
| Change in parent-reported quality of life at one year | 3 | Non-significant increase with symptom monitoring plans |
| Change in child-reported quality of life at one year | 2 | Non-significant increase with symptom monitoring plans |
| ***Summary of results:***  There were no significant differences between symptom and peak flow monitoring written action plans for number of patients requiring systemic steroids, withdrawals, change in child or parent quality of life, or number of parents intending to use the monitoring strategy. Significantly more children intended to continue using symptom-based written action plans and had significantly lower risk of exacerbations requiring acute care than children who used peak flow-based written action plans. Children using peak flow based action plans had significantly greater change in the number of symptomatic days per week, but not overall number of symptomatic days per week than those using symptom based written action plans. | | | |
| ***Effectiveness statements:***  There is some evidence that symptom monitoring action plans reduce the number of patients with at lease one acute care visit and increase the number of children intending to use the strategy - they are generally effective. There is insufficient evidence of consistent effects of one action plan versus another on symptoms, use of systemic steroids, quality of life or withdrawals - they are generally ineffective. | | | |

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| **Bower 2006** | | | |
| ***Collaborative care for depression in primary care***  **Maps to: Improving quality** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Collaborative care vs usual care | Adherence | 28 ints | Significant increase, OR = 1.92 (95% CI: 1.54 to 2.39) |
| Depressive symptoms | 34 ints | Significant decrease, OR = 0.24 (95% CI: 0.17 to 0.32) |
| ***Summary of results:***  Collaborative care in primary care settings significantly decreased depressive symptoms and significantly increased antidepressant use, when compared with usual care. | | | |
| ***Effectiveness statements:***  There is some evidence that collaborative care interventions improve antidepressant use and depressive symptoms in adults with depression in primary care - they are generally effective. | | | |

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| **Buckley 2010** | | | |
| ***Service organisation for the secondary prevention of ischaemic heart disease in primary care***  **Maps to: Supporting behaviour change, Providing information or education, Improving quality** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Service organisation intervention vs usual care | Blood pressure within target range (end of study) | 3 | 1 study significant increase; 1 study non-significant increase; 1 study non-significant reduction |
| Mean systolic blood pressure (end of study) | 4 ints | 1 study significant increase; 2 studies study non-significant increase; 1 study non-significant reduction |
| Mean diastolic blood pressure (end of study) | 4 ints | 3 studies study non-significant increase; 1 study non-significant changes |
| Total blood cholesterol within target level (5.2 mmol/l) (end of study) | 2 | 1 study significant increase; 1 study non-significant reduction |
| Total mean cholesterol (end of study) | 3 | 2 studies study non-significant increase; 1 study non-significant changes |
| Prescribed lipid-lowering medicines (end of study) | 6 ints | Non-significant reduction |
| Prescribed beta blockers (end of study) | 3 | Non-significant reduction |
| Prescribed ACE inhibitors (end of study) | 2 | Non-significant reduction |
| Prescribed anti-platelet medicines (end of study) | 6 ints | Non-significant increase |
| ***Summary of results:***  Service organisation interventions significantly improved blood pressure readings within the target range (1 of 3) and mean systolic blood pressure (1 of 4) in the minority of studies when compared to usual care, but non-significantly increased mean diastolic blood pressure in the majority (3 of 4) of studies. Service organisation interventions significantly improved total blood cholesterol levels within the target range in half (1 of 2) of studies, but had non-significant effects on total mean cholesterol levels when compared to usual care. There were no significant effects of service organisation interventions on numbers of lipid-lowering, beta blocker, ACE inhibitor or anti-platelet medicines, when compared to usual care. | | | |
| ***Effectiveness statements:***  There is insufficient evidence that service organisation interventions improve clinical outcomes - the results were mixed. There is insufficient evidence that service organisation interventions improve appropriate prescribing of medicines - they are generally ineffective. | | | |

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| **Castelino 2009** | | | |
| ***Targeting suboptimal prescribing in the elderly: a review of the impact of pharmacy services***  **Maps to: Improving quality, Minimising risks or harms** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Multidisciplinary team including pharmacist intervention vs usual care | Number of potentially inappropriate prescriptions | 2 | Non-significant changes |
| Rate of high-risk medicines | 1 | Non-significant changes |
| MAI score | 2 | 1 study significant reduction; 1 study non-significant reduction |
| Proportion of medicines problems | 1 | Non-significant reduction |
| Proportion of therapeutic duplication | 1 | Significant reduction, AMR = 47 more out of 100 (no CI) |
| Medicines use | 1 | Significant reduction for cardiovascular medicines, AMR = 37% (no CI), non-significant changes for psychotropic medicines or NSAIDs in high risk patients |
| Number of unnecessary medicines | 1 | Non-significant reduction |
| Underuse of drugs (inpatient) | 1 | Significant reduction |
| Underuse of drugs (outpatient) | 1 | Significant reduction |
| Serious adverse medicines reactions | 1 | Significant reduction |
| Pharmacist delivered intervention vs control | Proportion of pharmaceutical care issues resolved | 1 | Significant increase by 41.5% (no CI) |
| MAI score | 3 | Significant reductions |
| Overall prescribing score | 1 | Significant reduction |
| Inappropriate dose prescribed | 1 | Reduction (significance unclear) |
| Inappropriate choice of medicine | 1 | Significant reduction |
| Inappropriate medicines prescribing (schedule, allergy, drug-drug interaction, unnecessary therapy duplication, omitted therapy) | 1 | Non-significant changes |
| Number of potentially inappropriate prescriptions dispensed | 1 | Significant reduction by 101 prescriptions; significant reduction in dispensing of amitriptyline and diazepam |
| Suboptimal prescribing for elderly | 1 | Mixed results, improvement and no changes |
| Adverse medicines events | 2 | Non-significant changes |
| Adherence | 1 | Non-significant changes |
| Knowledge | 1 | Non-significant changes |
| Number of medicines | 1 | Non-significant changes |
| Physician receptivity to pharmacist | 1 | Significant increase |
| Medicines cost | 1 | Non-significant changes |
| Quality of life | 2 | Non-significant changes |
| Satisfaction | 1 | Non-significant changes |
| ***Summary of results:***  A multidisciplinary team intervention including a pharmacist, compared to usual care, significantly reduced proportion of therapeutic duplication (1 study), outpatient and inpatient under use of medicines (1 study), and serious adverse medicines reactions (1 study), and significantly improved MAI score in half (1 of 2) of studies, with mixed effects on medicines use in different populations. Multidisciplinary team interventions including a pharmacist had non-significant effects on numbers of potentially inappropriate prescriptions and unnecessary medicines, and on rate of high-risk medicines and proportion of medicines problems. Pharmacist delivered interventions, compared with control or usual care, significantly improved MAI scores ( 3 studies) and in single studies, improved the proportion of pharmaceutical care issues resolved, physician receptivity to pharmacist, overall prescribing scores, numbers of potentially inappropriate prescriptions dispensed, inappropriate choice of medicine, and inappropriate dose prescribed (1 study, significance unclear), but had non-significant effects on inappropriate medicines prescribing markers and mixed effects on suboptimal prescribing. Pharmacist delivered interventions had non-significant effects, compared with control, on adverse medicines events, adherence, number of medicines, medicine costs, quality of life, satisfaction or knowledge. | | | |
| ***Effectiveness statements:***  There is insufficient evidence to decide between services that include pharmacists in multidisciplinary teams in terms of effects on prescribing or medicines use outcomes. There is some evidence that pharmacist delivered interventions can improve medicines appropriateness (MAI) scores - they are generally effective. There is insufficient evidence that pharmacist delivered interventions improve medicines adverse events or quality of life - they are generally ineffective. There is insufficient evidence to decide between pharmacist delivered services in terms of effects on other prescribing or medicines use outcomes. | | | |

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| **Chivu 2008** | | | |
| ***A systematic review of interventions to increase awareness, knowledge, and folic acid consumption before and during pregnancy***  **Maps to: Providing information or education, Supporting behaviour change** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Intervention to women promoting folic acid consumption (before and after assessment; no control group) | Awareness | 15 | 6 studies non-significant increase; 9 studies significant increase over baseline |
| Knowledge | 10 | 2 studies non-significant increase; 1 study no change; 7 studies significant increase over baseline |
| Folic acid consumption | 14 | 5 studies non-significant increase; 9 studies significant increase over baseline |
| Intervention to women promoting folic acid consumption vs control | Knowledge | 1 | Significant increase |
| Daily folic acid consumption | 1 | Increase (significance unknown) |
| Weekly folic acid consumption | 2 | 1 study significant increase; 1 study non-significant increase |
| Intervention to health professionals promoting folic acid consumption (before and after assessment; no control group) | Knowledge of advised dose | 2 | Increase (significance unknown) |
| Knowledge of recommended duration of treatment | 2 | Increase (significance unknown) |
| Percentage recommending folic acid to women | 5 | Increase (significance unknown) |
| ***Summary of results:***  Of interventions directed to women, there was significantly improved awareness (9 studies of 15), knowledge (7 of 10 studies), and folic acid consumption (9 studies of 14) in the majority of studies post intervention. There was also a significant increase in knowledge in a single controlled study, together with increases in daily and weekly folic acid intake compared with control, although the significance of these results was unclear. Of interventions targeting health professionals there were improvements in knowledge of advised dose (2 studies), treatment duration (2 studies) and proportion recommending folic acid to women (5 studies) post intervention, although significance of these results was unclear. | | | |
| ***Effectiveness statements:***  There is some evidence that interventions targeting women may increase awareness, knowledge and consumption of folic acid - results are mixed. There is insufficient evidence to determine the effects of interventions targeting health professionals. | | | |

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| **De Bleser 2009** | | | |
| ***Interventions to improve medication-adherence after transplantation: a systematic review***  **Maps to: Providing information or education, Supporting behaviour change, Improving quality** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Education (informational, behaviour) intervention (before and after assessment; no control group) | Medicines knowledge | 1 | Significant increase |
| Medicines adherence | 1 | Non-significant changes |
| Education (informational, behaviour) intervention vs usual care | Medicines adherence | 2 | 1 study significant increase; 1 study reduction (significance unknown) |
| Self efficacy | 1 | 1 study increase (significance unknown) |
| Education (informational, affective) intervention vs usual care | Mean ALT levels | 1 | Significant reduction |
| Behavioural intervention vs control | Adherence | 1 | 6% increase in adherence, 1% reduction in adherence and 32% reduction in those who had no change in adherence (significance unknown) |
| Mixed (Informational, Behavioural, Affective) intervention (before and after assessment; no control group) | Target immunosuppressant blood levels | 1 | Non-significant reduction |
| Biopsy proven rejection episodes | 1 | Non-significant reduction |
| ALT levels | 1 | Significant reduction in high ALT levels by 50% less, significant reduction in number of patients with high ALT levels, non significant reduction in median ALT |
| Mixed (informational, behavioural and affective) intervention vs control | Knowledge about transplantation | 1 | Significant increase |
| Adherence | 3 | 3 studies non-significant changes |
| Psychological measures | 1 | Significant increase |
| QoL (carers and patients) | 1 | Significant increase |
| Patient (Informational, behavioural) intervention vs control | Adherence | 2 | Significant increase |
| Patient (informational, behavioural) intervention vs control | Target immunosuppressant blood levels | 2 | 2 studies significant increases, range = 14 to 16% higher |
| Rejection | 1 | Non-significant increase |
| Free immunosuppressants vs control | Adherence | 1 | Non-significant changes |
| Sub-target immunosuppressant blood levels | 1 | Significant reduction |
| ***Summary of results:***  In single studies education interventions with informational and behavioural components significantly increased medicines knowledge and adherence (before and after assessment; no control group), increased self-efficacy (1 study, significance unknown) and medicines adherence in half (1 of 2) of the studies compared to usual care. Education interventions with informational and affective components significantly reduced mean ALT levels compared to usual care (1 study), while a behavioural intervention alone had mixed effects on adherence compared to control (1 study, significance unknown). Mixed informational, behavioural and affective interventions had non-significant effects on target immunosuppressant blood levels and biopsy-proven rejection episodes but mixed effects on ALT levels (1 study before and after assessment; no control group). In addition, in single studies mixed informational, behavioural and affective interventions increased knowledge about transplantation, quality of life and other psychological measures, but not adherence (3 studies), compared with control. Combined patient informational and behavioural interventions significantly increased adherence and target immunosuppressant blood levels (2 studies) compared to  control, but had non-significant effects on rejection (1 study), while provision of free immunosuppressants had non-significant effects on adherence and significantly reduced sub-target immunosuppressant blood levels compared to control (1 study). | | | |
| ***Effectiveness statements:***  There is insufficient evidence to determine the effect on clinical or other outcomes of interventions targeting transplant patients that encompass informational, behavioural or affective components or the provision of free immunosuppressants. | | | |

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| **Ford 2009** | | | |
| ***Directly observed antiretroviral therapy: a systematic review and meta-analysis of randomised clinical trials***  **Maps to: Supporting behaviour change, Minimising risks or harms** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| DOT vs self-administered therapy | Viral suppression | 10 | Non-significant increase |
| Adherence - self-report | 6 | Non-significant increase |
| CD4 T-cell count | 8 | Non-significant increase |
| Loss to follow-up | 9 | Non-significant change |
| All-cause mortality | 7 | Non-significant reduction |
| Resistance mutations | 2 | Non-significant increase |
| AIDS-defining events | 3 | Non-significant reduction |
| ***Summary of results:***  DOT non-significantly improved viral suppression, self-reported HAART adherence, immunological changes, all-cause mortality, and AIDS-defining events, when compared to self-administered therapy. DOT also led to a non-significant increase in development of resistance mutations and did not significantly change losses to follow-up when compared to self-administered therapy. | | | |
| ***Effectiveness statements:***  There is insufficient evidence that DOT improves adherence to HAART or clinical outcomes - it is generally ineffective. | | | |

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| **Garcia-Alamino 2010** | | | |
| **Self-monitoring and self-management of oral anticoagulation**  **Maps to: Acquiring skills and competencies, Minimising risks or harms, Supporting behaviour change** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Self-management vs standard monitoring | Thromboembolic events | 12 | ARR = 2 fewer people out of 100 (95% CI: 3 to 1 fewer) |
| Mortality | 10 | ARR = 2 fewer people out of 100 (95% CI: 2 to 1 fewer) |
| Major haemorrhage | 12 | Non-significant increase |
| Mean INR within target range | 10 | 5 studies significant increase, range 3 to 18% higher; 5 studies non-significant changes |
| Percentage time within range | 7 | 2 studies significant increase, range 9 to 13% higher; 5 studies non-significant changes |
| Minor haemorrhage | 10 | ARR = 6 fewer people out of 100 (95% CI: 8 to 4 fewer) |
| Self-monitoring vs standard monitoring | Thromboembolic events | 7 | Non-significant reduction |
| Mortality | 6 | Non-significant reduction |
| Major haemorrhage | 7 | ARR = 3 fewer people out of 100 (95% CI: 5 to 1 fewer) |
| Mean INR within target range | 4 | 3 studies significant increases, range 10 to 21% more; 1 study non-significant changes |
| Percentage time within range | 4 | 1 study significant increase, 24% higher; 3 studies non-significant changes |
| Minor haemorrhage | 4 | Non-significant reduction |
| Testing frequency | 10 | Frequency of testing was higher in self-management and self-monitoring groups, effect was of variable size |
| Self-management, self-monitoring or standard monitoring | Trial participation | 14 | Mean = 68% refused participation (range 31 to 88%); frequency was higher in older populations |
| Self-management or self-monitoring (no control) | Drop out rates (unable to complete intervention) | 14 | Mean = 25% (range 0% to 57%) of people in intervention group were unable to complete self-monitoring or self-management (no data for control group) |
| Self-management or self-monitoring vs standard monitoring | Treatment satisfaction | 3 | Significant increase with intervention |
| Self-management vs self-monitoring | Treatment satisfaction | 1 | Significantly higher with self-monitoring |
| ***Summary of results:***  Self-management significantly decreased thromboembolic events, mortality, and minor but not major haemorrhages, compared with standard monitoring. Self-management also increased mean INR within target range in half (5 of 10) of studies and percentage of time within range in the minority (2 of 7) of studies. Self-monitoring significantly decreased major haemorrhages but non-significantly decreased thromboembolic events, mortality and minor haemorrhages, compared to standard monitoring. Self-monitoring also increased mean INR within range in the majority (3 of 4) of studies but increased percentage of time within range in only the minority (1 of 4) of studies. Compared with standard monitoring, testing frequency was higher with self-management and self-monitoring, as was treatment satisfaction. In one study comparing self-monitoring and self-management directly, treatment satisfaction was significantly higher with self-monitoring. A significant proportion (mean 25%) of people assigned to self-monitoring or self-management were unable to complete treatment and dropped out, reasons included device problems, physical limitations preventing self-testing inability to attend training or failing the assessment. Trial participation was also low with 68% overall refusing participation. | | | |
| ***Effectiveness statements:***  There is sufficient evidence that self-management interventions (self-testing and self-adjusting therapy based on a predetermined dose schedule) decreases thromboembolic events, mortality and minor haemorrhages – it is generally effective. There is some evidence that self-management can improve average result in therapeutic range – results are mixed, but insufficient evidence that it improves percentage of time within the target range– it is generally ineffective. There is also insufficient evidence that self-management improves major haemorrhages but because these events are rare this result most likely arises due to insufficient power to detect a clinical difference.  There is sufficient evidence that self-monitoring (self-testing and calling clinic for the appropriate dose adjustment) decreases major haemorrhages – it is generally effective. There is some evidence that self-monitoring can improve average result in therapeutic range – results are mixed, but insufficient evidence that it improves percentage of time within the target range or minor haemorrhages– it is generally ineffective. There is insufficient evidence that self-monitoring improves thromboembolic events or mortality but again because these are rare events, these results may arise because of a lack of power to detect a clinical difference. There is some evidence that self-management or self-monitoring increase frequency of testing and satisfaction – they are generally effective. | | | |

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| **Giuffrida 1997** | | | |
| ***Should we pay the patient? Review of financial incentives to enhance patient compliance***  **Maps to: Improving quality** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Financial incentives vs usual care/ no intervention | Adherence with healthcare treatment | 7 int | 5 int non-significant increase; 2 int OR = 2.1 to 4.7 |
| Adherence to medicines use | 5 int | 2 int non-significant increases; 3 studies OR = 3.0 to 4.7 |
| Financial incentives vs other intervention | Adherence with healthcare treatment | 5 int | Non-significant increases; |
| Adherence to medicines use | 8 int | 6 int non-significant increases; 2 int (vs telephone or prompts) OR = 2.5 to 5.6 |
| ***Summary of results:***  A majority of financial interventions (3 of 5) found significant effects on adherence to medicines use when compared with usual care or no treatment. A minority of financial interventions (2 of 8) found significant effects when compared with other interventions. | | | |
| ***Effectiveness statements:***  There is some evidence that financial incentives improves adherence to medicines use - the results for financial interventions compared to no intervention were mixed. There is insufficient evidence to support the use of financial incentives instead of other interventions - it is generally ineffective in comparison. | | | |

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| **Gleeson 2009** | | | |
| ***Interventions to improve adherence and persistence with osteoporosis medications: a systematic literature review***  **Maps to: Providing information or education, Support, Supporting behaviour change** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Patient education vs usual care | Adherence | 1 | Non-significant reduction |
| Persistence | 1 | Non-significant increase |
| Patient education and medicines barriers counselling vs usual care | Adherence | 2 | Significant increase, effect size (ES)\* range: 0.53 to 0.58 more (no CI) |
| Persistence | 1 | Non-significant increase |
| Patient education and physician education vs usual care | Adherence | 1 | Non-significant increase |
| Persistence | 1 | Non-significant increase |
| Simplified dosing and patient support vs usual care | Adherence | 1 | Significant increase in ES\* by 0.17 more (no CI) |
| Persistence | 1 | Significant increase in ES\* by 0.36 more (no CI) |
| Feedback on response to therapy plus patient education and/or medicines barriers counselling vs usual care | Persistence | 2 | Non-significant increase |
| Adherence | 1 | Non-significant increase |
| \*Effect sizes 0f approximately 0.2 are considered to have negligible clinical importance; 0.50 of moderate clinical importance and0.80 of crucial clinical importance. | | | |
| ***Summary of results:***  In single studies, patient education alone, patient plus provider education, and feedback on response to therapy plus patient education and/or medicines barriers counselling interventions had non-significant effects on adherence and persistence compared to usual care. Patient education and medicines barriers counselling (without feedback on response to therapy) significantly improved adherence (2 studies) but only non-significantly increased persistence (1 study) compared to usual care. In a single study, simplified dosing and patient support significantly increased adherence and persistence compared to usual care. | | | |
| ***Effectiveness statements:***  There is insufficient evidence to determine the effects of interventions to improve osteoporosis medicines adherence and persistence. | | | |

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| **Golicki 2008** | | | |
| ***Continuous Glucose Monitoring System in children with type 1 diabetes mellitus: a systematic review and meta-analysis***  **Maps to: Minimising risks or harms** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Continuous Glucose Monitoring System (CGMS) use vs self-monitoring blood glucose (SMBG) | Change in HbA1c | 5 | Non-significant changes |
| Major hypoglycaemic episodes | 5 | No episodes in either group |
| Minor hypoglycaemic episodes | 1 | Non-significant changes |
| Ketoacidosis | 1 | 1 patient from CGMS group admitted to hospital, none in control |
| Adjustments of insulin dose | 2 | 1 study significant increase in number of insulin doses per patient with CGMS, MI = 6.3 (95% CI: 2.88 to 9.72); 1 study non-significant increase |
| Local adverse events | 1 | 23% experienced redness at the CGMS application site, 16% redness and itching and 1 patient experienced painful redness; none led to removal of CGMS |
| Adherence (withdrawal) | 1 | 1 patient withdrew from use of CGMS due to skin irritation at sensor site |
| ***Summary of results:***  The CGMS device use had non-significant effects on glycoslyated haemoglobin (HbA1c) level changes, compared with SMBG, and significantly increased insulin dose adjustments in half of studies (1 of 2). Adverse events were reported in only a few studies: the CGMS device did not significantly affect the numbers of major or minor hypoglycaemic episodes; and two studies reported local adverse events, with withdrawal of the device occurring in 1 patient. One patient with CGMS experienced ketoacidosis requiring hospital admission, compared with none with SMBG. | | | |
| ***Effectiveness statements:***  There is insufficient evidence that CGMS device use improves HbA1c levels when compared to SMBG — it is generally ineffective. There is insufficient evidence to determine the effects of the CGMS device use on medicines use, adverse events or other outcomes. | | | |

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| **Gray 2009** | | | |
| ***Interventions for improving adherence to ocular hypotensive therapy***  **Maps to: Supporting behaviour change, Providing information or education** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Education and individualised care planning vs control | Adherence – missed doses | 2 | 1 study significant reduction by 9%; 1 study non-significant change |
| Adherence problems | 1 | Significant reduction |
| Reminder device vs control | Amount medicine used (grams) | 1 | Significant increase, MI = 2.87 higher (95% CI: 1.70 to 4.03) |
| Adherence | 1 | Non-significant increase |
| Simplified regimen (once daily) vs usual regimen (2 types of drops (4 times daily plus 2 times daily)) | Adherence | 1 | Non-significant changes |
| Simplified regimen (once daily) vs usual regimen (2 types of drops (3 times daily plus 2 times daily)) | Intraocular pressure | 1 | Significant reduction, MR = -2.30 lower (95% CI: -3.85 to -0.75 lower) |
| Adverse effects – visual field defect | 1 | Non-significant reduction |
| Simplified regimen (drops 3 times daily) vs usual regimen (drops 4 times daily) | Missed doses | 1 | Significant reduction, MR = -1.10 lower (95% CI: -1.60 to -0.60 lower) |
| Intraocular pressure | 1 | Non-significant reduction |
| Side effects interfering with QoL | 1 | Significant reduction, MR = -1.60 lower (95% CI: -2.04 to -1.16 lower) |
| Activity limitations interfering with QoL | 1 | Significant reduction, MR = -1.60 lower (95% CI: -2.04 to -1.16 lower) |
| Simplified regimen (gel once daily) vs usual regimen (drops twice daily) | Missed doses | 1 | Non-significant reduction |
| Intraocular pressure | 1 | Non-significant reduction |
| Simplified regimen (twice daily) vs usual regimen (2 types of drops (4 times daily plus 2 times daily)) | Missed doses | 2 | Significant reduction, MR = -0.70 lower (95% CI: -0.90 to -0.50 lower)\* |
| Side effects interfering with QoL | 2 | Significant reduction, MR = -1.10 lower (95% CI: -1.35 to -0.85 lower)\* |
| Activity limitations interfering with QoL | 2 | Significant reduction, MR = -0.72 lower (95% CI: -0.97 to -0.47 lower)\* |
| \* high degree of heterogeneity noted with these results | | | |
| ***Summary of results:***  Education and individualised care planning compared to control, significantly reduced missed doses (1 of 2 studies) and adherence problems (1 study). Reminder devices, compared to control, significantly increased amount of medicine used but did not significantly change adherence in the same study (1 study). Simplified regimens (once daily), compared with the usual regimen (three plus two times daily drops) significantly improved intraocular pressure but not adherence or visual field defects (1 study). Simplified regimens (three times daily), compared with the usual regimen (four times daily), significantly decreased numbers of missed doses and improved side effects interfering with quality of life and activity limitations interfering with quality of life (1 study), but had no significant effects on intraocular pressure. Simplified regimens (gel once daily), compared with the usual regimen (drops twice daily) had no significant effects on missed doses or intraocular pressure in a single study. Simplified regimens (twice daily), compared with the usual regimen (four plus 2 times daily drops), significantly decreased missed doses, and improved side effects interfering with quality of life and activity limitations interfering with quality of life (2 studies). | | | |
| ***Effectiveness statements:***  There is insufficient evidence to determine the effects of education and individualised care planning or reminders on missed doses, medicine use and adherence. There is some evidence that selected simplified dose regimens reduce missed doses and improve quality of life — they are generally effective; however, for other regimen changes there was insufficient evidence to determine effectiveness and overall there is not enough evidence to decide on an optimal dose regimen. | | | |

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| **Halpern 2011** | | | |
| ***Strategies to improve adherence and acceptability of hormonal methods for contraception***  **Maps to: Facilitating communication and decision making, Providing information or education, Support, Supporting behaviour change** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Group motivational counselling vs routine counselling | Discontinuation (6 months) | 1 | Non-significant increase |
| Structured counselling vs routine counselling | Discontinuation (6 months) | 1 | ARR = 15 fewer people out of 100 (95% CI: 20 to 8 fewer) |
| Discontinuation (12 months) | 1 | ARR = 26 fewer people out of 100 (95% CI: 32 to 18 fewer) |
| Multicomponent intervention vs routine counselling | Continuation (12 months) | 1 | Non-significant increase |
| Switched contraceptives (12 months) | 1 | Non-significant increase |
| Pregnancy (one year) | 1 | Non-significant increase |
| Peer vs nurse counselling | Non-compliance (4 months) | 1 | Non-significant reduction |
| Intensive reminders vs written appointment cards | Discontinuation (12 months) | 1 | Non-significant increase |
| On-time injections | 1 | Non-significant reduction |
| Daily text message reminders vs no reminders | Number of missed pills (1 & 3 months) | 1 | Non-significant increase |
| Motivational phone calls vs usual care | Correct use of patch during last month (patch stayed on for 1 week or for 3 weeks) | 1 | Non-significant decrease |
| On-time injections | 1 | Non-significant increase |
| Number of missed pills last month (6 & 18 months) | 1 | Non-significant changes |
| Pregnancy | 1 | ARI = 4 more out of 100 (no CI) |
| ***Summary of results:***  Discontinuation of hormonal contraception was measured in 3 studies: structured counselling including (individual counselling sessions and education (audiovisual messages)) compared with routine counselling (1 study) significantly reduced discontinuation (i.e. improved continuation) of oral and injection hormonal contraception methods at 6 and 12 months; whereas group motivation (1 study) and multicomponent intervention (1 study) each non-significantly increased rates, compared with routine counselling. In single studies, a multicomponent intervention compared with routine counselling non-significantly increased known pregnancies and switching to other contraceptives, and intense phone follow-up using motivational interviewing techniques increased pregnancy rates compared with usual care (significance unknown). Also in single studies, peer compared with nurse counselling, daily text messages compared with none, and motivational phone calls compared with usual care all had non-significant effects on adherence. Intensive reminders compared with written appointment cards (1 study) non-significantly reduced the number of injections given on time. Many studies also measured why women discontinued hormonal methods. One study found that with structured counselling women were less likely to discontinue due to menstrual disturbances. Another study found that group motivational counselling compared with routine counselling slightly reduced discontinuation due to dissatisfaction with the method, although there were no significant changes to discontinuation due to side effects of the selected contraceptive, pregnancy, contraception no longer being needed or any other reason. | | | |
| ***Effectiveness statements:***  There is insufficient evidence to determine if enhanced counselling techniques or other client-provider interventions increase adherence to and continuation of hormonal contraceptives (injection, patch or oral). | | | |

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| **Haynes 2008** |
| ***Interventions for enhancing medication adherence***  **Maps to: Providing information or education, Facilitating communication and/or decision making, Acquiring skills and competencies, Supporting behaviour change, Support, Minimising risks or harms, Improving quality** |
| ***Summary of results:***  Less that half (41 of 93) of the interventions showed significant increases in medicines adherence (5 for short-term treatments and 36 for long-term treatments). A minority of interventions (29 of 93) showed significant improvements in at least one treatment outcome (4 for short-term treatments and 25 for long-term treatments). The majority of effective interventions in short-term treatments were simple (eg counselling, written information and personal phone calls). The majority of effective interventions in long-term treatments were complex (eg combinations of more convenient care, information, counselling, reminders, self-monitoring, reinforcement, family therapy, psychological therapy, crisis intervention, manual telephone follow-up, additional supervision or attention). Of several studies examined the effects of telling patients about adverse effects of medicines, none showed significant negative effects on adherence. |
| ***Effectiveness statements:***  There is some evidence that simple interventions improve adherence and treatment outcomes in short-term treatments, and complex interventions in long-term treatments - results are mixed. |

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| **Haywood 2009** | | | |
| ***A systematic review of barriers and interventions to improve appropriate use of therapies for sickle cell disease***  **Maps to: Providing information or education, Supporting behaviour change, Improving quality** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Provider-targeted intervention (clinical protocol with or without sensitivity training) (before and after study; no control group) | Pain management quality (composite outcome) | 1 | Significant improvement with intervention |
| Service use | 3 | Potential improvement (demonstrated a beneficial effect on indirect outcome or direct where there was a considerable risk of bias: significance unknown) |
| Patient ratings | 2 | Potential improvement (demonstrated a beneficial effect on indirect outcome or direct where there was a considerable risk of bias: significance unknown) |
| Provider-targeted intervention (clinical protocol) vs control | Pain management quality (composite outcome) | 2 | Significant improvement with intervention |
| Provider-targeted intervention (audit and feedback) (before and after study; no control group) | Pain management (composite outcome) | 1 | Potential improvement (demonstrated a beneficial effect on indirect outcome or direct where there was a considerable risk of bias: significance unknown) |
| Provider-targeted intervention (day hospital establishment) vs control | Pain management (composite outcome) | 1 | Potential improvement (demonstrated a beneficial effect on indirect outcome or direct where there was a considerable risk of bias: significance unknown) |
| Provider-targeted intervention (fast track admission) (before and after study; no control group) | Pain management quality (composite outcome) | 1 | Significant improvement with intervention |
| Patient-targeted intervention to improve self-management vs control | Adherence to medicines or health promotion activities | 2 | No changes (improvements or worsening) |
| Patient-targeted intervention to improve self-management (before and after study; no control group) | Adherence to medicines | 1 | No changes (improvements or worsening) |
| Patient-targeted intervention (telephone outreach) (before and after study; no control group) | Receipt of scheduled clinic care | 1 | Significant improvement with intervention |
| ***Summary of results:***  Provider-targeted clinical protocol interventions with or without sensitivity training (before and after study; no control group), significantly improved pain management quality (1 study) and potentially improved patient ratings (2 studies, significance unclear), and significantly improved pain management quality compared with control (2 studies). Provider-targeted audit and feedback intervention (before and after study; no control group) potentially improved pain management (1 study: significance unclear). Provider-targeted day hospital establishment interventions compared to control potentially improved pain management (1 study, significance unknown). A provider-targeted fast track admission intervention (before and after study; no control group) significantly improved pain management quality. Patient-targeted interventions to improve self-management did not significantly change adherence to medicines or health promotion activities (before and after study; no control group), or when compared with control (2 studies). | | | |
| ***Effectiveness statements:***  There is insufficient evidence to determine the effect of provider-targeted interventions on SCD medicines outcomes. There is insufficient evidence to determine the effects of patient-targeted interventions for SCD therapy use outcomes. | | | |

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| **Holland 2008** | | | |
| ***Does pharmacist-led medication review help to reduce hospital admissions and deaths in older people? A systematic review and meta-analysis***  **Maps to: Improving quality, Minimising risks or harms, Providing information or education, Support, Supporting behaviour change** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Pharmacist-led medicines review vs control | Hospital admissions | 17 | Non-significant changes |
| Mortality | 22 | Non-significant changes |
| Number of medicines prescribed | 15 | Significant reduction, MR = -0.48 fewer (95% CI: -0.89 to -0.07) fewer |
| Quality of life | 12 | Non-significant changes |
| Patient satisfaction | 4 | 2 studies significant increase; 1 study non-significant increase; 1 study reduction (significance unknown) |
| Knowledge | 11 | 6 studies significant increase; 2 studies non-significant increase; 3 studies non-significant changes |
| Medicine-related problems | 4 | 4 studies significant reductions |
| Adherence | 14 | 7 studies significant increase; 4 studies non-significant increase; 3 studies non-significant changes |
| Adverse medicine reactions | 9 | 1 study significant reduction; 3 studies non-significant reduction; 3 studies non-significant changes; 2 studies increase (significance unknown) |
| Storage problems | 3 | 2 studies significant reduction; 1 study non-significant changes |
| Unnecessary medicines | 7 | 5 studies significant reduction; 2 studies non-significant reduction |
| Costs | 14 | 4 studies significant reduction; 6 studies non-significant reduction; 2 studies non-significant changes; 2 studies increase (significance unknown) |
| ***Summary of results:***  Pharmacist-led medicines review showed a small but significant decrease in numbers of medicines prescribed (15 studies), but no significant effects on mortality, hospital admissions or quality of life compared with control. Pharmacist-led medicines review significantly improved medicines problems (4 of 4 studies) and in the majority of studies decreased storage problems (2 of 3 studies) and unnecessary medicines (5 of 7 studies), although adverse events were significantly improved in only a minority (1 of 9) of studies. Knowledge significantly improved with pharmacist-led review in the majority (6 of 11 of studies, while adherence (7 of 14 studies) and satisfaction (2 of 4 studies) improved in half of studies. Costs were significantly decreased in only the minority (4 of 14) of studies comparing pharmacist-led review with control. | | | |
| ***Effectiveness statements:***  There is some evidence from trials that pharmacist-led review reduces the number of medicines prescribed, medicines problems, storage problems and unnecessary medicines in older people — it is generally effective. There is some evidence from trials that pharmacist-led review improves adherence, satisfaction and knowledge — results are mixed. There is insufficient evidence from trials that pharmacist-led review improves hospital admissions, quality of life, adverse medicines reactions, or mortality — it is generally ineffective. | | | |

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| **Jacobson 2005** | | | |
| ***Patient reminder and recall systems to improve immunization rates***  **Maps to: Supporting behaviour change, Minimising risks or harms** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Patient reminder and recall systems versus usual care | Immunisation rate | 35 | ARI = 11 more people out of 100 (95% CI: 8 to 14 more) |
| Child influenza immunisations | 4 | ARI = 19 more people out of 100 (95% CI: 6 to 29 more) |
| Pre-school child routine immunisations | 15 | ARI = 9 more people out of 100 (95% CI: 6 to 12 more) |
| Adult influenza immunisations | 12 | ARI = 12 more people out of 100 (95% CI: 6 to 18 more) |
| Adult (other vaccines) | 3 | ARI = 18 more people out of 100 (95% CI: 4 to 33 more) |
| Adolescent immunisations | 1 | Non-significant increase |
| Costs | 16 | Not available |
| ***Summary of results:***  Typically, immunisation rates increased within the range of 5% to 20% with patient reminders/recall systems (42 studies, range 1% to 47%), although a small number (5 studies) reported decreased immunisation rates (range 2% to 9%). Immunisation rates significantly increased for routine childhood vaccinations, influenza vaccinations for children and adults, and adult pneumococcus, tetanus and Hepatitis B vaccinations. In the single study on adolescents, there was no significant effect of a reminder intervention on immunisation rates. Person-to-person telephone calls, letters, postcards, autodialer computer reminders, postcards plus telephone calls, and patient plus provider reminders all significantly increased immunisation rates. Person-to-person calls were the most effective single intervention, but patient and provider reminders delivered together was the most effective approach overall. Patient reminders with outreach non-significantly increased immunisation rates. Cost data were mixed due to different types of reminder used (eg with telephone reminders more expensive than either letter or postcard reminders), different intensities of interventions (eg ranging from single postcard reminders to repeat reminders plus home visits), and different methods of calculating costs and resources. | | | |
| ***Effectiveness statements:***  There is some evidence that patient reminder and recall systems improve immunisation rates in adults and children - they are generally effective. There is some evidence that person-to-person telephone calls are the most effective single intervention, and that patient and provider reminders delivered together are the most effective intervention overall. There is insufficient evidence to determine the cost effectiveness of interventions; the effects of interventions in low- and middle-income countries; and the effects of reminder and recall interventions in adolescents. | | | |

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| **Jegu 2011** | | | |
| ***Slow-release oral morphine for opioid maintenance treatment: a systematic review***  **Maps to: Minimising risks or harms** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Slow release oral morphine (SROM) vs usual care | Quality of life | 5 | 3 studies increase (significance unknown); 2 studies no changes |
| Adherence (program retention rate) | 6 | 1 study non-significant increase; 5 studies significance not reported but retention rates varied from 80.6 to 95% |
| Treatment preference | 3 | 1 study significantly more people preferred SROM to methadone; 2 studies increases (significance unknown), range 77.7 to 95% preferring SROM compared with methadone |
| Adverse events | 3 | 1 study significant reduction with SROM over time; 1 study significantly fewer events with SROM than methadone; 1 study increase with SROM than methadone (significance unknown) |
| ***Summary of results:***  SROM, compared to usual care, increased quality of life in a majority (3 of 5) of studies, although significance was unclear, and non-significantly increased retention rates in the minority (1 of 6) of studies. SROM, compared to usual care, was preferred over methadone in 3 studies (1 study statistically significant, significance unclear in the remaining) and led to significantly fewer adverse events in the majority (2 of 3) of studies. | | | |
| ***Effectiveness statements:***  There is insufficient evidence to determine if SROM is effective as an alternative opiod maintenance therapy. | | | |

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| **Koshman 2008** | | | |
| ***Pharmacist care of patients with heart failure***  **Maps to: Providing information or education, Supporting behaviour change, Minimising risks or harms, Improving quality** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Pharmacist-directed care vs control | Mortality | 7 | Non-significant reduction |
| All-cause hospitalisation | 7 | Non-significant reduction |
| Hospitalisation for heart failure | 6 | Non-significant reduction |
| Health-related quality of life | 6 | 1 study significant increase; 1 study mixed effects (non-significant and significant reductions with different measures); 4 studies non-significant changes |
| Adherence - Medication Events Monitoring (MEM) system | 6 | 1 study significant increase with MEMs; 1 study significant decrease with self report; 3 studies non-significant changes (pharmacy fill records; tablet counts); 1 study mixed effects (significant increase with MEMs, non-significant changes with self report) |
| Pharmacist collaborative care vs control | Mortality | 5 | Non-significant reduction |
| All-cause hospitalisation | 4 | ARR = 12 fewer people out of 100 (95% CI: 22 to 1 fewer) |
| Hospitalisation for heart failure | 5 | ARR = 15 fewer people out of 100 (95% CI: 22 to 6 fewer) |
| Health-related quality of life | 1 | Mixed effects (significant increase and non-significant changes with different measures) |
| Adherence | 1 | Non-significant changes all medicines |
| ***Summary of results:***  Pharmacist-directed care did not significantly decrease hospitalisation rates (all-case or heart failure-related) or mortality, improved health-related quality of life in only the minority (1 of 6) of studies, and had mixed effects on adherence when compared with control. Pharmacist collaborative care interventions significantly reduced hospitalisations, both for heart failure and due to any cause, when compared with control. However there were no significant changes to mortality or adherence and effects on health-related quality of life were mixed in a single study. | | | |
| ***Effectiveness statements:***  There is insufficient evidence from trials that pharmacist-directed care improves service use, clinical outcomes, quality of life or adherence in people with heart failure - it is generally ineffective. There is some evidence from trials that pharmacist collaborative care reduces hospital admissions for heart failure, and all-cause hospital admission - it is generally effective. There is insufficient evidence from trials that pharmacist collaborative care improves mortality - it is generally ineffective. There is insufficient evidence to determine the effects of pharmacist collaborative care on adherence or quality of life. | | | |

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| **Lewin 2010** | | | |
| ***Lay health workers in primary and community health care for maternal and child health and the management of infectious diseases***  **Maps to: Improving quality, Minimising risks or harms, Providing information or education, Supporting behaviour change** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Lay health worker (LHW) interventions vs usual care | Immunisation schedule up-to-date | 4 | ARI = 11 more people out of 100 (95% CI: 4 to 18 more) |
| LHW interventions vs other adherence support | Cure for smear-positive TB patients (new and retreatment) | 4 | ARI = 13 more people out of 100 (95% CI: 8 to 18 more) |
| New smear positives cured | 2 | 1 study significant increase; 1 study non-significant increase |
| Combined cure and treatment completion for all pulmonary TB patients | 3 | 1 study significant increase; 2 studies non-significant increases |
| Preventive therapy with isoniazid - completed therapy | 2 | 1 study non-significant increase; 1 study non-significant reduction |
| ***Summary of results:***  There was a significant increase in children with immunisation schedules up-to-date with LHW interventions, compared with usual care. There was a significant increase in cure for new and retreated smear-positive TB patients with LHW interventions, compared with other forms of adherence support. Smear-positive cure rates were improved in half (1 of 2) of studies, but combined cure and treatment completion improved in only the minority (1 of 3) studies of LHW interventions, while completion of preventive isoniazid therapy was non-significantly changed. | | | |
| ***Effectiveness statements:***  There is some evidence that LHW interventions improve immunisation uptake in children - they are generally effective. There is some evidence that LHW interventions improve cure rates for new and retreated smear-positive TB patients combined - they are generally effective. There is insufficient evidence that LHW interventions improve cure rates for new smear-positive TB patients alone or combined cure and treatment-completion groups – the results are mixed. There is insufficient evidence that LHW interventions improve completion of preventive therapy – they are generally ineffective. | | | |

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| **Liu 2008** | | | |
| ***Reminder systems and late patient tracers in the diagnosis and management of tuberculosis***  **Maps to: Minimising risks or harms, Providing information or education, Supporting behaviour change** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Late patient tracer (letter) vs no late patient tracers | Treatment non-completion | 1 | ARR = 15 fewer people out of 100 (95% CI: 21 to 5 fewer) |
| Late patient tracer (home visit plus health education) vs usual care | Treatment non-completion | 1 | ARR = 14 people fewer out of 100 (95% CI: 16 to 10 fewer) |
| Treatment interrupted for 2 consecutive months or more | 1 | ARR = 9 people fewer out of 100 (95% CI: 10 to 7 fewer) |
| Treatment failure | 1 | ARR = 4 people fewer out of 100 (95% CI: 5 to 0.12 fewer) |
| Death | 1 | Non-significant reduction |
| Sputum-smear positive at end of treatment | 1 | ARR = 18 people fewer out of 100 (95%CI: 21 to 13 fewer) |
| Late patient tracer (home visit) vs letter | Treatment non-completion | 1 | Non-significant reduction |
| Mean number of medicine collections for 1 year | 1 | Significant increase |
| ***Summary of results:***  All results were reproted by single studies. Late patient tracers (letter) had significantly fewer patients who did not complete treatment. With late patient tracer (home visit plus health education) interventions, significantly fewer patients did not complete treatment, had their treatment interrupted for 2 consecutive months or more, or had treatment fail, and mortality was non-significantly reduced when compared with usual care. Late patient tracer (home visit plus health education) interventions had significantly fewer patients with sputum-smear positive at end of treatment, compared with usual care. Late patient tracer (home visit) interventions had non-significant effects on numbers not completing treatment, but significantly increased mean numbers of medicine collections at 12 months when compared with letter-based late patient tracer interventions. | | | |
| ***Effectiveness statements:***  There is insufficient evidence from trials to determine the effects of late patient tracers on medicines use, treatment interruption or clinical outcomes. There is insufficient evidence to determine whether reminder systems are effective. | | | |

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| **Lummis 2006** | | | |
| ***Systematic review of the use of patients' own medications in acute care institutions***  **Maps to: Support, Minimising risks or harms, Improving quality** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Pharmacist assessing patients' own medicines (POM) (no control) | Number POMs reviewed | 1 | Significant increase with intervention |
| Medicines errors identified | 1 | Significant increase with intervention |
| POM vs hospital dispensed medicines | Medicines administration errors | 1 | Non-significant change |
| Pharmacist assessing POM (no control) | Patients with medicines errors | 1 | Significant increase with intervention |
| Medicines errors identified using POMS | 1 | Significant increase with intervention |
| Workload (pharmacist time) | 1 | 1 study increase with intervention (significance not reported) |
| Workload (dispensary staff) | 2 | 2 studies decrease with intervention (significance not reported) |
| Allergies recorded | 1 | 1 study increase with intervention (significance not reported) |
| Pharmacist assessing (POM) (no control two studies) | Cost of medicines | 3 | 1 study cost saved per patient on re-use of POMS at discharge $US11 (vs control); 1 study cost saved per patient $US9 with POMs; 1 study decreased costs with intervention (significance not reported) |
| Discharge time | 3 | 1 study significant decrease with intervention (vs control); 2 studies decrease with intervention (significance not reported) |
| ***Summary of results:***  Of the intervention studies included in this review only 1 of 5 was controlled and results should be interpreted with caution due to inclusion of studies of poor design for assessing intervention effectiveness. Single studies each reported that pharmacists assessing patients' own medicine (POM) use significantly increased identification of medicines errors, numbers of patients with medicines errors, and medicines errors identified amongst POMs. Allergy documentation in charts was also increased by pharmacists assessing POM use, but significance was unclear. One study assessing medicines administration errors did not find a difference between POMs use alone and hospital-dispensed medicines. One study indicated that interventions involving pharmacists assessing POMs increased workload (time requirements) for the pharmacist involved, and hospital dispensary staff workload was decreased in two studies, but significance of these results is unclear. Studies also show costs to hospitals and patients after discharge were reduced with pharmacists assessing POMs use (3 of 3 studies: significance unclear). Time taken for patient discharge was also decreased with pharmacists assessing POMs use, but was only significant in the minority (1 of 3) studies. | | | |
| ***Effectiveness statements:***  There is insufficient evidence to determine if pharmacists assessing POM use improves identification of medicines errors. There is insufficient evidence to determine if using POM alone improves medicines administration errors. | | | |

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| **Lutge 2012** | | | |
| ***Material incentives and enablers in the management of tuberculosis***  **Maps to: Minimising risks or harms, Supporting behaviour change** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Material (monetary) incentive vs usual care | Adherence (uptake or continuation of TB prophylaxis) | 3 | ARI = 14 more people out of 100 (95% CI: 7 to 24 more) |
| Adherence (completion of TB prophylaxis) | 3 | Non-significant increase |
| Material (food) incentive vs nutritional advice | Adherence (completion of TB treatment) | 1 | Non-significant reduction |
| Immediate incentive vs delayed incentive | Adherence (completion of TB prophylaxis) | 1 | Non-significant increase |
| Monetary incentive vs non-monetary incentive | Adherence (completion of TB prophylaxis) | 1 | ARI = 17 more people out of 100 (95% CI: 1 to 36 more) |
| Monetary incentive vs education/ counselling | Adherence (uptake or continuation of TB prophylaxis) | 2 | Non-significant increase |
| Adherence (completion of TB prophylaxis) | 3 | 1 study significant increase; 2 studies non-significant reduction |
| ***Summary of results:***  Material incentives, compared to usual care, significantly increased uptake or continuation of TB prophylaxis, non-significantly increased adherence to completion of TB prophylaxis, and in a single study, non-significantly reduced adherence to TB treatment completion. In single studies, monetary incentives, compared to non-monetary incentives, significantly increased adherence (completion) of TB prophylaxis; and immediate compared to delayed incentive payments non-significantly increased adherence (completion) of TB prophylaxis. Monetary incentives, compared to education/ counselling interventions, non-significantly increased uptake or continuation of TB prophylaxis (2 studies) but had mixed effects on adherence (completion) of TB prophylaxis, with only a minority (1 of 3) of studies showing a significant increase. | | | |
| ***Effectiveness statements:***  There is some evidence that material incentives, compared with usual care, improve adherence to TB prophylaxis adherence (uptake, continuation and/or completion) - the results were mixed.  There is insufficient evidence to determine which type of material incentive or other intervention to promote adherence is most effective to improve adherence to TB treatment or prophylaxis. | | | |

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| **Machado 2007a** | | | |
| ***Sensitivity of patient outcomes to pharmacist interventions. Part I: systematic review and meta-analysis in diabetes management***  **Maps to: Providing information or education, Supporting behaviour change** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Pharmacist interventions vs control | Change in HbA1C | 16 | Significant reduction |
| Fasting plasma glucose levels | 7 | 6 studies sensitive\* changes; 1 study unclear |
| Systolic blood pressure | 14 | 8 studies significant reduction; 6 studies non-significant changes |
| Total cholesterol levels | 10 | 4 studies significant reduction; 3 studies non-sensitive\* changes; 3 studies unclear |
| Adherence | 5 | Non-significant changes |
| Medicines knowledge | 5 | 2 studies significant increase, 2 studies non-significant changes, 1 study mixed |
| Quality of life | 4 | 1 study significant increase; 2 studies non-significant changes, 1 study unclear |
| ***Summary of results:***  Pharmacist interventions, compared to control, significantly decreased HbA1c levels, and in the majority of studies (6 of 7) decreased fasting plasma glucose levels and systolic blood pressure (8 of 14) in diabetic patients. Pharmacist interventions decreased total cholesterol levels (4 of 10) and increased medicines knowledge (2 of 5) and quality of life (1 of 4) in only a minority of studies. Pharmacist interventions did not significantly change adherence in any of the small number studies (5 of 5) that assessed this outcome, when compared to usual care. | | | |
| ***Effectiveness statements:***  There is some evidence that in diabetic patients, pharmacist interventions significantly decrease HbA1c and fasting plasma glucose levels, compared to usual care — they are generally effective. There is insufficient evidence that pharmacist interventions increase adherence to medicines in diabetic patients, compared to usual care — it is generally ineffective. There is some evidence that systolic blood pressure, total cholesterol levels, medicines knowledge and quality of life are improved by pharmacist interventions — the results were mixed. | | | |

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| **Machado 2007b** | | | |
| ***Sensitivity of patient outcomes to pharmacist interventions. Part II: systematic review and meta-analysis in hypertension management***  **Maps to: Providing information or education, Supporting behaviour change** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Pharmacist interventions vs control | Systolic blood pressure | 13 | Non-significant changes |
| Diastolic blood pressure | 13 | Non-significant changes |
| Adherence | 13 | 5 studies significant increases; 8 studies non-sensitive\* changes |
| Medicines and health knowledge | 1 | Increase, significance unknown for between-group comparison |
| Quality of life | 8 | 1 study significant increases; 7 studies non-sensitive\* changes |
| ***Summary of results:***  Pharmacist interventions, compared to control, significantly improved adherence (5 of 13 studies) and quality of life (1 of 8) in the minority of studies, and increased medicines and health knowledge in a single study, although significance of this result is unclear. Pharmacist interventions had non-significant effects on systolic and diastolic blood pressure when compared to control. | | | |
| ***Effectiveness statements:***  There is insufficient evidence that pharmacist interventions for patients with hypertension improve systolic or diastolic blood pressure when compared to control — they are generally ineffective. There is some evidence that pharmacist interventions improve adherence and quality of life — the results are mixed. There is insufficient evidence to determine the effects of pharmacist interventions on medicines and health knowledge. | | | |

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| **Machado 2008** | | | |
| ***Sensitivity of patient outcomes to pharmacist interventions. Part III: systematic review and meta-analysis in hyperlipidemia management***  **Maps to: Providing information or education, Supporting behaviour change** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Pharmacist interventions vs control | Total cholesterol levels (mg/dL) | 11 | Significant reduction, AMR = 22.0 (SD = 10.4) |
| Change in LDL-C levels | 9 | Non-significant reduction |
| Change in HDL-C levels | 7 | Non-significant reduction |
| Change in TG levels | 9 | Non-significant reduction |
| Adherence | 9 | 4 studies sensitive\* changes; 5 studies unclear |
| Quality of life | 2 | 1 study significant increase (no control); 1 study significant increase |
| \* 'sensitive' defined as more than 10% change and statistically significant | | | |
| ***Summary of results:***  Pharmacist interventions, compared to control, significantly reduced total cholesterol levels, but non-significantly reduced LDL-C, HDL-C and triglyceride levels in hyperlipidaemic patients. Pharmacist interventions significantly increased quality of life (2 of 2 studies but significantly improved adherence to treatment in only the minority (4 of 9) of studies, when compared with control. | | | |
| ***Effectiveness statements:***  There is some evidence that in hyperlipidaemic patients, pharmacist interventions significantly decrease total cholesterol levels compared to usual care — they are generally effective. There is some evidence that pharmacist interventions improve adherence and quality of life — the results are mixed. There is insufficient evidence that pharmacist interventions improve LDL-C, HDL-C or TG levels — they are generally ineffective. | | | |

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| **Maglione 2002** | | | |
| ***Mass mailings have little effect on utilization of influenza vaccine among Medicare beneficiaries:***  **Maps to: Providing information or education, Supporting behaviour change, Minimising risks or harms** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Mass mailings: personalised or form letter vs control | Immunisation uptake | 1 | Absolute increase = 2 to 8 more people out of 100 |
| Mass mailings: postcard or letter plus brochure/postcard vs control | Immunisation uptake | 4 | Absolute increase = 1 to 3 more people out of 100 |
| ***Summary of results:***  The majority of studies (3 of 5) examining mass mailings, compared with control, found significant increases in immunisation uptake. However, authors note that the significant results are not clinically significant. | | | |
| ***Effectiveness statements:***  There is some evidence that mass mailing interventions increases the uptake of influenza vaccination - results of mass mailings were mixed. | | | |

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| **Mahtani 2011** | | | |
| ***Reminder packaging for improving adherence to self-administered long-term medications***  **Maps to: Supporting behaviour change** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Reminder packaging vs usual care | Adherence – pill counts | 6 ints | AMI = 11 more pills out of 100 (no CI) |
| Adherence – self-report | 2 | Non-significant reduction |
| Patient satisfaction | 4 | 1 study reduction with intervention (more difficult/less convenient to use, significance unknown); 1 study significant increase with intervention (easier to use): ARI = 50 more people out of 100 (CI unknown); 1 study 76 people out of 100 found the intervention a very helpful reminder (not comparative; significance unknown); 1 study 46 people out of 100 found it easier or much easier to take tablets (not comparative; significance unknown) |
| Costs | 3 | 2 studies increase in prescription expenditure - of these two studies, 1 study had small increase in total savings, the other non-significant increase in total costs. 1 study had packaging costs of US$1.50 per week (not comparative, significance unknown). |
| Blood pressure (systolic 6 or 8 months) | 2 | Non-significant reduction (at both time points) |
| Blood pressure (diastolic 6 or 8 months) | 2 | AMR = 5.89 mmHg lower (95%CI: -6.70 to -5.09 lower) |
| Blood pressure (systolic 12 months) | 1 | No significant difference |
| Blood pressure (diastolic 12 months) | 1 | No significant difference |
| Serum vitamin levels | 1 | No significant difference |
| Psychological symptoms | 1 | No significant difference |
| Glycated haemolglobin | 2 | 1 study significant reduction: AMR = 0.75 lower HbA1c (95%CI: -0.86 to -0.64 lower), 1 study non-significant increase |
| ***Summary of results:***  The majority of studies (5 of 6 interventions) reported significantly improved adherence by pill counts, but non-significant results with self-report (2 studies) with reminder packaging compared to usual care. Reminder packaging significantly improved diastolic blood pressure (2 studies) at 6 or 8 months and glycated haemoglobin (1 of 2 studies) but the effect on blood pressure was not significant at 12 months compared to usual care. Other clinical outcomes such as systolic blood pressure (2 studies), vitamin C and E levels (1 study), and psychological symptoms (1 study) were unchanged with reminder packaging when compared to usual care. Reminder packing had mixed effects on cost: prescription expenditure increased (2 studies) however, total savings were also increased (1 of 2 studies) compared to usual care and in a third study the cost of the intervention was US1.50 per week (no comparative cost for control group reported). Reminder packaging was more difficult or less convenient to use (significance unknown) in one study but significantly more useful in another compared to usual care, two other studies also report satisfaction, with no results given for the control groups. | | | |
| ***Effectiveness statements:***  There is some evidence that reminder packaging improves medicines adherence — the results are mixed (when adherence by pill count was measured they are generally effective, however, when measured by self report, they are generally ineffective). There was insufficient evidence that reminder packaging improves clinical outcomes and patient satisfaction- the results are mixed. | | | |

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| **Maio 2005** | | | |
| ***Pharmacy utilisation and the Medicare Modernisation Act***  **Maps to: Improving quality** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Drug benefit cap | Cost containment; appropriate use; system benefits | 5 | 2 of 2 studies reduction in medicines use; 2 of 2 studies disenrolment from healthcare plan; 1 of 1 study reduces cost; 1 of 1 study increased nursing home admission |
| Copayment | Cost containment; appropriate use; system benefits; adverse events | 7 | 4 of 5 studies reduction in medicines use (1 study reduction with large copayment but not small copayment); 3 of 4 studies reduction in costs; 2 of 3 studies increased health services utilisation; 1 of 2 studies increased adverse events |
| Prior authorisation | Cost containment; system benefits | 1 | Reduced costs; system use no difference |
| Closed formulary | Appropriate use; cost containment; system benefits | 1 | Increased use, costs and system use |
| Therapeutic substitution | Cost containment; adverse events; health status | 2 | 2 of 2 studies no change health status or adverse events; 1 of 1 study reduced costs |
| Generic substitution | Cost containment; health status; adverse events | 2 | 2 of 2 studies no change health status; 1 of 1 study no change adverse events; 1 of 1 study reduced costs |
| ***Summary of results:***  A majority of the studies found Pharmacy Utilisation Management (PUM) strategies decrease prescription medicines use and medicines costs. This is with the exception of the closed formulary study (very weak study design) which found increases in use and costs. Increased healthcare utilisation was found in the majority of studies, but a minority found a reduction in health status and increase in adverse events. The majority of studies for drug caps showed reduced costs, but increased system use and reduction in health status; copayment studies showed mixed results; the 1 study of prior authorisation showed reduced costs with no change in system use; and formularies showed mixed results but the studies of substitutions showed a reduction in costs without effects to health status or system use. | | | |
| ***Effectiveness statements:***  There is some evidence that PUM reduces medicines costs and improves medicines use in seniors without reducing health status it is generally effective. But there is some evidence that it increases healthcare utilisation. Specifically, there is some evidence that drug caps reduce costs and use, but increases system use and reduces health status; some evidence that copayment reduces costs and use, but increases system use and reduces health status results are mixed; insufficient evidence to determine the effect of prior authorisation; and some evidence that formularies reduce costs and use with no effect on health status and system use results are mixed. | | | |

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| **Mbuba 2008** | | | |
| ***The epilepsy treatment gap in developing countries: a systematic review of the magnitude, causes, and intervention strategies***  **Maps to: Improving quality, Providing information or education** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Health care worker education vs usual care | Knowledge | 2 | 1 study increases, range 9 to 11% (significance unknown); 1 study increase (size and significance unknown) |
| Patient recruitment | 1 | Increase by 35% (significance unknown) |
| Patient education (information pamphlets) vs usual care | Patient default rate | 1 | AMR = 34 fewer people per 100 defaulted |
| Medicines adherence – blood AED levels, self report | 2 | Non-significant changes |
| Seizure frequency | 1 | Non-significant changes |
| Knowledge | 1 | Significant increase by 30% |
| Medicines side effects | 1 | Significant reduction |
| Patient education vs usual care | Knowledge | 1 | Significant increase |
| Depression | 1 | Significant reduction |
| Neurotic disorders | 1 | Significant reduction |
| ***Summary of results:***  Health care worker education, compared to usual care, may increase health care worker knowledge (2 studies, 1 significance unknown) and patient recruitment (1 study), although significance was unclear. Patient education (information pamphlets), compared to usual care, significantly improved patient default rates, knowledge, and side effects (1 study); but not seizure frequency (1 study), or medicines adherence (2 studies). Patient education, compared to usual care, significantly improved knowledge, depression and neurotic disorders (1 study). Additionally, two studies without control groups assessed anti-epilepsy drug (AED) provision, alone or in combination with nurse education. The provision of AEDs may reduce seizure frequency, and improve adherence, dropout, and response to therapy, as well as awareness; while providing nurse education may increase AED supply. However results need to be interpreted carefully given the lack of control group. | | | |
| ***Effectiveness statements:***  There is insufficient evidence to determine the effects of health care worker or patient epilepsy education, or provision of AEDs on adherence, knowledge, side effects, or clinical outcomes. | | | |

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| **McIntosh 2006** | | | |
| ***Compliance therapy for schizophrenia:***  **Maps to: Facilitating communication and/or decision making, Supporting behaviour change, Support** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Compliance therapy vs non-specific counselling | Adherence | 1 | Non-significant reduction |
| Attitudes to medicines | 1 | Non-significant reduction |
| Mental health status | 1 | Non-significant change |
| Quality of life | 1 | Non-significant reduction |
| ***Summary of results:***  There were no significant differences in adherence to antipsychotic treatment, attitudes to medicines, quality of life or mental health status when compliance therapy and non-specific counselling were compared. There were also no significant differences for compliance therapy for clinical or service use (hospital admission) outcomes. | | | |
| ***Effectiveness statements:***  There is insufficient evidence to determine whether compliance therapy improves adherence, attitudes to antipsychotic medicines, clinical outcomes or quality of life in people with schizophrenia. | | | |

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| **Misso 2010** | | | |
| ***Continuous subcutaneous insulin infusion (CSII) versus multiple insulin injections for type 1 diabetes mellitus***  **Maps to: Supporting behaviour change, Minimising risks or harms** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| CSII (continuous subcutaneous insulin infusion) vs MI (multiple insulin injections) | Mortality | 22 | 21 studies no deaths reported; 1 study reported 1 death in the CSII group |
| Serious adverse events | 14 | 13 studies reported none; 1 study fewer with CSII (significance unknown) |
| Ketoacidosis | 2 | Non-significant changes |
| Drop outs due to adverse events | 17 | 14 studies reported no events; 3 studies each reported single events but it was not clear which group these belonged to. |
| Severe hypoglycaemic events | 15 | 9 studies reductions (significance unknown); 4 studies increases (significance unknown); 2 studies non-significant changes |
| Nocturnal hypogylcemic episodes | 9 | 1 studies increase (significance unknown); 1 study reduction (significance unknown); 7 studies no events. |
| Non-severe hypoglycaemic events | 17 | 6 studies increases (significance unknown); 6 studies reductions (significance unknown); 3 studies non-significant changes; 2 studies unclear |
| Injection/infusion site injury/reaction | 2 | 1 study increase (significance unknown); 1 study unclear |
| HbA1c | 20 | Significant reduction, MR = -0.25 lower (95% CI: -0.40 to -0.10 lower) |
| Daily mean blood glucose | 13 | 6 studies significant reductions with CSII; 7 studies non-significant reductions |
| Fasting blood glucose | 11 | 4 studies significant reductions; 6 studies non-significant reductions; 1 study non-significant increase |
| Post prandial blood glucose | 5 | Non-significant reduction |
| Daily insulin requirements (Units) | 9 | Significant reduction, MR = -7 lower (95% CI: -11 to -3 lower) |
| Daily insulin requirements (Units/ kg) | 13 | 6 studies significant reductions; 4 studies non-significant reductions; 2 studies non-significant increases; 1 study no change. |
| Quality of life | 15 | None reported clinically meaningful minimal differences. |
| ***Summary of results:***  CSII, compared to MI, significantly reduced HbA1c levels but had mixed effects on daily insulin requirements, with both decreases and mixed effects reported. In a minority of studies CSII significantly decreased daily mean blood glucose (6 of 13 studies) and fasting blood glucose (4 of 11 studies), compared with MI, but had non-significant effects on post-prandial blood glucose levels. Of the 22 studies that measured mortality, one event was reported in the CSII group; and no clinically meaningful minimal differences in quality of life were reported in any study. CSII, compared to MI, reduced severe hypoglycaemic events in the majority (9 of 15) of studies, although was unclear; had mixed effects on both non-severe and nocturnal hypoglycaemic events, rates of injection or infusion site injury or reaction; and non-significantly altered ketoacidosis rates. Serious adverse events were measured in 14 studies, with 1 study recording fewer with CSII (significance unclear). There were no dropouts due to adverse events in the majority (14 of 17) of studies, while in 3 studies there were single events, but it was unclear to which group these belonged. | | | |
| ***Effectiveness statements:***  There is sufficient evidence that CSII interventions improve HbA1c levels, compared with MI – it is generally effective. There is some evidence that CSII improves daily insulin requirements – the results are mixed. There is insufficient evidence that CSII improves daily mean blood glucose, fasting blood glucose, post-prandial blood glucose levels or quality of life – it is generally ineffective. There is some evidence that CSII improves severe hypoglycaemic events – results are mixed; but insufficient evidence that it improves non-severe hypoglycaemic events – it is generally ineffective. There is insufficient evidence to determine the effects of CSII on rates of ketoacidosis or injection site reaction. There is some evidence that mortality, adverse events and nocturnal hypoglycaemia rates are rare and are not different between CSII and MI approaches. | | | |

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| **Molife 2009** | | | |
| ***Assessment of patient-reported outcomes of insulin pen devices versus conventional vial and syringe***  **Maps to: Supporting behaviour change** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Insulin pen device vs vial and syringe | Pain | 9 | 8 studies reduction (significance unknown); 1 study non-significant changes |
| Ease of use | 10 | 10 studies increase (significance unknown) |
| Convenience and handling/dosing | 12 | 10 studies increase (significance unknown); 2 studies non-significant changes |
| Preference | 29 | 28 studies increase (significance unknown); 1 study non-significant changes |
| Acceptability | 12 | 10 studies increase (significance unknown); 2 studies non-significant changes |
| Flexibility | 3 | 2 studies increase (significance unknown); 1 study non-significant changes |
| Treatment satisfaction | 8 | 6 studies increase (significance unknown); 2 studies non-significant changes |
| Quality of life | 5 | 2 studies increase (significance unknown); 3 studies non-significant changes |
| ***Summary of results:***  Insulin pen devices increased ease of use and in the majority of studies, pain (8 of 9; significance unclear), convenience and handling or dosing (10 of 12; significance unclear), preference (28 of 29; significance unclear), acceptability (10 of 12; significance unclear), flexibility (2 of 3; significance unclear), and treatment satisfaction (6 of 8; significance unclear). However, quality of life improved in only the minority (2 of 5) of studies compared to vial and syringe. | | | |
| ***Effectiveness statements:***  There is some evidence insulin pen devices improve ease of use, pain, convenience, handling or dosing, preference, acceptability, flexibility and treatment satisfaction compared to vial syringes - they are generally effective. There is insufficient evidence insulin pen devices improve quality of life - they are generally ineffective. | | | |

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| **Mollon 2009** | | | |
| ***Features predicting the success of computerized decision support for prescribing: a systematic review of randomized controlled trials***  **Maps to: Supporting behaviour change, Minimising risks or harms** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Prescribing computerised decision support system (CDSS) vs control | System implementation | 40 | 36 studies increase (significance unknown); 4 studies no changes |
| Health care provider behaviour change | 40 | 25 studies changed (significance unknown); 15 studies no changes |
| Patient-related outcomes | 22 | 5 studies improved (significance unknown); 17 studies no changes |
| Appropriate care | 42 ints in 36 studies | Vote counting 23/42 RCT comparisons favoured intervention: mixed effects.  Prescribing related outcomes: Choice: Vote counting 11/19 RCTs favoured intervention: mixed effects.  Appropriate use - other: Vote counting 8/15 RCTs favoured intervention: mixed effects.  Cost containment: Vote counting 2/3 RCTs favoured intervention: generally effective.  Drug safety: Vote counting 1/1 RCT favoured intervention: insufficient evidence. |
| ***Summary of results:***  In the majority of studies, prescribing CDSS were successfully implemented (36 of 40 studies) and health care provider behaviour changed in the majority of studies (25 of 40) compared with control; however, patient-related outcomes improved in only the minority (5 of 22) of studies. The significance of all results was unclear. | | | |
| ***Effectiveness statements:***  There is some evidence that prescribing CDSS interventions can be successfully implemented — they are generally effective. There is some evidence that prescribing CDSS interventions change healthcare provider behaviour — the results are mixed. There is insufficient evidence that prescribing CDSS interventions improve patient-related outcomes — they are generally ineffective. | | | |

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| **Morrison 2001** | | | |
| ***Evaluation of studies investigating the effectiveness of pharmacists' clinical services***  **Maps to: Providing information or education, Supporting behaviour change, Acquiring skills and competencies** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Pharmacist provided patient counselling vs usual care | Adherence | 6 | 4 studies significant increase; 2 increase significance unknown |
| Medicines errors | 1 | Significant increase |
| Knowledge | 5 | Increase favouring intervention: 2 studies non-significant; 3 significance unknown |
| Correct use of inhaler | 2 | Increase favouring intervention: 1 study non-significant, 1 study significance unknown |
| Clinical measure (blood sugar) | 1 | Reduction (significance unclear) |
| Pharmacist provided patient and physician counselling vs usual care | Adherence | 4 | 2 studies significant increase;  2 studies non-significant increase |
| Clinical measures (blood cholesterol (BC), blood pressure (BP), chronic obstructive pulmonary disease symptoms) | 4 | 2 studies significant increase (BP and BC); 2 studies increase favouring interventions significance unknown (BP and symptoms) |
| Adverse experiences | 1 | Significant reduction |
| Pharmacist provided physician counselling vs usual care | Clinical outcomes | 2 | 1 study significant increase; 1 study significant reduction |
| Drug monitoring (time for pyrexia to abate) | 1 | Non-significant changes |
| Proportion of prescriptions meeting guidelines | 1 | Significant increase OR = 2.9 (95% CI: 2.2 to 3.8) |
| Mean number of prescriptions | 2 | 2 studies non-significant changes |
| Cost per prescription | 1 | Non-significant changes |
| Pharmacist provided patient care vs usual care | Clinical measures (symptoms, blood pressure, blood sugar) | 4 ints | 3 ints non-significant changes; 1 int significantly favours intervention |
| Adherence | 1 | Non-significant increase |
| ***Summary of results:***  Pharmacist provided patient counselling significantly increased identification of medicines errors in a single study, and significantly improved adherence in the majority of studies (4 of 6), when compared to usual care. Pharmacist provided patient counselling also improved knowledge, correct use of inhaler and blood sugar levels but significance of these results was unclear. In half of studies, counselling of both patients and physicians by pharmacists significantly improved adherence (2 of 4) and clinical outcomes (2 of 4), and significantly decreased adverse experiences in a single study, when compared to usual care. Pharmacist counselling of physicians significantly increased the proportion of prescriptions meeting guidelines (1 study) and significantly improved clinical outcomes in half (1 of 2) of studies, but had no significant effects on cost per prescription, mean number of prescriptions, or drug monitoring, compared to usual care. Pharmacist provided patient care interventions did not significantly improve adherence (1 study) and improved clinical measures significantly in only the minority (1 of 4) of studies, compared with usual care. | | | |
| ***Effectiveness statements:***  There is some evidence that pharmacist provided patient counselling improves identification of medicines errors and adherence - it is generally effective. There is insufficient evidence that pharmacist provided patient counselling improves knowledge, correct inhaler use or clinical measures - it is generally ineffective. There is some evidence that pharmacist provided patient and physician counselling improves adherence, clinical outcomes and adverse experiences - the results are mixed. There is some evidence that pharmacist provided physician counselling interventions increases the proportion of prescriptions meeting guidelines - it is generally effective. There is insufficient evidence to decide the effects of pharmacist provided physician counselling on prescription costs, mean number of prescriptions, drug monitoring or clinical outcomes. There is insufficient evidence that pharmacist provided patient care interventions improve adherence or clinical measures - it is generally ineffective. | | | |

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| **Nicolson 2009** | | | |
| ***Written information about individual medicines for consumers***  **Maps to: Providing information or education, Supporting behaviour change** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Written medicines information (WMI) vs none | Knowledge | 12 | 6 studies significant increase; 4 studies non-significant changes; 2 studies mixed effects (increase and no changes) |
| Medicines recall | 4 | 1 study significant increase; 3 studies mixed effects (increases and no changes) |
| Recall of side effects | 6 ints | 3 interventions significant increase; 1 intervention mixed effects (significance unclear); 1 intervention non-significant changes; 1 intervention no changes (significance unclear) |
| Satisfaction with information | 2 | 2 studies significant increase |
| Ratings of information | 1 | Significant increases in ratings of ease of understanding, usefulness, clarity and adequacy of information provided; significantly fewer felt information could be improved; significant decrease in worry about medicines AMR = 28 fewer people out of 100 (no CI); |
| Adherence - adherence to medicines instructions | 6 | 2 studies significant increase; 3 studies non-significant changes; 1 study increase (significance unclear) |
| Number reporting health problems | 1 | Increase (significance unclear) |
| Number reporting side effects | 1 | Significant increase |
| Correct application of medicines information | 1 | Non-significant change |
| One WMI versus another: programmed instruction versus standard handout | Knowledge | 1 | Significant increase with programmed instruction |
| One WMI vs another: experimental leaflet versus manufacturer's leaflet | Knowledge | 1 | Increase with experimental leaflet (significance unclear) |
| Ratings of information | 1 | Significant increase with experimental leaflet in ease of understanding, completeness and containing new information; non-significant changes in ease of reading or interest of content |
| One WMI vs another: structured format versus easy-to-read format | Knowledge | 1 | Non-significant changes |
| Correct application of medicines information | 1 | Non-significant changes |
| One WMI vs another: numerical side effect risk versus descriptive side effect risk | Knowledge | 1 | Significant increase with numerical information for correct risk estimation |
| Satisfaction with information | 1 | Significant increase with numerical information for 1 of 2 side effects (pancreatitis); non-significant change for other side effect (constipation) |
| One WMI vs another: evidence-based leaflet versus standard leaflet | Knowledge | 1 | Non-significant increase with evidence-based leaflet |
| One WMI vs another: risk information before benefits versus risk information after benefits | Decision to take medicines | 1 | Significantly more favourable rating of treatment with risk information presented before benefits |
| One WMI vs another: usual wording versus simplified wording or professional wording formats | Ratings of information | 1 | Significant increase with usual wording format in length and complexity; non-significant changes in emotional response to information or evaluation of information; effects on judgement about information unclear |
| One WMI vs another: improved readability layout versus traditional insert | Reading of the information | 1 | Non-significant changes |
| ***Summary of results:***  Written Medicines Information (WMI) versus none: In half of studies, WMI significantly improved knowledge of medicines (6 of 12) and recall of side effects (3 of 6 interventions), but medicines recall significantly improved in only a minority of studies (1 of 4 studies). Two studies showed significantly improved satisfaction with WMI compared with none, and single studies each showed significant increases in numbers reporting side effects; ratings of the information clarity, adequacy and usefulness, and decreased worry about medicines with WMI. However, WMI significantly improved adherence to medicines and instructions in only a minority of studies (2 of 6), and did not improve application of medicines information in the single study reporting this outcome.  One WMI versus another: All comparisons were assessed in single studies. Numerical compared with descriptive side effect risk information significantly increased correct risk estimates, but had mixed effects on decision to take medicines and satisfaction with information. WMI with medicines risk information presented before benefits showed significantly more favourable ratings of treatment than when risk information was presented after benefits. WMI with programmed instruction significantly improved knowledge, when compared with a standard handout, whereas an evidence-based leaflet did not. A structured WMI, compared with an easy to read format, had no significant effects on knowledge or correct application of information; and usual wording versus simplified or professional wording had mixed effects on ratings of the information. An experimental leaflet compared with the manufacturer’s increased knowledge but significance was unclear, and significantly improved ratings of information on some but not all features (ease of understanding, completeness); while reading of medicines information was not significantly higher with an improved readability WMI over a traditional insert. | | | |
| ***Effectiveness statements:***  There is some evidence that using WMI, compared with none, may improve knowledge, recall of side effects and satisfaction with information - results were mixed. There is insufficient evidence to determine whether WMI, compared to none, improves outcomes related to medicines behaviours or attitudes. There is also insufficient evidence to decide whether one type of WMI is better than another with respect to medicines knowledge, attitudes or behaviours. | | | |

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| **Nishtala 2008** | | | |
| ***Psychotropic prescribing in long-term care facilities: impact of medication reviews and educational interventions***  **Maps to: Supporting behaviour change, Minimising risks or harms** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Medicines review vs usual care | Psycholeptic use | 1 | Non-significant reduction |
| Benzodiazepine use | 1 | Non-significant reduction |
| Ceased antipsychotic drugs | 1 | Significant increase; 19 more people out of 100 |
| Ceased non-recommended hypnotics (12 months) | 1 | Significant increase; 37 more people out of 100 |
| Ceased non-recommended hypnotics (36 months) | 1 | Reduction; 5 fewer people out of 100 (significance unknown) |
| Heath care worker education vs usual care | Psychoactive drug score | 1 | Significant reduction; 19 fewer people out of 100 |
| Mental state/ memory deterioration | 1 | Non-significant reduction |
| Depressive symptoms | 1 | Significant increase, RR = 2.0 (95% CI: 1.1 to 4.2) |
| Psychotropic drug use (psycholeptics, benzodiazepines or hypnotics) | 4 | 2 studies non-significant changes; 2 studies significant reductions by 19 to 20 fewer people out of 100 |
| As-required' antipsychotic drug use | 1 | Significant increase, RR = 4.95 (95% CI: 1.69 to 14.50) |
| Fall rate | 2 | Non-significant changes |
| More than one hypnotic drug | 1 | Significant reduction, 6 fewer people out of 100 |
| Hypnotics before 9pm | 1 | Significant reduction, 50 fewer people out of 100 |
| Agitation or physical restraint | 2 | 1 study non-significant changes; 1 study significant reduction |
| Days of psychotropic drug use | 2 | Significant reduction, 23 to 59 fewer people out of 100 |
| ***Summary of results:***  Medicines review interventions non-significantly decreased psycholeptic and benzodiazepine use, compared to usual care (1 study), and significantly increased the cessation of antipsychotic drugs and non-recommended hypnotics at 12 months (1 study), and at 36 months, although significance was not reported. Heath care worker education, compared to usual care, significantly decreased days of psychotropic drug use (2 studies), use of more than on hypnotic drug (1 study), psychoactive drug score (1 study), administration of hypnotics before 9 pm (1 study), and in half of studies, psychotropic drug use (2 out of 4 studies) and patient agitation or physical restraint (1 of 2 studies). Health care worker education, compared to usual care, also significantly increased both depressive symptoms (1 study) and as-required antipsychotic drug use (1 study), but had non-significant effects on mental state or memory deterioration (1 study), and falls (2 studies). | | | |
| ***Effectiveness statements:***  There is some evidence that heath care worker education may decrease psychotropic drug use, days of psychotropic drug use, and agitation — results are mixed. There is insufficient evidence to determine the effects of health care worker education on other medicines use or clinical outcomes, or to determine the effect of medicines review interventions. | | | |

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| **Nkansah 2010** | | | |
| ***Effect of outpatient pharmacists' non-dispensing roles on patient outcomes and prescribing patterns***  **Maps to: Improving quality, Providing information or education, Supporting behaviour change** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Pharmacist services targeted at patients vs services delivered by other professional (physician) | Systolic blood pressure | 1 | Significant increase, AMI = 4 mmHg higher (no CI) |
| Diastolic blood pressure | 1 | Non-significant changes |
| Fasting blood glucose | 1 | Non-significant reduction |
| Pharmacist services targeted at patients vs usual care | Therapeutic duplication | 1 | Significant reduction, MR = 47.3% (95% CI: 20.2 to 74.5%) |
| Doses of medicines prescribed per day | 1 | Significant reduction by 2.15 doses (no CI) |
| Medicines use | 1 | Non-significant changes in use overall, use of psychotropics or use of NSAIDs; but significant increase in use of cardiovascular medicines by 37% |
| Total number of medicines prescribed | 3 | 3 studies significant reductions, range = 1 to 2.1 medicines fewer |
| Number of inappropriate prescriptions (MAI - all domains) | 1 | Reduction by 650 (significance unknown) |
| Appropriate testing and prescribing (hyperlipediemia, statin prescribing) | 1 | Significant increase, OR = 3.0 (95% CI: 2.2 to 4.1) |
| Proportion of patients within therapeutic range | 2 | 1 study significant increase by 29% (no CI); 1 study significant increase |
| Adverse medicines reactions | 1 | Non-significant increase |
| Mortality | 2 | 1 study significant reduction, OR = 0.22 (95% CI: 0.06 to 0.63); 1 study non-significant reduction |
| BP control achieved (%) | 3 | 2 studies significant increases, range 17 to 83%; 1 study non-significant increase |
| Systolic blood pressure | 7 | 4 studies significant reductions, range = 5 to 11 mmHg lower; 1 study reduction 13 mmHg (significance unclear); 2 studies non-significant reductions |
| Diastolic blood pressure | 7 | 6 studies significant reductions, range = 2 to 7 mmHg lower; 1 study non-significant reduction |
| HbA1c (%) | 5 | 3 studies significant reductions, range = 0.5 to 2.1% lower; 2 studies non-significant changes |
| Blood glucose levels (mg/dL) | 3 | 2 studies significant reductions, range = 7 to 15 mg/dL lower; 1 study non-significant changes |
| Total cholesterol (mg/dL) | 3 | 1 study significant reduction in women but non-significant reduction in men; 1 study reduction of 26 mg/dL (significance unknown); 1 study non-significant reduction |
| Proportion with decreased triglyceride levels (%) | 1 | Increase of 49.5% (significance unknown) |
| Asthma symptom score | 1 | AMR = 7 points lower (95% CI: 4.40 to 9.50 points lower) |
| Lung function (FEV1 and FEC) | 1 | Non-significant changes |
| Total bleeding (% patients) | 1 | Significant reduction, 21% lower with intervention |
| COPD clinical outcomes | 2 | Non-significant changes |
| Depressive symptoms | 4 | Non-significant changes |
| Quality of life | 9 | 3 studies significant improvements; 6 studies non-significant changes |
| Pharmacist services targeted at professionals vs usual care | Number of medicines prescribed per month | 1 | Non-significant increase for men; significant increase for women AMI = 10.9 more (no CI) |
| Number of patients treated according to practice guidelines | 1 | Significant increase OR = 1.24 (95% CI: 1.07 to 1.42) |
| Changes in medicines use | 2 | Non-significant changes |
| Number of antibiotics prescribed | 1 | Non-significant changes |
| Total number of medicines prescribed | 2 | Non-significant changes |
| ***Summary of results:***  Pharmacist services targeted at patients, compared to usual care, significantly reduced the total number of medicines prescribed (3 studies) and in single studies decreased doses of medicines prescribed per day, therapeutic duplication and number of inappropriate prescriptions, although significance of this last result was unclear. Adverse medicines reactions were non-significantly changed (1 study), while effects on medicines use were mixed and dependent on medicines class. In the majority of studies, pharmacist services targeting patients increased the percentage of people achieving blood pressure control (2 of 3 studies) and decreased systolic (4 of 7 studies) and diastolic (6 of 7 studies) blood pressure, HbA1c (3 of 5 studies) and blood glucose levels (2 of 3 studies), compared with usual care. Mortality was reduced in half (1 of 2) of studies and quality of life significantly increased in the minority (3 of 9) of studies that compared pharmacist services to patients and usual care. Pharmacist interventions to patients increased the proportion of patients within therapeutic range (2 studies) and decreased total bleeding (1 study); while appropriate testing and prescribing of statins was significantly increased (1 study) and triglyceride levels decreased in more people (1 study, significance unknown), but effects on total cholesterol levels were mixed, compared with usual care. Asthma symptoms were significantly decreased by pharmacist interventions to patients in a single study, but there were no significant effects on COPD symptoms (2 studies) or lung function measures, or on depressive symptoms (4 studies), compared with usual care. Pharmacist services targeted at professionals, compared to usual care, significantly increased the number of patients treated according to practice guidelines (1 study) and the number of medicines prescribed per month for women but not men (1 study); but had non-significant effects on medicines use or number of medicines or antibiotics prescribed. | | | |
| ***Effectiveness statements:***  There is insufficient evidence to decide between services targeting patients delivered by pharmacists or delivered by other health professionals in terms of effects on medicines use or clinical outcomes. There is some evidence that pharmacist services targeting patients, compared to usual care, reduces total number of medicines prescribed - they are generally effective. There is insufficient evidence to determine the effects of pharmacist services targeting patients, compared to usual care, on other medicines use outcomes (doses prescribed, therapeutic duplication, inappropriate prescriptions, adverse reactions, medicines use). There is some evidence that pharmacist services targeting patients, compared with usual care, improve mortality or clinical outcomes - the results were mixed. There is insufficient evidence that pharmacist services targeting patients, compared with usual care, improves quality of life - they are generally ineffective. There is insufficient evidence to determine the effects of pharmacist services targeted at professionals on medicines use or clinical outcomes. | | | |

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| **Odegard 2007** | | | |
| ***Medication taking and diabetes: a systematic review of the literature***  **Maps to: Improving quality, Providing information or education, Support, Supporting behaviour change** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Tailored education or pharmacist medicines review vs control | Adherence | 2 | Non-significant changes |
| Barriers to adherence | 2 | Non-significant changes |
| Reminder vs control | Adherence | 1 int | Significant increase |
| Packaging vs control | Adherence | 1 int | Significant increase |
| Reminder plus unit-dose packaging vs control | Adherence | 1 int | Significant increase |
| Health service use | 1 int | Significant reduction |
| Cue-dose training vs control | Adherence | 1 | Non-significant changes |
| HbA1c | 1 | Non-significant changes |
| Counselling or weekly follow-up vs control | Adherence | 3 | Non-significant changes |
| Blood glucose testing | 1 | Significant increase |
| Hospital admission | 1 | Significant reduction |
| ***Summary of results:***  Tailored education or pharmacist medicines review interventions did not significantly change adherence or barriers to adherence when compared to control (2 studies). Reminders (1 int), unit-dose packaging (1 int) and reminders plus unit-dose packaging (1 int) interventions each significantly improved adherence when compared to control; and reminders plus unit-dose packaging also significantly decreased health care service use (1 int). Cue-dose training interventions did not significantly change adherence or HbA1c levels when compared to control (1 study). Counselling or weekly follow-up interventions significantly increased blood glucose testing (1 study), and significantly decreased hospital admissions (1 study) but did not significantly change adherence (3 studies), when compared to control. | | | |
| ***Effectiveness statements:***  There is insufficient evidence to determine the effects of interventions to improve adherence in type 1 and 2 diabetes mellitus (tailored education, medicines review, reminders, unit-dose packaging, cue-dose training, counselling and follow-up) on adherence and other outcomes. | | | |

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| **Olthoff 2005** | | | |
| ***Noncompliance with ocular hypotensive treatment in patients with glaucoma or ocular hypertension: an evidence-based review***  **Maps to: Providing information or education, Supporting behaviour change** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Medicines alarm device vs no intervention | Adherence (bottle weight) | 1 | Significant increase |
| Compliance aid (medicines alarm or memory aid) vs no intervention | Adherence (self-report) | 2 | Significant increase, AMI = 13% to 26% more pills taken with intervention |
| Intraocular pressure | 1 | Non-significant change |
| Counselling and memory aid vs medicines counselling only | Mean number of prescription refills | 1 | Significant increase with combined intervention |
| Education and tailoring of medicines routine vs no intervention | Adherence - proportion of time elapsed between doses > 8 hours | 1 | Significant reduction |
| Adherence - proportion of missed doses | 1 | Significant reduction |
| ***Summary of results:***  All studies reported significant increases in adherence to treatment with interventions (compliance devices, counselling with memory aids, or education and tailoring of medicines), whether assessed by self-report, pill counts or prescription refills. One study reported no significant effects of a memory aid intervention on intraocular pressure, despite an increase in medicines adherence. | | | |
| ***Effectiveness statements:***  There is some evidence that compliance aids (memory aids and alarms), counselling and memory aids, and education and tailoring can each improve treatment adherence in people with glaucoma - they are generally effective. There is insufficient evidence to determine whether interventions improve clinical outcomes such as intraocular pressure. | | | |

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| **Orton 2005** | | | |
| ***Unit-dose packaged drugs for treating malaria***  **Maps to: Supporting behaviour change** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Unit-dose packaged drugs vs usual care | Adherence | 4 | 2 studies (blister packaging) ARI = 15 more people out of 100 (95% CI: 10 to 21 more); 1 study (bags versus syrup) ARI = 49 more people out of 100 (95% CI: 32 to 68 more); 1 study increase (significance unknown) |
| Adverse events | 2 | Reported vomiting, itching, dizziness, other |
| Cure rates after drug regimen | 4 | 2 studies all aparasitaemic and asymptomatic; 1 study most fully recovered; 1 study most improved |
| ***Summary of results:***  All studies showed improved adherence with unit-dose packaging when combined with provider training and patient information; 3 studies were significant, 1 of unknown significance. Treatment failure was not adequately assessed in the studies; nor were adverse events systematically collected and reported. | | | |
| ***Effectiveness statements:***  There is insufficient evidence to determine if unit-dose packaging of medicines can improve adherence to medicines, treatment outcomes and adverse events for uncomplicated malaria, when supported by provider training and patient information. | | | |

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| **Oyo-Ita 2011** | | | |
| ***Interventions for improving coverage of child immunization in low- and middle-income countries***  **Maps to: Providing information or education, Supporting behaviour change, Improving quality, Minimising risks or harms** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Health education (information campaign) vs routine immunisation | Uptake of at least one dose of vaccine | 1 | Significant increase, ARI = 4 more out of 100 (95% CI: 0.1 to 10 more) |
| Health education (facility based) vs routine immunisation | DPT3 uptake | 1 | Significant increase, RR = 1.18 (95% CI: 1.05 to 1.33) |
| Health education (facility based plus redesigned immunisation card) vs routine immunisation | DPT3 uptake | 1 | Significant increase, ARI = 20 more people out of 100 (95% CI: 12 to 28 more) |
| Health education (evidence-based discussion in community groups) vs routine immunisation | DPT3 uptake | 1 | Significant increase, RR = 2.17 (95% CI: 1.43 to 3.29) |
| Measles uptake | 1 | Significant increase, RR = 1.63 (95% CI: 1.03 to 2.58) |
| Health education (evidence-based discussion in community groups) vs routine immunisation | Cost | 1 | 9 US$ per child |
| Financial incentive vs routine immunisation | Measles uptake | 1 | Non-significant increase |
| DPT1 update | 1 | Non-significant increase |
| Provider-oriented interventions (training) vs routine immunisation | Immunisation coverage | 1 | Significantly higher with intervention |
| Health system intervention (home visit) vs routine immunisation | OPV3 coverage | 1 | Significant increase, RR = 1.22 (95% CI: 1.05 to 1.42) |
| Measles coverage | 1 | Significant increase, RR = 1.26 (95% CI:1.08 to 1.46) |
| Health system intervention (provision of equipment, drugs and materials) plus provider training vs routine immunisation | MMR or DPT1 coverage | 1 | Non-significant increase |
| Financial incentive plus health system (provision of equipment, drugs and materials) plus provider training intervention vs routine immunisation | MMR or DPT1 coverage | 1 | Non-significant increase |
| ***Summary of results:***  In a single study information campaigns significantly increased uptake of at least one dose of vaccine compared to routine immunisation. In single studies, facility based education alone or in combination with redesigned immunisation cards significantly increased DPT3 uptake compared to routine immunisation, as did evidence-based discussion with community groups. Such evidence-based discussion also significantly improved measles immunisation uptake compared to routine immunisation and cost 9 US$ per child. Monetary incentive interventions non-significantly increased measles and DPT1 uptake compared to routine immunisation. Provider oriented training interventions increased immunisation coverage (significance unknown) compared to routine immunisation. Home visits significantly increased measles and OPV3 coverage compared to routine immunisation. In single studies health system interventions such as provision of equipment, drugs and materials plus either provider training or patient monetary incentives non-significantly increased MMR or DPT1 coverage compared to routine immunisation. | | | |
| ***Effectiveness statements:***  There is insufficient evidence to determine whether interventions to improve coverage of child immunisation in low- and middle-income countries are effective. | | | |

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| **Pankowska 2009** | | | |
| ***Continuous subcutaneous insulin infusion vs. multiple daily injections in children with type 1 diabetes: a systematic review and meta-analysis of randomized control trials***  **Maps to: Minimising risks or harms** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Continuous subcutaneous insulin infusion (CSII) vs multiple daily injections (MDI) | Glycemic control (total HbA1c) end of trial | 5 | Significant reduction, MR = -0.24 (95% CI: -0.41 to -0.07) |
| Glycemic control (HbA1c) 3 months | 3 | Significant reduction, MR = -0.29 (95% CI: -0.47 to -0.11) |
| Total insulin dose (unit/ kg/day) | 3 | Significant reduction, MR = -0.22 ( 95% CI: -0.31 to -0.14) |
| BMI | 2 | 1 study non-significant changes; 1 study significant reduction, MR = -0.02 (no CI) |
| Severe hypoglycaemia | 4 | Non-significant reduction |
| Ketoacidosis | 2 | Increase (significance unknown): 2 cases with CSII, none with MDI |
| Patient quality of life | 4 | 1 study significant increase in treatment satisfaction subscale, no significant changes other subscales (impact, worry, satisfaction); 1 study increase (significance unknown); 2 studies non-significant changes |
| Carer (parental) quality of life | 1 | Reduction in mothers' rating of impact on family (significance unknown); significant reduction in stress for fathers |
| Discontinuation | 2 | No CSII participants opted out of treatment at the end of trial |
| Continuation | 2 | 1 study 95% intervention families continued CSII treatment; 1 study 70% control and intervention patients switched to CSII |
| ***Summary of results:***  CSII significantly decreased total insulin dose and improved glycemic control (total HbA1c) at the end of studies and at 3 month follow-up, when compared with MDI. CSII non-significantly decreased rates of severe hypoglycemia but non-significantly increased rates of ketoacidosis, with the only two cases reported with CSII treatment rather than MDI. No CSII participants discontinued treatment at the end of trial (2 studies); while the majority of participants opted to continue or switch to CSII over MDI (2 studies). CSII significantly decreased BMI in half of studies (1 of 2), had mixed effects on quality of life for children but improved quality of life measures for parents in a single study. | | | |
| ***Effectiveness statements:***  There is some evidence that CSII decreases total insulin dose, and improves glycemic control when compared to MDI — it is generally effective. There is insufficient evidence that CSII reduces adverse events (ketoacidosis, severe hypoglycemia) — it is generally ineffective. There is insufficient evidence that CSII improves treatment discontinuation and continuation, child and carer quality of life and BMI — the results are mixed. | | | |

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| **Parr 2009** | | | |
| ***Effectiveness of current treatment approaches for benzodiazepine discontinuation: a meta-analysis***  **Maps to: Supporting behaviour change, Providing information or education** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Brief intervention vs routine care | Ceased use | 5 | 4 studies significant increase, range OR = 1.99 (95% CI: 1.58 to 2.50) to OR = 21.09 (95% CI: 4.78 to 92.97); 1 study non-significant increase |
| Gradual dose reduction (GDR) vs routine care | Ceased use | 1 | Significant increase, OR = 5.96 (95% CI: 2.08 to 17.11) |
| Psychological interventions vs routine care | Ceased use (post intervention) | 3 | Significant increase, OR = 3.38 (95% CI: 1.86 to 6.12) |
| Ceased use (follow up) | 1 | Significant increase, OR = 13.5 (95% CI: 1.20 to 152.21) |
| GDR plus psychological interventions vs GDR | Ceased use (post intervention) | 6 | Significant increase, OR = 1.82 (95% CI: 1.25 to 2.67) |
| Ceased use (follow up) | 6 | Significant increase, OR = 1.88 (95% CI: 1.19 to 2.97) |
| GDR plus substitutive pharmacotherapy vs GDR | Ceased use (post intervention) | 14 | Non-significant increase |
| Ceased use (follow up) | 5 | Non-significant increase |
| Ceased use (post intervention) | 2 | 2 studies non-significant reduction |
| Abrupt withdrawal plus abrupt substitutive pharmacotherapy vs abrupt withdrawal plus placebo | Ceased use (post intervention) | 1 | Non-significant increase |
| GDR plus psychological intervention vs abrupt withdrawal plus psychological intervention | Ceased use (post intervention) | 1 | Non-significant increase |
| Ceased use (follow up) | 1 | Non-significant increase |
| ***Summary of results:***  Brief interventions significantly increased cessation in the majority (4 of 5) of studies, and in single studies GDR and psychological interventions also significantly improved cessation rates, when compared with routine care. GDR combined with psychological intervention significantly increased cessation immediately following intervention and at follow up, compared to GDR alone, with mean duration of withdrawal reported as 49 days (range 6.5 to 84 days). GDR plus substitutive pharmacotherapy non-significantly increased cessation when compared to GDR alone, both immediately following intervention and at follow up, and with mean withdrawal duration reported as 36 days (range 14 to 70 days). GDR plus abrupt substitutive pharmacotherapy non-significantly decreased cessation post-intervention, when compared to GDR alone in a single study. Also in single studies, abrupt withdrawal plus abrupt substitutive pharmacotherapy (compared to abrupt withdrawal plus placebo) and GDR plus psychological intervention (compared to abrupt withdrawal plus psychological intervention) non-significantly increased cessation rates. | | | |
| ***Effectiveness statements:***  There is some evidence that GDR alone, brief interventions and psychological interventions each improve cessation, when compared to routine care — they are generally effective. There is some evidence that GDR delivered with psychological interventions improves cessation, when compared to GDR alone — it is generally effective. There is insufficient evidence to determine the effects of GDR plus substitutive pharmacotherapy or abrupt substitutive pharmacotherapy, or of abrupt withdrawal. | | | |

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| **Polis 2007** | | | |
| ***Advance provision of emergency contraception for pregnancy prevention: a meta-analysis***  **Maps to: Supporting behaviour change, Improving quality** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Advance provision vs standard provision | Pregnancy rates 12 months | 4 | Non-significant changes |
| Pregnancy rates 6 months | 7 | Non-significant reduction |
| Emergency contraceptive use | 7 | Significant increase, ARI = 17 more people out of 100 (95% CI: 9 to 27 more) |
| Multiple uses of emergency contraceptives | 3 | Significant increase, ARI = 15 more people out of 100 (95% CI: 4 to 32 more) |
| Non-use of emergency contraceptives | 5 | Reduction (significance unknown) |
| Incorrect use of emergency contraceptives | 3 | 1 study 17% increase; 2 studies unclear |
| Time to emergency contraception use | 5 | 4 studies significant reductions, range from mean 10.4 to 14.6 hours shorter; 1 study non-significant changes |
| Standard contraceptive use | 5 | 1 study unclear; 4 studies non-significant changes |
| ***Summary of results:***  Advance provision of emergency contraception, compared to standard provision, significantly increased use and multiple uses of emergency contraception and significantly decreased time to emergency contraceptive use in the majority of studies (4 of 5 studies). However there were no significant effects on pregnancy rates or standard contraceptive use, and while non-use of emergency contraception decreased with advance provision (significance unknown), incorrect use also increased by 17% in a minority (1 of 3) of studies where advance provision occurred. | | | |
| ***Effectiveness statements:***  There is some evidence that advance emergency contraception provision increases use and multiple use of emergency contraception and decreases time to use, when compared to standard provision — it is generally effective. There is insufficient evidence that advance provision improves pregnancy rates, standard contraceptive use or non-used of emergency contraception — it is generally ineffective. There is insufficient evidence to determine the effects of advance provision on incorrect use. | | | |

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| **Ranji 2008** | | | |
| ***Interventions to reduce unnecessary antibiotic prescribing: a systematic review and quantitative analysis***  **Maps to: Facilitating communication and/or decision making, Improving quality, Minimising risks or harms, Providing information or education, Supporting behaviour change** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Clinician education alone vs control | Proportion of patients receiving antibiotics | 10 ints | Absolute reductions, range = 6.5 to 28.6% lower |
| Cost | 1 int | Reduction by 31% lower (significance unknown) |
| Health service use | 1 int | Non-significant changes |
| Patient education alone vs control | Proportion of patients receiving antibiotics | 6 ints | Absolute reductions, range = 0.2 to 17.0% lower |
| Clinician education plus patient education vs control | Proportion of patients receiving antibiotics | 5 ints | Absolute reductions, range = 1.5 to 28.5% lower |
| Antimicrobial resistance | 2 int | Non-significant changes |
| Health service use | 1 int | Non-significant changes |
| Clinician education plus patient education plus audit feedback vs control | Proportion of patients receiving antibiotics | 3 ints | Absolute reductions, range = 7.9 to 24.0% lower |
| Health service use | 2 ints | Non-significant changes |
| Satisfaction | 1 int | Non-significant changes |
| Other quality improvement strategies (alone or in combination) vs control | Proportion of patients receiving antibiotics | 6 ints | Absolute reductions, range = 2.0 to 15.0% lower |
| Health service use | 1 int | Non-significant changes |
| Community-based interventions (mass media campaign with education and written materials and other combinations) vs control | Antibiotic prescriptions per patient or provider | 5 ints | 3 ints significant reductions, range = 0.6% to 35.8% lower; 2 ints non-significant changes |
| Antimicrobial resistance/ colonization | 1 int | Significant reduction |
| Community-based interventions (audit and feedback combination) vs control | Antibiotic prescriptions | 2 ints | Non-significant changes |
| Cost | 1 int | Reduction by 18% lower (significance unknown) |
| Non-community-based interventions targeting clinicians and patients (audit and feedback interventions; educational workshops plus combinations) vs control | Antibiotic prescriptions | 2 ints | Significant reductions, range = 16% to 7.9% lower |
| Non-community-based interventions targeting clinicians (various combinations) vs control | Antibiotic prescribing rate | 7 ints | 4 ints non-significant changes; 1 int absolute reduction 10.5%; 1 int reduction 27.8%; 1 int reduction (size unclear) |
| Health service use | 2 ints | Non-significant changes |
| Satisfaction | 2 ints | Non-significant changes |
| Non-community-based interventions targeting patients (financial incentives; educational videos and pamphlet) vs control | Antibiotic consumption/antibiotic prescription | 2 ints | Reductions, range = 12 to 55% |
| Health service use | 1 int | Non-significant changes |
| Delayed antibiotic vs control (immediate antibiotic) | Percentage of patients filling antibiotic prescription | 6 ints | Absolute reductions, range = 15 to 74.5% lower |
| Mean number of antibiotic prescriptions | 1 int | Reduction by 20% |
| Health service use | 3 ints | Non-significant changes |
| Adverse effects | 1 int | Significant reduction in diarrhoea in patients not receiving antibiotics; non-significant changes in rash incidence |
| Satisfaction | 4 ints | 3 ints non-significant changes; 1 int fewer patients in delayed group "very satisfied" (significance unknown) |
| ***Summary of results:***  Clinician education alone, compared with control, reduced the proportion of patients receiving antibiotics (10 ints) to various degrees, and may reduce cost (1 int) although significance was unclear for both results and health service use was not significantly changed. Patient education alone reduced the proportion of patients receiving antibiotics (6 ints) by variable amounts when compared with control, but significance was unclear. Clinician plus patient education also reduced the proportion of patients receiving antibiotics (5 ints) by variable amounts, but significance was unclear and there were no significant effects on antimicrobial resistance or health service use when compared with control. Clinician plus patient education plus audit feedback reduced the proportion of patients receiving antibiotics (3 ints); again this was variable and significance unclear. There were no significant effects on health service use or satisfaction, when compared with control. Other quality improvement strategies (alone or combined) reduced the proportion of patients receiving antibiotics (6 ints) but to variable degrees and significance was unclear, and there were no significant effects on health service use when compared with control (1 int). Community-based interventions (mass media campaign, education, written materials, other combinations) significantly reduced the proportion of patients receiving antibiotics in the majority of cases (3 of 5 ints) and significantly reduced antimicrobial resistance in a single study when compared with control. In comparison, community-based interventions incorporating audit and feedback had no significant effects on antibiotic prescriptions (2 ints) but may reduce cost (1 int; significance unclear) when compared with control. Non-community-based interventions targeting clinicians and patients (audit and feedback, educational workshops, combinations) significantly decreased antibiotic prescriptions (2 ints) when compared to control. However, non-community-based interventions targeting clinicians (various combinations) reduced antibiotic prescribing in only a minority of studies (3 of 7 ints; significance unknown); with no significant effects on satisfaction or health service use when compared to control. Non-community-based interventions targeting patients decreased antibiotic consumption (2 ints) but significance was unclear, and health service use did not significantly change when compared to control (1 int). Delayed antibiotics significantly reduced percentage of patients filling antibiotic prescriptions (6 ints) and mean number of antibiotic prescriptions (1 int), although significance was unclear. Satisfaction was lower with delayed antibiotics in the minority (1 of 4 ints, significance unclear) of cases, and effects on adverse events were mixed when compared with control (1 int). | | | |
| ***Effectiveness statements:***  There is some evidence from trials that any quality improvement strategy may decrease prescribing rates or proportions of patients using antibiotics compared to control — results are mixed and of variable size. There is insufficient evidence to determine the effects of any quality improvement strategy on antimicrobial resistance, clinical outcomes, adverse events, health service use, satisfaction or costs. | | | |

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| **Roughead 2005** | | | |
| ***Pharmaceutical care services: A systematic review of published studies, 1990 to 2003, examining effectiveness in improving patient outcomes***  **Maps to: Facilitating communication and/or decision making, Acquiring skills and competencies, Minimising risks or harms, Improving quality** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Pharmaceutical care vs usual care | Change in adherence | 8 | 2 studies significant improvement; 6 studies non-significant changes |
| Change in knowledge | 6 | 4 studies significant increase; 2 studies non-significant changes |
| Medicines use | 9 | 6 studies significant improvement; 3 studies non-significant changes |
| Medicines technique | 2 | 2 studies significant improvement |
| Pharmaceutical care issues and risk management | 2 | 2 studies significantly improvement |
| Health resource use | 8 | 2 studies significant reduction; 6 studies non-significant changes |
| Morbidity and mortality | 6 | Mixed results (increases and decreases) |
| Quality of life | 16 | 11 studies non-significant changes |
| Clinical outcomes | 16 | Mixed results |
| Adverse events | 4 | 1 study significant decrease, 3 studies non-significant changes |
| ***Summary of results:***  In a review of 22 studies of pharmaceutical care interventions, a minority of studies (2 of 8) showed significant improvements in adherence. However, a majority showed significant improvements in knowledge (4 of 6) and medicines use (6 of 9), including improvements (2 of 2) following education on techniques for using drugs (eg inhaler use), and improved risk management (2 of 2). There were mixed results for clinical outcomes (16 studies), and mortality and morbidity (6 studies). A minority of studies (1 of 4) showed improvement in adverse events, quality of life (5 of 16) and (2 of 8) for health resource use (hospitalisation and emergency admissions). | | | |
| ***Effectiveness statements:***  There is insufficient evidence to support the use of pharmaceutical care services to improve medicines adherence - it is generally ineffective. There is some evidence that pharmaceutical care improves knowledge and medicines use - it is generally effective. But insufficient evidence to support its use to improve health service, most morbidity outcomes and adverse events - it is generally ineffective. However, there is some evidence that it improves clinical outcomes - the results were mixed. | | | |

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| **Royal 2006** | | | |
| ***Interventions in primary care to reduce medication related adverse events and hospital admissions: systematic review and meta-analysis***  **Maps to: Minimising risks or harms, Improving quality** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Pharmacist-led intervention vs control | Hospital admission | 15 | 11 studies non-significant changes; 4 studies reduction (significance unclear) |
| Emergency department visits | 3 | 3 studies non-significant changes |
| Mortality | 4 | 2 studies significant reduction; 2 studies non-significant reduction |
| Adverse medicines reactions | 3 | 1 study significant increase in resolution of adverse events; 2 studies non-significant reduction in adverse events |
| Primary healthcare professional-led intervention vs control | Hospital admission | 7 | 2 studies non-significant reduction; 2 studies non-significant increase; 2 studies non-significant changes; 1 study significant reduction pre- to post-intervention |
| Emergency department visits | 4 | 3 studies non-significant reduction; 1 study non-significant increase |
| Adverse drug events per patient | 1 | Non-significant increase |
| Nurse-led chronic disease management vs control | Adverse drug events | 4 | Non-significant increase |
| Complex intervention to reduce falls vs control | Hospital admission | 2 | 2 studies non-significant reduction |
| Emergency department visits | 1 | Non-significant reduction |
| Falls | 11 | 10 studies non-significant reduction; 1 study significant reduction |
| ***Summary of results:***  All 3 studies assessing medicines adverse events showed an improvement with pharmacist-led medicines review, compared with control, although only 1 of 3 studies was significant. A minority (4 of 15) of studies of pharmacist-led medicines review, compared with control, decreased hospital admissions, although significance was unclear. Half of studies (2 of 4) showed significantly decreased mortality with pharmacist-led interventions, with no significant changes in emergency department visits when compared with control. There were no significant changes to hospital admission, emergency department visits or adverse drug events when interventions delivered by other healthcare professionals, or complex interventions to reduce medicines-related falls, were compared with control. | | | |
| ***Effectiveness statements:***  There is some evidence that pharmacist-led interventions decrease adverse events - results are mixed. There is some evidence that pharmacist-led interventions decrease mortality - results are mixed. There is insufficient evidence that pharmacist-led interventions improve hospital admissions or emergency department visits - they are generally ineffective. There is insufficient evidence that interventions led by nurses and physicians, or complex interventions to reduce falls, improve adverse events, hospital admissions or other outcomes - they are generally ineffective. | | | |

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| **Rueda 2006** | | | |
| ***Patient support and education for promoting adherence to highly active antiretroviral therapy for HIV/AIDS***  **Maps to: Providing information or education, Acquiring skills and competencies, Supporting behaviour change, Support** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Any support or education vs usual care | Adherence | 19 | 10 studies significant improvements; 9 studies non-significant changes |
| Virological or immunological outcomes | 12 | Conflicting findings depending on outcomes, time points, etc |
| ***Summary of results:***  Approximately half (10 of 19) of the interventions examined were associated with statistically significant increases in adherence to highly active antiretroviral therapy (HAART). Results were mixed in the 12 studies that measured clinical outcomes. A majority of studies (10 of 15) providing individual interventions reported significant improvement in adherence; no studies (0 of 4) reported improvement in groups. A majority of studies (6 of 7) over 12 weeks long significantly improved adherence; no studies less than 12 weeks (0 of 8) reported improvement. A majority of studies of medicines management skills (6 of 8) significantly improved adherence; a minority of studies (1 of 7) of cognitive behavioural therapy and motivational interviewing significantly improved adherence. Studies with marginalized populations were not successful. | | | |
| ***Effectiveness statements:***  There is some evidence that supportive and educational interventions improve adherence to HAART and improve clinical outcomes - results were mixed. There is some evidence that interventions aimed at individuals rather than groups, delivered over at least 12 weeks, and providing practical medicines management strategies rather than more complex psychologically-based approaches improve adherence - they are generally effective. | | | |

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| **Russell 2006** | | | |
| ***Older adult medication compliance: integrated review of randomized controlled trials***  **Maps to: Providing information or education, Supporting behaviour change, Acquiring skills and competencies, Support** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Cues vs control | Adherence | 6 | 4 studies significant increase; 2 studies non-significant changes |
| Organisers vs control | Adherence | 3 | 1 study significant increase; 2 studies non-significant changes |
| Cues and organisers vs control | Adherence | 2 | 1 study significant increase; 1 study non-significant change |
| Self-medication management program vs control | Adherence | 2 | 2 studies significant increase |
| Dose simplification: low vs higher frequency doses | Adherence | 3 | 3 studies significant increase |
| Brief counselling and education (1-3 days) vs control | Adherence | 23 | 12 studies significant increase; 11 studies non-significant changes |
| Extensive counselling and education (> 3 days) vs control | Adherence | 17 | 8 studies significant increase; 9 studies non-significant changes |
| Counselling and education (unknown length) vs control | Adherence | 1 | Non-significant changes |
| ***Summary of results:***  Half (31 of 57) of the interventions significantly improved medicines adherence when compared with control. All three studies assessing simplified dose regimens (lowered dose frequency) reported significant effects, and both studies on self-medication management programs reported significant benefits for adherence. Results for other interventions were mixed. A majority (4 of 6) studies evaluating cue interventions reported improved adherence compared with controls. Only half (1 of 2) of studies assessing cues combined with organisers and a minority (1 of 3) assessing organizers alone reported significant effects on adherence. Effects of counselling and education were also mixed, with half (20 of 41) of studies reporting significant effects on adherence. No study reported negative effects of any evaluated intervention on adherence. | | | |
| ***Effectiveness statements:***  There is some evidence that self-medication management programs improve adherence - they are generally effective. There is some evidence that simplified dose regimens improve adherence - they are generally effective. There is some evidence that counselling and education, cues and/ or organiser interventions improve adherence - the results are mixed. | | | |

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| **Saini 2009** | | | |
| ***Effect of medication dosing frequency on adherence in chronic diseases***  **Maps to: Supporting behaviour change** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Simplified oral medicines dosage: once daily vs twice daily | Medicines adherence (correct MEMS openings) | 8 | 5 studies significant increases, range = 2 to 15% higher; 3 studies non-significant increases |
| Simplified oral medicines dosage: once daily vs thrice daily | Medicines adherence (correct MEMS openings) | 1 | 1 study significant increase by 12% higher |
| Simplified oral medicines dosage: twice daily vs thrice daily | Medicines adherence (correct MEMS openings) | 1 | 1 study increase by 9% higher (significance unknown) |
| Simplified oral medicines dosage: once daily vs twice daily | Medicines adherence (days with correct MEMS openings) | 10 | 8 studies significant increases, range = 9 to 26% higher; 1 study increase (significance unclear); 1 study non-significant increase |
| Simplified oral medicines dosage: once daily vs thrice daily | Medicines adherence (days with correct MEMS openings) | 2 | 2 studies significant increases, range = 20 to 25% higher |
| Simplified oral medicines dosage: twice daily vs thrice daily | Medicines adherence (days with correct MEMS openings) | 3 | 1 study increase by 16% higher (significance unclear); 1 study non-significant increase; 1 study no changes |
| Simplified oral medicines dosage: twice daily vs four times daily | Medicines adherence (days with correct MEMS openings) | 1 | 1 study non-significant increase |
| Simplified oral medicines dosage: thrice daily vs four times daily | Medicines adherence (days with correct MEMS openings) | 1 | 1 study no changes |
| ***Summary of results:***  Simplified dosing to once daily significantly increased the total percentage of correct MEMS openings in the majority of studies compared to twice daily (5 of 8) and compared to thrice daily in a single study. Once daily dosing also increased the total percentage of days with correct MEMS openings in the majority of studies compared to twice daily (8 of 10) and thrice daily (2 of 2). Simplified dosing from thrice to twice daily also increased the total percentage of correct MEMS openings in a single study. The total percentage of days with correct MEMS openings was increased in the minority of studies when twice was compared to thrice daily (1 of 3, significance unclear). When twice was compared to four times daily in a single study, the percentage of days with correct MEMs was non-significantly increased. In a single study that assessed simplified dosing from four times to thrice daily, the total percentage of correct MEMS openings did not change. | | | |
| ***Effectiveness statements:***  There is some evidence that simplified dosages to once daily increases the total percentage of correct MEMS openings and days with correct MEMS openings - they are generally effective. There is insufficient evidence to assess the effect of simplified dosing to twice daily or thrice daily. | | | |

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| **Schedlbauer 2010** | | | |
| ***Interventions to improve adherence to lipid lowering medication***  **Maps to: Providing information or education, Supporting behaviour change** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Altered medicine regimen (bar form) vs usual regimen (powder form) | Adherence (pill count) | 1 | 1 study non-significant reduction |
| Simplification of medicine regimen vs usual regimen | Adherence (pill count) | 1 | 1 study MI = 11 more pills out of 100 (no CI); 1 study non-significant reduction |
| Patient preference | 1 | ARI = 59 more people out of 100 (no CI) |
| Serum lipids (LDL/ HDL ratio) | 1 | Significant reduction: MR = 0.17 units lower (no CI) |
| Consumer adverse events (flushing) | 1 | MR = 28 fewer people out of 100 (no CI) |
| Patient information and education | Adherence (prescription refill) | 2 | 1 study mixed: ARI = 13 more re-fills out of 100 (no CI) (newly prescribed) and non-significant increase (repeat prescriptions); 1 study non-significant increase |
| Intensified patient care (reminding) vs usual care | Adherence (pill count) | 4 | 3 studies significant increase, MI range = 6.5 to 9 more pills out of 100 (no CI); 1 study non-significant changes |
| Adherence (prescription refill) | 2 | 1 study significant increases, MI range = 24 to 25 more refills out of 100 (no CI); 1 study non-significant changes |
| Adherence (self-report) | 2 | 2 studies non-significant changes |
| Persistence (300 days) | 1 | 1 study significant increase, MI = 13 more people out of 100 (no CI) |
| Total cholesterol | 3 | 1 study mixed: non-significant changes (short-term) and significant reduction (long-term), MR = 9.1% (no CI); 2 studies significant reduction, MR range = 22.8 to 31.6 mg/dl lower (no CI) |
| LDL | 3 | 1 study mixed: non-significant changes (short-term) and significant reduction (long-term), MR = 9.9% (no CI); 2 studies significant reduction, MR = range 22.5 to 27.6 mg/dl lower, |
| HDL | 3 | Non-significant changes |
| Triglycerides | 3 | 1 study mixed: non-significant changes (short-term) and significant reduction (long-term), MR = 6.3% lower (no CI); 1 study non-significant reduction; 1 study significant increase, MI = 25.7mg/dl more (no CI) |
| Complex behavioural approach – group sessions vs usual care | Adherence | 1 | Non-significant increase |
| Consumer adverse events | 1 | Non-significant reduction |
| Total cholesterol | 1 | Non-significant reduction |
| LDL | 1 | Non-significant reduction |
| HDL | 1 | Non-significant reduction |
| Triglycerides | 1 | Significant reduction MR= 30 mg/dl lower (no CI) |
| ***Summary of results:***  Overall a minority of studies (5 of 11) improved adherence to lipid lowering medications. Patient information and education interventions improved adherence by prescription refill in 1 of 2 studies compared to usual care. Adherence by pill count was not significantly changed by an altered medicines regimen (bar instead of powder form). For intensified patient care (reminding) compared to usual care adherence measured by pill count (3 of 4 studies) or by prescription refill (1 of 2 studies) were significantly improved, although self-report showed no significant changes (2 studies); persistence in adherence to the medicine beyond 300 days was significantly increased, however effects on serum lipids were inconsistent. In the complex behavioural intervention (group sessions) adherence by pill count was non-significantly changed as were consumer adverse events, total cholesterol, LDL and HDL however there was a significant reduction in triglycerides compared to usual care. In a single study, a simplified medicines regimen significantly reduced LDL/HDL ratio and adverse events and increased patient adherence and preferences. | | | |
| ***Effectiveness statements:***  There is some evidence that intensified patient care (reminding) interventions improve the rate of adherence to lipid lowering medications and clinical outcomes - they have mixed effects. There is insufficient evidence to determine the effects of simplifying medicines regimens, patient information and education as well as complex behavioural approaches to improve adherence and clinical outcomes related to self-administered lipid lowering medicines. | | | |

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| **Schroeder 2004** | | | |
| ***Interventions for improving adherence to treatment in patients with high blood pressure in ambulatory settings***  **Maps to: Providing information or education, Supporting behaviour change, Support, Improving quality** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Simplification of medicines regimen vs usual regimen | Adherence | 9 ints | 2 ints non-significant increase; 7 inst RR increase 8 to 19.6% |
| Patient education vs usual care | Adherence | 6 ints | 3 ints non-significant increase; 2 ints non-significant decrease; 1 int ARI = 24% |
| Patient motivation, support and reminders vs usual care | Adherence | 24 ints | 10 ints ARI up to 24% |
| Complex health and organisational interventions (combined interventions and structure hypertension management) vs usual care | Adherence | 18 ints | 8 ints ARI up to 41% |
| ***Summary of results:***  19 of the 38 studies showed significant increases in adherence. Some studies evaluated multiple types of adherence-enhancing interventions (therefore effects by number of interventions are reported here). Simplification of dosing regimens increased adherence in 7 out of 9 interventions. Patient education increased adherence in 1 out of 6 interventions. Patient motivation, support and reminders increased adherence in 10 out of 24 interventions (successful interventions included reminder charts, self-determination training, reminders and packaging, social support, nurse phone calls, family member support, electronic medication cap aid and telephone-linked computer counselling). Complex interventions increased adherence in 8 out of 18 interventions (successful interventions included work site care; combined home visits, education and special dosing devices; educational leaflet, reminders and educational newsletter; and pharmacist-led patient medicines management and advice interventions). The effects of interventions on adherence rates was variable and where significant ranged from 5% to 41% increase. | | | |
| ***Effectiveness statements:***  The overall results of all types of interventions to improve adherence to antihypertensive medicines were mixed. There is sufficient evidence that simplification of medicines regimens improves adherence - it is generally effective. There is insufficient evidence that patient education improves adherence - it is generally ineffective. There is some evidence that patient motivation, support and reminders or complex or combined interventions improve adherence - the results were mixed. | | | |

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| **Smith 2009** | | | |
| ***Review: Provider practice and user behavior interventions to improve prompt and effective treatment of malaria: do we know what works?***  **Maps to: Providing information or education, Supporting behaviour change** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Education (before and after assessment; no control group) | Knowledge (appropriate antimalarial medicine (AM)) | 2 | MI over baseline, range = 32 to 88 more out of 100 |
| Education vs control | Appropriate AM treatment (user) | 1 | AMI = 19 more out of 100 (no CI) |
| Appropriate AM dose (user) | 1 | Non-significant increase |
| Education / training plus pre-packaged AM vs control | Appropriate treatment (correct AM, correct dose and duration) (user) | 1 | AMI = 14 more out of 100 (no CI) |
| Appropriate treatment (correct AM, correct dose and duration) (provider) | 2 | AMI range = 10 to 20 more out of 100 |
| Adherence | 2 | 1 study non-significant increase; 1 study AMI = 22 more out of 100 (no CI) |
| Education / training plus pre-packaged AM (before and after assessment; no control group) | Appropriate AM treatment (provider) | 1 | MI over baseline = 39 more out of 100 (no CI) |
| Appropriate AM dose (provider) | 1 | MI over baseline = 46 more out of 100 (no CI) |
| Appropriate AM treatment (user) | 1 | MI over baseline = 21 more out of 100 (no CI) |
| Appropriate AM dose (user) | 1 | MI over baseline = 46 more out of 100 (no CI) |
| Appropriate duration (user) | 1 | MI over baseline = 51 more out of 100 (no CI) |
| Pre-packaged AM tablet vs AM syrup | Adherence | 1 | AMI = 49 more out of 100 (no CI) |
| AM syrup plus pictorial instruction vs AM syrup | Adherence | 1 | AMI = 15 more out of 100 (no CI) |
| Adherence | 1 | AMI = 37 more out of 100 (no CI) |
| AM syrup plus pictorial instruction plus verbal instruction vs AM syrup plus pictorial insert | Adherence | 1 | AMI = 21 more out of 100 (no CI) |
| Integrated childhood disease management vs control | Appropriate treatment (correct AM, correct dose and duration) (provider) | 2 | 2 studies significant increase: range of MI = 25 to 63 more out of 100 (no CI) |
| Treatment supervision vs none | Adherence | 1 | AMI = 26 more out of 100 (no CI) |
| Provider (formal) training/ education (vs control or BA) | Appropriate treatment (correct AM, correct dose and/or duration) (provider) | 3 | 3 studies non-significant increase |
| Provider (informal) training/ education vs control | Appropriate AM prescribed (provider) | 2 | AMI range = 20 to 21 more out of 100 |
| Provider (informal) training/ education (vs control or BA) | Appropriate AM dose (provider) | 2 | 1 study, AMI = 16 more out of 100 (no CI); 1 study, MI over baseline = 50 more out of 100 (no CI) |
| Provider (informal) training/ education (before and after assessment; no control group) | Appropriate AM treatment (provider) | 1 | MI over baseline = 71 more out of 100 (no CI) |
| Dispensing and communication skills training (before and after assessment; no control group) | Appropriate treatment (correct AM, dose and duration) (provider) | 1 | MI over baseline = 98 more out of 100 (no CI) |
| Prompt treatment seeking and adherence (user) | 1 | MI over baseline = 26 more out of 100 (no CI) |
| Appropriate AM dose (provider) | 1 | MI over baseline = 51 more out of 100 (no CI) |
| Knowledge (dose) user | 1 | MI over baseline = 62 more out of 100 (no CI) |
| Training plus community education vs control | Appropriate treatment (correct AM, correct dose and duration) (provider) | 1 | AMI = 11 more out of 100 (no CI) |
| Adherence | 1 | AMI = 41 more out of 100 (no CI) |
| ***Summary of results:***  Education significantly increased patients’ knowledge of appropriate AM (2 studies) over baseline, and appropriate AM treatment but not dose (1 study), compared to control. When compared to control, education/ training plus pre-packaged AM significantly increased appropriate AM treatment for providers (2 studies) and patients (1 study), and adherence in half (1 of 2) of studies. Similar results were seen when comparing pre- and post-intervention outcomes. Integrated childhood disease management significantly improved appropriate AM treatment by providers, compared to control (2 studies). In single studies, pre-packaged AM tablets, AM syrup plus pictorial instruction or AM syrup plus pictorial and verbal instruction, each significantly increased adherence when compared to AM syrup. Treatment supervision also significantly increased adherence compared to none (1 study). Training/ education for formal providers did not significantly change appropriate AM treatment when compared to control, or after intervention compared to before (3 studies). Training/ education for informal providers significantly increased appropriate AM prescribed (2 studies) compared with control, appropriate AM dose (2 studies) compared to control and after intervention compared to before, and appropriate AM treatment after intervention compared to before (1 study). Dispensing and communication skills training significantly increased provider appropriate AM treatment and dose (1 study), and patient prompt treatment seeking and adherence and knowledge of dose (1 study) after intervention compared to before. In a single study, training plus community education significantly increased appropriate AM treatment, adherence and knowledge of correct dose, compared to control. | | | |
| ***Effectiveness statements:***  There is some evidence that education improves knowledge, but less evidence to determine effects on other outcomes (treatment, dose) — results are mixed. There is some evidence that education/training plus pre-packaging of AM improves appropriate AM and adherence — results are mixed. There is some evidence that integrated childhood disease management improves appropriate AM treatment — it is generally effective. There is some evidence that training/education for informal providers improves appropriate AM prescription and dose — it is generally effective; but insufficient evidence that training for formal providers changes appropriate treatment — it is generally ineffective. There is insufficient evidence to determine the effects of pre-packaged AM tablets, instructions (pictorial and/or verbal) plus AM syrup, treatment supervision, dispensing and communication skills training, or training plus community education. | | | |

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| **Spurling 2007** | | | |
| ***Delayed antibiotics for respiratory infections***  **Maps to: Facilitating communication and/or decision making, Minimising risks or harms** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Delayed vs immediate antibiotics | Antibiotic use | 6 | ARR = 64 fewer people out of 100 used antibiotics with delayed antibiotics (95% CI: 81 to 38 fewer) |
| Clinical: sore throat symptoms | 2 | Significant increase at day 3 in numbers with pain (1 study), malaise (1 study) and fever severity (2 studies) with delayed antibiotics; non-significant changes for severity of pain (1 study), malaise (1 study) or fever at day 1 (2 studies) |
| Clinical: otitis media symptoms | 2 | Significant increase at day 3 in pain severity with delayed antibiotics (1 study); non-significant changes at day 7 or for pain to day 7 (1 study); significant increase at days 3 to 7 for malaise and malaise severity with delayed antibiotics (1 study); non-significant change in fever severity (1 study) |
| Clinical: common cold symptoms | 1 | Non-significant changes at any time point for symptoms or severity |
| Clinical: cough symptoms | 2 | Non-significant changes |
| Supplementary medicines use | 2 | 1 study significant increase with delayed antibiotics MI = 0.59 (95% CI: 0.25, 0.93); 1 study non-significant decrease with immediate antibiotics |
| Adverse effects: vomiting | 3 | 1 study significant increase with delayed antibiotics; 2 studies non-significant changes |
| Adverse effects: stomach ache | 1 | Non-significant changes |
| Adverse effects: diarrhoea | 4 | 2 studies significant decrease with delayed antibiotics; 1 study non-significant decrease with delayed antibiotics; 1 study non-significant increase with delayed antibiotics |
| Adverse effects: rash | 2 | Non-significant changes |
| Satisfaction | 5 | ARR = 6 fewer people out of 100 were satisfied with their treatment with delayed antibiotics (95% CI: 12 to 3 fewer) |
| Delayed vs no antibiotics | Antibiotic use | 2 | Non-significant increase |
| Clinical: signs and symptoms | 2 | Non-significant changes (sore throat symptoms, cough symptoms) |
| Adverse effects | 1 | Non-significant changes (vomiting, rash, stomach ache, diarrhoea) |
| Satisfaction | 2 | Non-significant increase |
| ***Summary of results:***  For delayed versus immediate antibiotics: In meta-analysis, antibiotic use was significantly reduced with delayed antibiotics (6 studies but there was high heterogeneity), but patient satisfaction was also reduced (5 studies). One of 2 studies reported significantly higher supplementary medicines use with delayed prescribing. The effects were mixed for clinical outcomes for sore throat and otitis media, with both worse symptoms and no differences reported at different time points for delayed compared with immediate antibiotics; for cough or common cold there were no studies reporting significant differences in clinical outcomes between delayed and immediate antibiotics. Effects of delayed antibiotics were also mixed for adverse effects: a minority of studies (1 of 3) found significantly more vomiting, while half of studies (2 of 4) reported less diarrhoea, while for other adverse events there were no significant differences. For delayed versus no antibiotics: Two studies showed no significant changes in antibiotic use with delayed antibiotics, and no changes in symptom resolution, adverse events or patient satisfaction. | | | |
| ***Effectiveness statements:***  There is sufficient evidence that delayed antibiotics decrease antibiotic use in comparison to immediate antibiotics - they are generally effective. There is insufficient evidence of an effect of delayed antibiotics on antibiotic use in comparison to no antibiotics - they are generally ineffective. There is sufficient evidence that delayed antibiotics are associated with lower satisfaction - they are generally ineffective. There is some evidence that delayed antibiotics increase supplementary medicines use - results are mixed. There is insufficient evidence that delayed antibiotics improve clinical outcomes or adverse effects - results are mixed. | | | |

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| **Stevenson 2004** | | | |
| ***A systematic review of the research on communication between patients and* healthcare *professionals about medicines***  **Maps to: Providing information or education, Facilitating communication and/or decision making, Improving quality, Support, Minimising risks or harms** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Interventions promoting doctor-patient communication: training seminars for doctors vs no seminar | Repeated patient complaint | 2 | Increase with intervention (significance unclear) |
| Asked patient to repeat instructions or demonstrate use | 3 | 2 studies increase (significance unclear); 1 study increase at follow up |
| Patient medicines information recall | 1 | Increase with intervention (significance unclear) |
| Addressed patient fears about new medicines | 1 | Significant increase |
| Interventions promoting doctor-patient communication: patient communication skills training vs medicines education | Medicines question asking skill | 1 | Significant increase with communication skills training |
| Acquisition of medicines knowledge | 1 | Significant increase with communication skills training |
| Patient problems and symptoms | 1 | Non-significant change |
| Number of medicines questions asked | 1 | Significant increase with communication skills training |
| Interventions promoting doctor-patient communication: medicines fact sheet plus doctor counselling vs fact sheet | Medicines knowledge | 1 | Significant increase with combined intervention |
| Interventions promoting doctor-patient communication: medicines fact sheet plus doctor counselling vs no intervention | Medicines knowledge | 1 | Significant increase with intervention |
| Interventions promoting pharmacist-patient communication: modified pharmacy services and medicines review vs usual care | Adherence (self report) | 3 | 2 studies significant increase; 1 study increase and decrease |
| Adherence - prescription refill | 2 | 1 study significant increase; 1 study decrease and no change |
| Clinical outcomes | 2 | Significant improvement and no change |
| Patient satisfaction | 3 | Significant increase |
| Cost of medicines | 1 | Significant decrease |
| Medicines-related problems | 1 | Significant decrease |
| Interventions promoting pharmacist-patient communication: advertising campaign promoting question asking (no control) | Number of medicines questions asked | 1 | Non-significant change |
| Information tailored to patient | 1 | Increase with intervention (significance unclear) |
| Interventions promoting pharmacist-patient communication: written questions for pharmacist plus counselling vs usual care | Number of medicines questions asked | 1 | Significant increase |
| Patient recall of medicines information | 1 | Non-significant change |
| Adherence | 1 | Non-significant change |
| Interventions promoting pharmacist-patient communication: patient prompt for question asking plus counselling vs usual care | Patient recall of medicines information | 1 | Non-significant change |
| Adherence | 1 | Non-significant change |
| Patient recall of medicines information | 1 | Non-significant change |
| Adherence | 1 | Non-significant change |
| Number of medicines questions asked | 1 | Non-significant change |
| Interventions promoting pharmacist-patient communication: pharmacist questioning protocol for adherence problems vs usual care | Adherence | 1 | Significant increase |
| Satisfaction with answers to medicines questions | 1 | Significant increase |
| Interventions promoting nurse/ assistant-patient communication: telephone follow-up vs no call | Number reporting adverse effects | 1 | Non-significant change |
| Adherence (self-report) | 1 | Non-significant change |
| Adherence - pharmacy records | 1 | Non-significant change |
| Number stopping due to adverse events | 1 | Non-significant change |
| Usefulness of service | 1 | Majority felt intervention useful (significance unclear; no control) |
| Interventions promoting nurse/ assistant-patient communication: face-to-face consultation vs usual care | Adherence | 1 | Significant increase |
| Perceived barriers to adherence | 1 | Non-significant change |
| Discussions with doctor about medicines issues | 1 | Significant increase |
| Patient analgesia use | 1 | Increased following intervention (significance unclear; no control) |
| ***Summary of results:***  Doctor patient communication (5 studies): There were 4 studies on communication skills training. One study targeted patients and compared it to medicines education and found it improved medicines knowledge, question asking, and question asking skill but not clinical outcomes. Three studies targeted doctors: 1 found it increased the number of times doctors addressed patients’ fears about new medicines; the majority (2 of 3) of studies found it increased how often doctors asked patients to repeat instructions about use; 1 study showed it improved patient medicines recall, and the times doctors repeated patient complaints (2 of 2 studies) but significance was unclear. In another study, fact sheets with counselling by doctors increased patient medicines knowledge compared to fact sheets alone.  Pharmacist patient communication (6 studies): 1 study evaluated communication skills training targeted to pharmacists and found patients were more satisfied with pharmacist time and answering  their questions; 1 evaluated a mass media campaign targeting patients in which the number of questions asked did not increase, but information was more tailored by pharmacists; written prompts used by patients in 1 study did not increase questions asked, but prompts to patients to write questions for pharmacist did increase questions asked, but not adherence or patient recall; 3 studies changed pharmacist visits (clinic or home) which improved satisfaction and medicines problems and decreased costs, but effects were mixed for adherence and clinical outcomes.  Nurses or medical assistants and patient communication (5 studies): 3 studies in which face-to-face education/counselling was provided found, in individual studies, significantly increased adherence and increased discussions with doctors about medicines, but no change to barriers to adherence. Two studies evaluated telephone contact to discuss medical problems: 1 study found no difference in reporting of adverse effects or in adherence; the other study found more discussed issues on the call and found the calls useful. | | | |
| ***Effectiveness statements:***  There is insufficient evidence to determine whether interventions to improve two-way communication between patients and healthcare professionals improve outcomes related to communication, adherence and medicines use or clinical outcomes. | | | |

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| **Stone 2002** | | | |
| ***Interventions that increase use of adult immunization and cancer screening services: a meta-analysis***  **Maps to: Providing information or education, Supporting behaviour change, Improving quality, Minimising risks or harms** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Organisational change vs usual care/control | Immunisation uptake | 10 | Significant increase; OR = 16.0 (95% CI: 11.2 to 22.8) |
| Provider reminder vs usual care/control | Immunisation uptake | 22 | Significant increase; OR = 3.80 (95% CI: 3.31 to 4.37) |
| Patient financial incentive vs usual care/control | Immunisation uptake | 8 | Significant increase; OR = 3.42 (95% CI: 2.89 to 4.06) |
| Provider education vs usual care/control | Immunisation uptake | 13 | Significant increase; OR = 3.21 (95% CI: 2.24 to 4.61) |
| Patient reminder vs usual care/control | Immunisation uptake | 23 | Significant increase; OR 2.52 (95% CI: 2.24 to 2.82) |
| Patient education vs usual care/control | Immunisation uptake | 22 | Significant increase; OR = 1.29 (95% CI: 1.14 to 1.45) |
| Provider financial incentive vs usual care/control | Immunisation uptake | 4 | Non-significant increase |
| Feedback vs usual care/control | Immunisation uptake | 2 | Non-significant increase |
| ***Summary of results:***  Many interventions significantly increased use of adult immunisation. Relative effectiveness of interventions: organisational change was the most effective; provider reminder, patient financial incentives, provider education were effective; patient reminder and education were less effective. Provider financial incentives and feedback non-significantly increased uptake. | | | |
| ***Effectiveness statements:***  There is some evidence that many interventions increase uptake of adult immunisation - they are generally effective. Relative effectiveness of interventions: organisational change was the most effective; provider reminder, patient financial incentives, provider education were effective; patient reminder and education were less effective. Provider financial incentives and feedback non-significantly increased uptake. There was limited information for mass media interventions and regulatory or legislative actions. | | | |

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| **Thomas 2010** | | | |
| ***Interventions to increase influenza vaccination rates of those 60 years and older in the community***  **Maps to: Facilitating communication and decision making, Providing information or education, Improving quality, Supporting behaviour change, Minimising risks or harms** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Participant reminders (postcard) vs no intervention | Community immunisation demand | 11 | 5 studies significant increase, 4 studies non-significant increases, 1 study significant reduction, 1 study non-significant changes |
| Tailored reminders (letter, postcard or phone call) vs no intervention | Community immunisation demand | 13 | 9 studies significant increase, 3 studies non-significant increase, 1 study non-significant reduction |
| Participant reminder and recall (telephone call and education brochure) vs to usual publicity | Community immunisation demand | 1 | Significant increase, ARI = 27 more immunisations out of 100 (95% CI: 12 to 42) |
| Participant reminder and recall (letter and leaflet) vs letter | Community immunisation demand | 1 | Non-significant reduction |
| Participant reminder and recall (customised letter) vs form letter | Community immunisation demand | 1 | Non-significant increase |
| Participant reminder and recall (telephone invitation) vs invitation while in clinic | Community immunisation demand | 1 | Significant increase, ARI = 21 more immunisations out of 100 (95% CI: 8 to 35) |
| Education and vaccination offer vs no intervention | Immunisation demand | 2 | Significant increase, ARI = 16 more immunisations out of 100 (95% CI: 7 to 27) |
| Health risk appraisal and vaccination offer vs no intervention | Immunisation demand | 1 | Significant increase, ARI = 12 more immunisations out of 100 (95% CI: 7 to 17) |
| Participant education (by nurses and vaccinated patient) vs nurse educated patients | Immunisation demand | 1 | Significant increase, OR = 152.95 (95% CI: 9.39 to 2490.67) |
| Group visits to providers plus offer to vaccinate vs usual care | Immunisation access | 1 | Significant increase, OR = 24.85 (95% CI: 1.45 to 425.32) |
| Home visit plus vaccination offer vs usual care | Immunisation access | 2 | Significant increase, ARI = 5 more immunisations out of 100 (95% CI: 1 to 9) |
| Home visits with vaccination encouragement plus GP care plan vs no intervention | Immunisation access | 1 | Significant increase, ARI = 37 more immunisations out of 100 (95% CI: 26 to 42) |
| Home visits plus vaccination encouragement vs home visit plus safety intervention | Immunisation access | 1 | Non-significant changes |
| Free vaccination offer vs vaccination invitation (patient pays) | Immunisation access | 2 | Significant increase, ARI = 20 more immunisations out of 100 (95% CI: 16 to 25) |
| Free vaccination offer vs no intervention | Immunisation access | 2 | 2 studies significant increases, ARI range = 28 to 47 more immunisations out of 100 |
| Physician reminders vs no reminder | Immunisation access | 3 | 1 study significant increase, 1 study non-significant increase, 1 study non-significant reduction |
| Hospital staff reminders vs GP discharge reminder | Immunisation rate | 1 | Non-significant increase |
| Physician reminders about all patients vs reminder about half patients | Immunisation rate | 1 | Significant increase, ARI = 22 more immunisations out of 100 (95% CI: 10 to 33) |
| Physician reminders (posters of vaccination uptake in clinic) plus patient postcard vs no intervention | Immunisation rate | 1 | Significant increase, ARI = 17 more immunisations out of 100 (95% CI: 15 to 19) |
| Physician reminders (posters of vaccination uptake in clinic) plus patient postcard vs physician reminders (posters of vaccination uptake in clinic) only | Immunisation rate | 1 | Non-significant increase |
| Facilitators working with physicians on prevention measures including influenza vaccination vs no intervention | Immunisation rate | 3 | 2 studies significant increase, 1 study non-significant changes |
| Educational reminders, academic detailing and peer comparisons vs mailed educational materials | Immunisation rate | 1 | Non-significant increase |
| Education and feedback to physicians vs chart review and feedback | Immunisation rate | 2 | 1 study significant increase, 1 study non-significant decrease |
| Financial incentives to physicians vs no intervention | Immunisation rate | 2 | Significant increase, ARI = 12 more immunisations out of 100 (95% CI: 6 to 14) |
| ***Summary of results:***  Participant reminders (postcard) significantly increased community immunisation demand in about half (5 of 11) of the studies compared to no intervention. However, tailored reminders (letter, postcard or phone call) significantly increased community immunisation demand in the majority (9 of 13) of studies compared to no intervention. In a single study, participant reminder and recall (telephone call and education brochure) significantly increased community demand compared to usual publicity. In a single study, participant reminder and recall (letter and leaflet) compared to letter and in another single study participant reminder and recall (customised letter) compared to form letter had non-significant changes on community immunisation demand. Participant reminder and recall (telephone invitation) compared to invitation while in clinic significantly increased community immunisation demand (1 study), as did education and vaccination offers (2 studies); participant education (by nurses and vaccinated patient) compared nurse educated patients (1 study) or health risk appraisal and vaccination offer compared to no intervention (1 study). Group visits to providers plus the offer to vaccinate significantly increased immunisation access compared to usual care (1 study) as did home visits plus vaccination offer compared to usual care (2 studies) and home visits with vaccination encouragement plus GP care plan compared to no intervention (1 study). However, home visits plus vaccination encouragement compared to home visits plus a safety intervention did not significantly change immunisation access. Free vaccination offer compared to vaccination invitation (patient pays) significantly increased immunisation access (2 studies) as did free vaccination offer compared to no intervention (2 studies). Physician reminders compared to no reminder significantly increased the immunisation rate (1 of 3 studies) but hospital staff reminders compared to GP discharge reminder had non-significant changes. Physician reminders for all patients compared to reminder for half of their patients significantly increased the immunisation rate as did physician reminders (posters of vaccination uptake in clinic) plus patient postcards compared to no intervention. However, physician reminders (posters of vaccination uptake in clinic) plus patient postcards compared to physician reminders (posters of vaccination uptake in clinic) only had non-significant changes. Facilitators working with physicians on prevention measures including influenza vaccination compared to no intervention significantly increased immunisation rate in the majority of studies (2 of 3). Educational reminders, academic detailing and peer comparisons compared to mailed educational materials had non-significant changes on the immunisation rate (1 study), as did education and feedback to physicians compared to chart review and feedback (2 studies). Financial incentives to physicians compared to none significantly increased immunisation rate (2 studies). | | | |
| ***Effectiveness statements:***  There is insufficient evidence that participant reminders (postcard) improve community demand for influenza immunisation – results are mixed. There was some evidence that tailored reminders (letter postcard or phone call); participant reminder and recall (telephone invitation); home visit plus vaccination; free vaccination offer; facilitators working with physicians and financial incentives to physicians all improve immunisation demand - they are generally effective. There was insufficient evidence to determine the effectiveness of participant reminder and recall (telephone call and education brochure; letter and leaflet; or customised letter); group visits plus offer to vaccinate or home visits with vaccination encouragement in combination with GP care plan; or physician reminders (posters of vaccination uptake in clinic) plus patient postcard interventions and education feedback to physicians. There is insufficient evidence that physician reminders alone improve immunisation rate – they are generally ineffective. | | | |

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| **van Eijken 2003** | | | |
| ***Interventions to improve medication compliance in older patients living in the community: a systematic review of the literature***  **Maps to: Supporting behaviour change, Improving quality** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Single generalised intervention vs control | Adherence | 13 ints | 3 ints significant increase; 2 ints non-significant increase; 5 ints non-significant difference; 3 int increase (2) or no difference (significance unknown) |
| Multifaceted generalised intervention vs control | Adherence | 3 ints | 1 int significant increase; 2 ints non-significant changes |
| Multifaceted tailored intervention vs control | Adherence | 7 ints | 3 ints significant increase; 2 ints non-significant increase; 1 int non-significant change; 1 int non-significant decrease |
| ***Summary of results:***  A minority of single interventions (5 of 13) showed improved adherence compared to control, and 3 were significant. A minority (1 of 3) of multifaceted generalised interventions significantly improved adherence. Almost half (3 of 7) multifaceted tailored interventions found significant improvements in adherence. Proportionately more multifaceted interventions improved adherence compared to single interventions; and proportionately more tailored interventions improved adherence compared to generalised interventions. | | | |
| ***Effectiveness statements:***  There is some evidence that multifaceted tailored interventions increase medicines adherence among older people in the community - results are mixed. There is insufficient evidence to support the use of generalised multifaceted interventions and single interventions among older people to increase adherence - they are generally ineffective. There is some evidence that multifaceted interventions improve adherence more than single interventions and tailored more than generalised interventions. | | | |

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| **Van Wijk  2005** | | | |
| ***Effectiveness of interventions by community pharmacists to improve patient adherence to chronic medication: a systematic review***  **Maps to: Providing information or education, Support** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Community pharmacist delivered education, monitoring, medicines/chart review and/or counselling vs usual care | Adherence (self-report) | 7 | 5 studies non-significant changes; 2 studies significant increase at follow-up (6 months and longer) with intervention |
| Community pharmacist delivered education, monitoring, medicines review and/or counselling vs usual care | Adherence - pill counts | 5 | 4 studies non-significant changes; 1 study significant increase with intervention |
| Community pharmacist delivered education, monitoring, and/or counselling vs usual care | Adherence - pharmacy records | 4 | 2 studies non-significant changes; 2 studies significant increase with intervention |
| Community pharmacist delivered monitoring and counselling vs usual care | Adherence - medication event monitoring system | 1 | Significant increase with intervention |
| ***Summary of results:***  A minority of studies (6 of 17) reported significant improvements in adherence to chronic medicines with interventions delivered by community pharmacists, compared with usual care. Effects of the range of different interventions assessed were mixed overall: both positive and no effects on adherence were found for interventions delivered individually or in combination, and including patient education and counselling at each prescription refill, monthly counselling and monitoring, encouragement and reward for adherence, incorporation of patients' questions into counselling, or chart review or problem identification. | | | |
| ***Effectiveness statements:***  There is insufficient evidence that community pharmacist interventions improve patient adherence to chronic medicines - they are generally ineffective. | | | |

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| **Vergouwen 2003** | | | |
| ***Improving adherence to antidepressants: a systematic review of interventions***  **Maps to: Providing information or education, Supporting behaviour change, Support, Improving quality** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Education vs usual care (outpatient) | Adherence | 4 | 3 studies non-significant changes; 1 study significant increase compared to verbal information only |
| Depression | 1 | Significant increase; adherence not measured |
| Dosage and frequency vs usual care | Adherence | 1 | Significant increase with choice of frequency |
| Collaborative (primary care) vs usual care | Adherence | 11 | 9 studies significant increase; 2 studies non-significant changes |
| Depression | 11 | 10 studies significant reduction; 1 study non-significant changes |
| Education (primary care) vs usual care | Adherence | 3 | 3 studies non-significant changes |
| Depression | 3 | 2 studies significant reduction; 1 study non-significant change |
| ***Summary of results:***  Outpatient setting: A minority of studies (1 of 4) comparing education with usual care found significant increases in antidepressant medicines adherence - symptoms of depression were not measured.  Another study comparing education to verbal information only significantly reduced depression, but adherence was not measured. Significantly improved adherence was found when patients actively chose their dosage regimen. Primary care setting: There was no significant difference in adherence in 3 of 3 studies evaluating education; and the majority of studies (9 of 11) evaluating collaborative care significantly improved adherence when compared with usual care. Symptoms of depression were improved in the majority of primary care studies (2 of 3 for education, and 10 of 11 for collaborative care). | | | |
| ***Effectiveness statements:***  There is some evidence that collaborative care interventions in primary care settings improve both adherence and depression - they are generally effective. There is insufficient evidence to support the use of educational interventions in primary care or outpatient settings - they are generally ineffective. There is some evidence that educational interventions in an outpatient setting using combined written and verbal information, or involving patient choice of dose regimen, improves adherence; but insufficient evidence to reduce depression. | | | |

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| **Vermeire 2005** | | | |
| ***Interventions for improving adherence to treatment recommendations in people with type 2 diabetes mellitus***  **Maps to: Providing information or education, Acquiring skills and competencies, Supporting behaviour change** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Education/facilitation vs usual care | Clinical outcome | 14 | Significant reduction |
| Nurse led interventions vs usual care | Adherence | 1 | Non-significant changes |
| Clinical outcome | 2 | 1 study significant reduction; 1 study significant reduction and non-significant changes |
| Home aides versus usual care | Clinical outcome | 1 | Reduction (significance unknown) |
| Diabetes education campaigns vs usual care/other intervention | Adherence | 1 | Increase (significance unknown) |
| Clinical outcomes | 4 | 2 studies reduction (significance unknown); 2 studies non-significant changes |
| Pharmacy-based interventions vs usual care | Adherence | 1 | Significant increase in medication possession ratio |
| Clinical outcomes | 3 | 1 study significant reduction; 1 study significant reduction and non-significant changes; 1 study reduction unknown |
| Dosing and frequency interventions | Adherence | 2 | 1 study significant increase with only once daily; 1 study increase with once daily (significance unknown) |
| Clinical outcome | 1 | Significant reduction and non-significant changes |
| Patient participation vs routine counselling | Clinical outcome | 1 | Reductions (significance unknown) |
| Oral vs injectable insulin | Adherence | 1 | Non-significant changes |
| ***Summary of results:***  Meta-analysis for education/facilitation interventions from 3 to 48 months showed a significant decrease in glycosylated haemoglobin (clinical outcome). Separate meta-analysis for nurse-led, pharmacy-based and diabetes educator-led interventions also showed significant decreases. A minority of studies (3 of 8) reported significant increases in adherence: 2 of 2 studies that decreased dosing from 3 to 1 or 2 times daily and 1 of 2 pharmacy-based interventions. This latter pharmacy-based intervention showed improvement in adherence and clinical outcomes. One study of oral versus injectable therapy reported an increase in patient satisfaction but no effect on adherence. Another study of diabetes education reported increased knowledge but no effect on glycosylated haemoglobin. None of the included studies assessed major outcomes such as mortality or morbidity, and only 1 study reported on economic outcomes and quality of life. | | | |
| ***Effectiveness statements:***  There is insufficient evidence to support the use of interventions to improve adherence to treatment in people with type 2 diabetes - they are generally ineffective. There is some evidence that these interventions improve clinical outcomes - results are mixed - nurse-led interventions, home aides and diabetes education are generally effective in improving clinical outcomes. | | | |

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| **Volmink 2007** | | | |
| ***Directly observed therapy for treating tuberculosis***  **Maps to: Supporting behaviour change, Minimising risks or harms** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Directly observed therapy (DOT) vs self-administration of treatment | Cure | 4 | Non-significant increase |
| Cure or completion of treatment | 4 | Non-significant increase |
| Completion of treatment | 1 | Non-significant increase |
| DOT (home) vs self-administration of treatment | Cure | 3 | Significant increase, ARI = 6 more people out of 100 (95% CI: 1 to 11 more) |
| Cure or completion of treatment | 3 | Significant increase, ARI = 6 more people out of 100 (95% CI: 1 to 11 more) |
| DOT (clinic) vs self-administration of treatment | Cure | 2 | Non-significant decrease |
| Cure or completion of treatment | 2 | Non-significant decrease |
| DOT home vs DOT clinic | Cure or completion of treatment | 1 | Non-significant increase when at home |
| DOT (home) family member vs DOT (home) community health worker | Cure or completion of treatment | 1 | Non-significant decrease with community health worker |
| DOT for prophylaxis in IV drug users DOT vs IV drug users self-administration | Completion of treatment | 1 | Non-significant increase |
| DOT for prophylaxis where IV drug users choose own location vs IV drug users treatment centre | Completion of treatment | 1 | Non-significant decrease when attending centre |
| ***Summary of results:***  There were no significant differences in cure, cure/completion of treatment, or completion of treatment alone between directly observed therapy (DOT) and self-administration. There was a small but significant difference between DOT (home) versus self-administration, on cure and completion rates favouring DOT at home. There were no significant differences in cure or completion of treatment whether DOT was provided by a family member or a health worker. There were no significant differences in cure or completion of treatment between DOT for prophylaxis and self-administration. No trials measured the effect of DOT on patients keeping their outpatient appointments while taking treatment. | | | |
| ***Effectiveness statements:***  There is insufficient evidence that DOT improves completion of treatment in people with tuberculosis or latent tuberculosis - it is generally ineffective. Although there may be a small benefit of DOT provided at home, compared with self-administration, there is insufficient evidence to determine if one form of DOT (eg provided at home or in clinics, or provided by family members or healthcare workers) is more effective than another. | | | |

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| **Wright 2006** | | | |
| ***Hospital inpatient self-administration of medicine programmes: a critical literature review***  **Maps to: Acquiring skills and competencies, Minimising risks or harms, Providing information or education, Support, Supporting behaviour change** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Self-administration programme vs control | Adherence | 12 | 4 studies non-significant changes; 4 studies significant increases; 2 studies increases (significance unknown); 2 studies effects unclear |
| Knowledge | 16 | 6 studies significant increase; 5 studies increase (significance unknown); 2 studies non-significant changes; 2 studies increase over time (significance unknown); 1 study effects unclear |
| Medicines errors | 8 | 1 study significant reduction; 2 studies effects unclear; 1 study reduction; 1 study increase (significance unknown); 2 studies non-significant changes; 1 study significant reduction in total errors but non-significant changes serious errors |
| Satisfaction | 17 | Mixed effects: 12 studies effects were unclear in comparison to control group but generally high levels of satisfaction were reported with interventions; 3 studies increase (significance unknown); 2 studies mixed effects |
| ***Summary of results:***  A minority of studies showed significantly improved knowledge (6 of 16 studies) and adherence (4 of 12 studies) with self-administration programmes, compared with control. There were no clear effects of self-administration programmes on medicines errors or satisfaction in comparison with control. | | | |
| ***Effectiveness statements:***  There is insufficient evidence from trials that self-administration programmes improve medicines knowledge, adherence, errors or satisfaction — they are generally ineffective. There is insufficient evidence to determine the effects of self-administration programmes on health outcomes, treatment failure, or on resource or service use. | | | |

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| **Yankova 2008** | | | |
| ***Patients' knowledge of patient controlled analgesia (PCA) and their experience of postoperative pain relief: a review of the impact of structured preoperative education***  **Maps to: Providing information or education, Acquiring skills and competencies** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Structured patient-controlled analgesia (PCA) education vs routine PCA education | Knowledge of PCA | 4 | Significant increases |
| Pain scores | 5 | 1 study significant improvement; 4 studies non-significant changes |
| ***Summary of results:***  All studies reporting knowledge reported significantly higher knowledge (4 studies) with structured PCA education, compared with routine PCA education. In comparison, pain control was significantly improved in only a minority of studies (1 of 5), when structured and routine education were compared. | | | |
| ***Effectiveness statements:***  There is some evidence that structured, compared with routine, PCA education improves knowledge — it is generally effective. There is insufficient evidence that structured PCA education improves postoperative pain control compared to routine education — it is generally ineffective. | | | |

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| **Zygmunt 2002** | | | |
| ***Interventions to improve medication adherence in schizophrenia***  **Maps to: Providing information or education, Facilitating communication and/or decision making, Supporting behaviour change, Support** | | | |
| **Intervention & comparison** | **Outcome** | **No. of studies or interventions (int)\*** | **Results** |
| Individual interventions vs standard care (or non-specific counselling) | Adherence | 4 | 2 studies significant increase; 2 studies non-significant changes |
| Group interventions vs standard care (or social skills training) | Adherence | 4 | 1 study significant increase; 3 studies non-significant changes |
| Family interventions vs standard care (or other intervention) | Adherence | 12 | 3 studies significant increase; 9 studies non-significant changes |
| Community-based interventions vs standard care (or other intervention) | Adherence | 10 | 4 studies significant increases; 6 studies non-significant changes |
| Multimodal psychosocial interventions vs standard care | Adherence | 6 | 2 studies significant increase; 2 studies increase (significance unknown); 2 studies non-significant changes |
| Multimodal psychosocial interventions vs other intervention | Adherence | 3 | 1 study significant increase; 2 studies non-significant changes |
| ***Summary of results:***  Only a minority of single or multimodal psychosocial interventions in schizophrenia, such as individual interventions (2 of 4), group interventions (2 of 4) and family therapy (3 of 12), community based interventions (4 of 10), mixed interventions and comparisons (5 of 9) improved adherence to antipsychotics. Little relationship was found between intensity of intervention and improvement in adherence. Five of the 9 studies that had a specific goal to improve adherence improved it. | | | |
| ***Effectiveness statements:***  There is insufficient evidence to support the use of psychosocial interventions, delivered either as single or multicomponent interventions, to improve adherence to antipsychotic medicines when compared with standard care or with other interventions - they are generally ineffective. | | | |