Results of included reviews (by review, alphabetical)

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	Medicine use - brand	1	Relative decrease = 29%

policy	medicines		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.			

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	Adherence score	1	Non-significant reduction

interviewing vs usual care	% 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.

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.

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.

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	2 ints	2 ints significant decrease, range

	expenditure		= 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	Overall medicines use	1 int	1 int mixed effects: significant decreases were seen women's use of drugs across medicines,

plus coinsurance and ceiling vs fixed co-payment plus coinsurance			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.

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.

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.

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.

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.

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	Number of patients with	4	ARR = 11 fewer patients out of

monitoring action plans vs peak flow action plans	at least one acute care visit		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.			

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.			

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.

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,	1	Non-significant changes

	allergy, drug-drug interaction, unnecessary therapy duplication, omitted therapy)		
	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.

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.			

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,	Medicines knowledge	1	Significant increase
	Medicines adherence	1	Non-significant changes

behaviour) intervention (before and after assessment; no control group)			
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.

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.

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.

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.

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.

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.

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.

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	Number of missed pills (1 & 3 months)	1	Non-significant increase

reminders			
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).

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.

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-	Adherence to medicines or health promotion activities	2	No changes (improvements or worsening)

management vs control			
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.			

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.

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.

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.			

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.

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	2	1 study non-significant increase; 1

	isoniazid - completed therapy		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.

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.

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.

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.

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.

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.

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.			

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.			

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**	**Results**

		(int)*	
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.

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.

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.

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.

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.

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.

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.

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.

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	Ratings of information	1	Significant increase with usual

another: usual wording versus simplified wording or professional wording formats			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.

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**	**Results**

		(int)*	
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.

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.

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.

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.

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.			

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	DPT3 uptake	1	Significant increase, ARI = 20

(facility based plus redesigned immunisation card) vs routine immunisation			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.

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.

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	Ceased use (post intervention)	1	Non-significant increase

substitutive pharmacotherapy vs abrupt withdrawal plus placebo			
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.

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.

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	Proportion of patients receiving antibiotics	3 ints	Absolute reductions, range = 7.9 to 24.0% lower
	Health service use	2 ints	Non-significant changes

plus audit feedback vs control	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.

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.

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.

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.

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.

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.

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.

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.			

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	1	Non-significant increase

	(user)		
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/	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)

education (vs control or BA)			
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.

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:	4	2 studies significant decrease with

	diarrhoea		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.

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	Repeated patient	2	Increase with intervention

promoting doctor-patient communication: training seminars for doctors vs no seminar	complaint		(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	Number of medicines questions asked	1	Non-significant change
	Information tailored to patient	1	Increase with intervention (significance unclear)

question asking (no control)			
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.

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.			

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	Community immunisation demand	1	Non-significant reduction

recall (letter and leaflet) vs letter			
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	Immunisation access	2	2 studies significant increases, ARI range = 28 to 47 more

intervention			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	Immunisation rate	2	1 study significant increase, 1

feedback to physicians vs chart review and feedback			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.

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.

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.			

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**	**Results**

		interventions (int)*	
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.			

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	Adherence	1	Non-significant changes
	Clinical outcome	2	1 study significant reduction; 1

usual care			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.

Volmink 2007

Directly observed therapy for treating tuberculosis

Maps to: Supporting behaviour change, Minimising risks or harms

Intervention & comparison	**Outcome**	**No. of studies or**	**Results**

		interventions (int)*	
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.

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.

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.

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	Adherence	10	4 studies significant increases; 6 studies non-significant changes

standard care (or other intervention)			
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.			