Appendix C1 – Completed methodology checklists: economic evaluations and economic evidence tables presenting findings

Completed methodology checklists: economic evaluations

Review Area 1: Transitions for people with mental health difficulties

8a) What is the impact of specific interventions to support people with mental health difficulties during transition from general inpatient hospital settings to community or care home settings?

8b) What is the impact of specific interventions to support people with mental health difficulties during admission to general inpatient hospital settings from community or care home settings?

Davis KK, Mintzer M, Dennison Himmelfarb CR, Matthew JH, Rotman S, Allen J (2012) Targeted intervention improves knowledge but not self-care or readmissions in heart failure patients with mild cognitive impairment. European Journal of Heart Failure 14: 1041–9	
Guidance topic: Transition between inpatient hospital settings and community or care settings for adults with social care needs	Question No: 8 parts a and b
Checklist, Section 1: Applicability (relevance to specific guideline review question(s) and the NICE reference case). This checklist should be used first to filter out irrelevant studies.	
Is the study population appropriate for the review question?	
Partly	The study population covers a large majority of the relevant population in terms of age; however, individuals were those with heart failure and mild cognitive impairment which is only a small sub-group of the relevant population. Furthermore, and the study took place in another country (US) and the study population had a particular ethnic profile which limited the appropriateness for this review question. In addition, a range of exclusion criteria were applied in this study which altogether also limit the relevance of this population for this review question.
Are the interventions appropriate for the review question?	
Partly	The intervention presented a particular type of self-care and management provided as part case management targeted at people with heart failure and mild cognitive impairment; it seemed that the alternative care was chosen appropriately with the provision of shorter and less comprehensive education (as part of case management) which was likely to reflect good standard care. However, the intervention was hospital focused and there was no evidence of involvement of a social care professional.
1.3 Is the current social care system in which the study was conducted sufficiently similar to the current UK social care context?	
No	The study took place at a large academic hospital in Baltimore USA and was of recent date; it is unlikely that access to hospital care and the type of services provided (especially community services) were similar to the UK so that the effect of the intervention on hospital readmission was unlikely to be transferable to the UK context.
1.4 Are the perspectives clearly stated and what are they?	
Not applicable	This was not an economic evaluation and only 1 service outcome (=hospital readmission) was reported which was relevant from a public sector perspective. The perspective of individual service users was considered in terms of outcomes (but not costs) and the perspective of carers was not included (neither outcomes nor costs).
1.5 Are all direct effects on individuals included?	

No	Outcomes to carers were not measured. The study only presented findings on effect of 3 outcomes: self-care, heart failure knowledge and 30-day readmission. The effect on health and psychological wellbeing measures was not reported.
1.6 Are all future costs and outcomes discounted appropriately?	
Not applicable	The study did not attach prices or unit costs to the resource use and outcomes were only measured in the short-term (30 days) so that discounting was not applicable.
1.7 How is the value of effects expressed?	
No	Effects were measured in natural units; for self-care and heart failure knowledge specific (rather than generic health and wellbeing) outcome tools were used which might be appropriate but prevented comparison with findings from other intervention studies for people with mental health needs at the point of transition; although depressive symptoms were measured, the difference in effect was not reported. Service outcomes were not expressed in costs.
1.8 Are costs and outcomes from other sectors (including the value of unpaid care, where relevant) fully and appropriately measured and valued?	
No	Only the findings for 1 service outcome and 2 service user outcomes were reported. Wider health and wellbeing outcomes were not captured. In addition, carers' outcomes and cost of unpaid care were not captured. Similarly, although length of hospital stay and stay in the community before readmission were measured findings on those were not presented. Furthermore, the impact on community care was not captured.
General conclusion	
The study was insufficiently applicable because of its focus on 1 particular sub-group and narrowly measured outcomes (-).	

Goldberg SE, Bradshaw LE, Kearney FC, Russell C, Whittamore KH, Foster PER, Mamza J, Gladman JRF, Jones RG, Lewis SA, Porock D, Harwood RH (2013) Care in specialist medical and mental health unit compared with standard care for older people with cognitive impairment admitted to general hospital: randomised controlled trial (NIHR TEAM trial). British Medical Journal. 347: f4132	
Guidance topic: Transition between inpatient hospital settings and community or care settings for adults with social care needs	Question No: 8 parts a and b
Checklist, Section 1: Applicability (relevance to specific guideline review question(s) and the NICE reference case). This checklist should be used first to filter out irrelevant studies.	

Is the study population appropriate for the review question?	
Partly	The study population is an important sub-group of the population specified in the scope as it refers to a particular frail group of older people (cognitive impairment, mean age 85 years, reaching end of life). Positively, the study covered diagnosed as well undiagnosed cases of dementia and older people who live in a care home as well as those living in their own home. However, the study failed to differentiate between people with cognitive impairment and those with other mental health needs (such as depression) which makes the study population less appropriate for the review question. Furthermore, this study only looked at people who did not require the need for other specialist care so that a potentially important group of people with severe coexisting physical health needs was not considered.
Are the interventions appropriate for the review question?	
Partly	The intervention is a particular form of specialist mental health care provided in a hospital setting and is compared with what is likely to be good practice (=trained health care staff and additional mental health support available on request). A range of important alternatives for providing specialist mental healthcare for older people with cognitive impairment exist (such as case management) which were not included in the study so that the study only addressed a small part of the review question. The involvement of social care professionals was not mentioned.
1.3 Is the current social care system in which the study was conducted sufficiently similar to the current UK social care context?	
Yes	Individuals were recruited from a large British NHS hospital responsible for emergency medical care. The study was of recent date.
1.4 Are the perspectives clearly stated and what are they?	
Not applicable	This was not a full economic evaluation but an effectiveness study that measured individuals (service users and carers) and a wide range of service outcomes (such as hospital readmission) which are relevant from a public sector perspective.
1.5 Are all direct effects on individuals included?	
Yes	A wide range of individual, service and carers outcomes were captured comprehensively.
1.6 Are all future costs and outcomes discounted appropriately?	
Not applicable	This study did not attach unit costs to resource use and outcomes were measured only within a short time period (90 +/-7 days) so that discounting was not applicable.
1.7 How is the value of effects expressed?	
Yes	Outcomes to service users were expressed in utility (EQ-5D) and outcomes to carers were measured via the GHQ which is a generic measure that has been used in some studies to generate utilities. Service outcomes were presented in natural units

	(rather than in costs).
1.8 Are costs and outcomes from other sectors (including the value of unpaid care, where relevant) fully and appropriately measured and valued?	
No	Importantly, the use of community care packages was not incorporated. Outcomes to carers were valued but information was not provided about hours of unpaid care.
General conclusion	
The study was sufficiently applicable (+).	
Section 2: Study limitations (the level of methodological quality)	
2.1 Does the model structure adequately reflect the nature of the topic under evaluation?	
Not applicable	This was not a modelling study but a randomised controlled trial.
2.2 Is the time horizon sufficiently long to reflect all important differences in costs and outcomes?	
Partly	The study had a relatively short time horizon of 3 months and it was possibly that not all relevant cost (service use) and outcomes could be captured in this time period.
2.3 Are all important and relevant outcomes included?	
Yes	Outcomes to patients and carers were captured comprehensively using appropriate standardised tools such as the EQ-5D and GHQ.
2.4 Are the estimates of baseline outcomes from the best available source?	
Yes	Baseline outcomes data were collected as part of the randomised controlled trial.
2.5 Are the estimates of relative intervention effects from the best available source?	
Partly	Data were collected as part of randomised controlled trial at baseline and 90 days follow up; however some patients were recruited after randomisation which led to baseline differences; comprehensive statistical analysis was carried out to adjust for potential baseline differences.
2.6 Are all important and relevant costs included?	
No	Costs were not evaluated; instead a wide range service use outcomes were measured at baseline and follow up including days spent at home, return to home, risk of care home admission, and risk of hospital readmission. The impact on hours of

	unpaid care was not measured.
2.7 Are the estimates of resource use from the best available source?	
Yes	Service use outcomes were collected at baseline and 90 days follow-up.
2.8 Are the unit costs of resources from the best available source?	
Not applicable	The study only evaluated service use outcomes and did not evaluate costs.
2.9 Is an appropriate incremental analysis presented or can it be calculated from the data?	
Not applicable	This study was not an economic evaluation; service use outcomes were measured only in natural units.
2.10 Are all important parameters whose values are uncertain subjected to appropriate sensitivity analysis?	
Not applicable	This was a randomised controlled trial. Authors carried out subgroup analysis to investigate whether outcomes differed for specific groups.
2.11 Is there any potential conflict of interest?	
No	The research was independently funded by the UK National Institute for Health Research (NIHR); researchers were from independent, academic institutions and declared no competing interests.
2.12 Overall assessment	
The study was of moderate quality with some potentially serious limitations (+).	

Review Area 2: Transitions for people with end of life care needs

9a) What is the impact of specific interventions to support people with end of life care needs during transition from inpatient hospital settings to community or care home settings, including hospices?

9b) What is the impact of specific interventions to support people with end of life care needs during admission to inpatient hospital settings from community settings including care homes and hospices?

Brody AA, Ciemins E, Newman J, Harrington C (2010) The effects of an inpatient palliative care team on discharge disposition. Journal of Palliative Medicine 13: 541–8	
Guidance topic: Transition between inpatient hospital settings and community or care settings for adults with social care needs	Question No: 9 parts a and b
Checklist, Section 1: Applicability (relevance to specific guideline review question(s) and the NICE reference case) This checklist should be used first to filter out irrelevant studies.	
Is the study population appropriate for the review question?	
Partly	The population was appropriate in the sense that it referred to the whole hospital population seen by a palliative care team during a 2-year period and a group of matched individuals with similar characteristics based on age, diagnostics and hospital history. Appropriateness (of the matched control group) was limited because other characteristics (such as socioeconomic ones) were not considered. Furthermore, it was not reported how people were referred to the palliative care team which could mean that there was (self-) selection bias.
Are the interventions appropriate for the review question?	
Partly	Specialist palliative care team in hospital was a relevant intervention for this review question although the role of social care professionals is not specifically mentioned. Other important alternative provisions such as advanced care planning and palliative home care team were not considered. The comparison was made only against routine care for which no further detail was provided.
1.3 Is the current social care system in which the study was conducted sufficiently similar to the current UK social care context?	
No	The study was conducted in San Francisco, USA, and was not of recent date so that applicability to the current UK social care context was limited.
1.4 Are the perspectives clearly stated and what are they?	
Not applicable	This was not an economic evaluation but an effectiveness study which measured a number of relevant service outcomes reflecting a public sector perspective. The perspective of individual service users or carers was not reflected.
1.5 Are all direct effects on individuals included?	
No	The direct effects on health and wellbeing of individuals (including carers) or whether they died in the place they wished were not measured.
1.6 Are all future costs and outcomes discounted appropriately?	

Not applicable	The study only presented some resource use implications without attaching unit costs and outcomes to individuals were not captured so that discounting was not applicable.
1.7 How is the value of effects expressed?	
Not applicable	Only effects on service use were measured which were expressed in natural units.
1.8 Are costs and outcomes from other sectors (including the value of unpaid care, where relevant) fully and appropriately measured and valued?	
No	Outcomes on individuals (service users and carers) were not measured. There was also no indication whether there were important differences in costs to individuals and carers (such as out-of-pocket expenditure).
General conclusion	
The study was insufficiently applicable (-).	

Hatziandreu E, Archontakis F, Daly A in conjunction with the National Audit Office (2008) The potential cost savings of greater use of home and hospice-based end of life care in England, Technical Report, prepared for the National Audit Office, RAND Europe, Cambridge	
Guidance topic: Transition between inpatient hospital settings and community or care settings for adults with social care needs	Question No: 9 parts a and b
Checklist, Section 1: Applicability (relevance to specific guideline review question(s) and the NICE reference case) This checklist should be used first to filter out irrelevant studies.	
Is the study population appropriate for the review question?	
Yes	The population refers to patients with cancer and with organ failure due to hear and respiratory diseases
Are the interventions appropriate for the review question?	
No	The study investigates the economic impact of investing more money into palliative care generally and does not look into different type of palliative care provision; although the literature review presents effectiveness findings on palliative care teams these data do not feed into the modelling. It is not made explicit how palliative care refers to the discharge process and to hospital readmission.

1.3 Is the current social care system in which the study was conducted sufficiently similar to the current UK social care context?	
Yes	The literature review was carried out internationally; however, the focus was on UK. Data in the modelling were taken from England.
1.4 Are the perspectives clearly stated and what are they?	
Partly	For the modelling, it is stated that the perspective of the taxpayer is taken and that the costs of informal care were not considered. It is not clear whether all health and social care services were included.
1.5 Are all direct effects on individuals included?	
Not applicable	The economic analysis is a cost savings analysis; in the literature review it was found that palliative care had positive end of life care outcomes and cost savings analysis is seen as an appropriate approach for economic analysis of end of life care.
1.6 Are all future costs and outcomes discounted appropriately?	
Not applicable	The analysis is concerned only with the last year in life.
1.7 How is the value of effects expressed?	
Yes	The economic analysis is a cost savings analysis and effects on service use are expressed in monetary units.
1.8 Are costs and outcomes from other sectors (including the value of unpaid care, where relevant) fully and appropriately measured and valued?	
No	Unpaid or informal care and out-of-pocket expenditure were not considered in the analysis.
General conclusion	
The study was not sufficiently applicable, in particular because the study did not examine different types of palliative care and did not directly relate to the interface with hospitals (-).	

Higginson IJ, McCrone P, Hart SR, et al (2009) Is short-term palliative care cost-effective in multiple sclerosis? A randomized phase II trial. Journal of Pain and Symptom Management 38: 816–26	
Guidance topic: Transition between inpatient hospital settings and community or care settings for adults with social care needs	Question No: 9 parts a and b
Checklist, Section 1: Applicability (relevance to specific guideline review question(s) and the NICE reference case) This checklist should be used first to filter out irrelevant studies.	

Is the study population appropriate for the review question?	
Yes	People with MS who have palliative care needs; excluded were people with very urgent needs or rapid deterioration as those needed to be immediately referred. This group is a relatively small sub-group of the population relevant to the review question but people with MS experience a particularly heavy burden during the advanced stages of the disease and end of life care for this group might be appropriate for other groups too.
Are the interventions appropriate for the review question?	
Yes	The intervention is a multidisciplinary team based in a large teaching hospital similar to palliative care consultation service but worked in both hospital and the community so could visit patients where they were; team included psychosocial worker and addressed social care needs such specialist welfare benefits advice, bereavement problems, etc.
1.3 Is the current social care system in which the study was conducted sufficiently similar to the current UK social care context?	
Yes	The study took place in South London was of a fairly recent date.
1.4 Are the perspectives clearly stated and what are they?	
Yes	It is stated that the perspective was ‘broad’ including costs to health, social, and voluntary services, and informal caregivers.
1.5 Are all direct effects on individuals included?	
Yes	The Palliative Care Outcomes Scale (POS-8) was applied as clinical tool which captures anxiety, patient and carer concerns and practical needs and pain; caregiver’s burden was measured using the Zarit Carer Burden Inventory; in addition, the patient's functional status was measured via the self-completed United Kingdom Neurological Disability Scale and via interviewer-assessed Expanded Disability Status Scale.
1.6 Are all future costs and outcomes discounted appropriately?	
Not applicable	The study had only a short time horizon of less than a year.
1.7 How is the value of effects expressed?	
Yes	A range of primary and secondary outcomes were measured.
1.8 Are costs and outcomes from other sectors (including the value of unpaid care, where relevant) fully and appropriately measured and valued?	
Partly	The study measures relevant outcomes across a health, social care and the voluntary sector and captured unpaid care and caregiver’s burden. However, it did not capture out-of-pocket expenditure and impact on productivity which is likely to be relevant for carers of people with MS.

General conclusion	
The study was sufficiently applicable (+).	
Section 2: Study limitations (the level of methodological quality)	
2.1 Does the model structure adequately reflect the nature of the topic under evaluation?	
Not applicable	This was an economic evaluation carried out alongside a randomised controlled trial.
2.2 Is the time horizon sufficiently long to reflect all important differences in costs and outcomes?	
Unclear	The time horizon was chosen fairly shortly because of ethical considerations; it is possible that not all relevant differences in costs and outcomes were reflected but it was not clear whether this would be appropriate/feasible.
2.3 Are all important and relevant outcomes included?	
Yes	Outcomes to patients and carers were captured comprehensively using appropriate standardised tools (see Section 1.5)
2.4 Are the estimates of baseline outcomes from the best available source?	
Yes	Baseline outcomes data were collected before randomisation.
2.5 Are the estimates of relative intervention effects from the best available source?	
Yes	From randomised controlled trials collected at different time points (6 and 12 weeks) before intervention was also offered to control group.
2.6 Are all important and relevant costs included?	
Partly	All important public sector costs were included but costs to individuals in form of out-of-pocket expenditure and productivity (of carers) were not included.
2.7 Are the estimates of resource use from the best available source?	
Yes	Data regarding the use of health and social services in the previous 3 months were collected at each interview using a standard schedule that had been used in a palliative care context before.
2.8 Are the unit costs of resources from the best available source?	
Yes	Unit costs for services were taken from the PSSRU Compendium Unit costs of health and social care (2005); unpaid care was valued with the unit costs of a home care worker.

2.9 Is an appropriate incremental analysis presented or can it be calculated from the data?	
Yes	Cost-effectiveness planes were developed for the 2 clinical outcomes.
2.10 Are all important parameters whose values are uncertain subjected to appropriate sensitivity analysis?	
Yes	Bootstrapping was applied to explore uncertainty around cost-effectiveness estimates and sensitivity analysis for different ways of handling missing data (last value carried forward, next value carried backward, and mean value).
2.11 Is there any potential conflict of interest?	
Unclear	The funding was funded by MS Society.
2.12 Overall assessment	
The study was of high quality with only minor limitations (++).	

Higginson IJ, Bausewein C, Reilly CC, Gao W, Gysels M, Dzingina M, McCrone P, Booth S, Jolley CJ, Moxham, J (2014) An integrated palliative and respiratory care service for patients with advanced disease and refractory breathlessness: a randomised controlled trial. Lancet Respiratory Medicine 2: 979–87	
Guidance topic: Transition between inpatient hospital settings and community or care settings for adults with social care needs	Question No: 9 parts a and b
Checklist, Section 1: Applicability (relevance to specific guideline review question(s) and the NICE reference case) This checklist should be used first to filter out irrelevant studies.	
Is the study population appropriate for the review question?	
Yes	The population covers people with a diverse range of advanced and deteriorating conditions in which breathlessness progressively increased up to death. Refractory breathlessness is the second most common symptom after pain in patients with advanced chronic disease so that the population is highly relevant to the review question.
Are the interventions appropriate for the review question?	
Partly	The intervention is a multidisciplinary team that is available to patients who met the inclusion criteria independently of the setting which included hospitals as well as GP surgeries. End of life populations typically have social care needs and the intervention aims to meet a wide range of needs including social care related ones.

1.3 Is the current social care system in which the study was conducted sufficiently similar to the current UK social care context?	
Yes	The study took place in South London and is of very recent date.
1.4 Are the perspectives clearly stated and what are they?	
No	This paper focused on presenting the clinical outcomes and details on costs were not provided although the tool used to collect cost data was a comprehensive, standardised tool for capturing health, social care and voluntary sector services.
1.5 Are all direct effects on individuals included?	
Yes	The primary outcome was breathlessness mastery at 6 weeks as recorded in the 6 week face-to-face interview, determined according to 1 domain of the quality of life measure, the Chronic Respiratory Disease Questionnaire. Secondary outcomes included: severity of breathlessness on exertion in the previous 24 h, activity (assessed by London Chest Activity of Daily Living questionnaire), other domains of the Chronic Respiratory Disease Questionnaire (breathlessness, fatigue and emotional function), quality of life (EQ-5D), palliative needs (assessed by Palliative care Outcome Scale), depression and anxiety (measured by the Hospital Anxiety and Depression Scale [HADS]), and spirometry. In addition the study included survival estimates.
1.6 Are all future costs and outcomes discounted appropriately?	
Not applicable	The time horizon was less than 1 year.
1.7 How is the value of effects expressed?	
Yes	A range of primary and secondary outcomes were measured.
1.8 Are costs and outcomes from other sectors (including the value of unpaid care, where relevant) fully and appropriately measured and valued?	
No	Out-of-pocket expenditure, the impact of unpaid care and carers' outcomes were not included.
General conclusion	
The study was not sufficiently applicable as an economic evaluation because it did not report on the details of the cost evaluation. The study had high reporting quality on outcomes (-).	

Smith S, Brick A, O'Hara S, Normand C (2014) Evidence on the cost and cost-effectiveness of palliative care: a literature review. Palliative Medicine 28:130–50

Guidance topic: Transition between inpatient hospital settings and community or care settings for adults with social care needs	Question No: 9 parts a and b
Checklist, Section 1: Applicability (relevance to specific guideline review question(s) and the NICE reference case) This checklist should be used first to filter out irrelevant studies.	
Is the study population appropriate for the review question?	
Yes	The population covers patients with terminal illness at the end of life; many of the studies included refer to cancer patients.
Are the interventions appropriate for the review question?	
Yes	The review examines palliative care interventions in any setting (e.g. hospital-based, home-based and hospice care). The review did not provide detail on the transition aspect but it was likely that because of the nature of this topic the majority of interventions also covered transitions between different settings.
1.3 Is the current social care system in which the study was conducted sufficiently similar to the current UK social care context?	
Partly	The review was international and included mainly studies from the US and only 2 UK studies which were published between 2002 and 2011.
1.4 Are the perspectives clearly stated and what are they?	
Partly	The main focus of studies was on direct costs, from the provider or third-party payer perspective, with little focus on informal care or out-of-pocket costs. The vast majority of studies measured costs as they occurred to the hospital but a few studies also included wider health and social care costs and a couple included unpaid care or out-of-pocket expenditure.
1.5 Are all direct effects on individuals included?	
No	With the exception of 1 study which was a cost-effectiveness study, studies measured only costs so that direct effects were not included.
1.6 Are all future costs and outcomes discounted appropriately?	
Unclear	The vast majority of studies only had a short time horizon so that discounting was not necessary; 2 studies had a time horizon of several years and it was not reported whether those studies had used discounting.
1.7 How is the value of effects expressed?	
No	Nineteen studies measured service use outcomes which were typically expressed in natural units.
1.8 Are costs and outcomes from other sectors (including the value of unpaid care, where relevant) fully and appropriately measured and	

valued?	
No	Only 2 studies measure the impact on unpaid care and 1 of the 2 studies also measured out-of-pocket expenditure.
General conclusion	
The study was insufficiently applicable (-).	

Review Areas 3, 4 & 5: Hospital admission and discharge planning and reducing 30-days readmission, geriatric assessment and care planning

5) How do different approaches to care planning and assessment affect the process of admission to inpatient hospital settings from community or care home settings?

6) What is the effectiveness of interventions and approaches designed to improve the transfer of care from hospital?

7) What is the effectiveness of interventions and approaches designed to reduce hospital re-admissions within 30 days of hospital discharge?

Categorised by intervention types

Discharge planning process (different populations and as part of other service provision)

Preyde M, Macaulay C, Dingwall T (2009) Discharge planning from hospital to home for elderly patients: a meta-analysis. Journal of Evidence-Based Social Work 6: 198–216	
Guideline topic: Transition, hospital and community or care settings	
Economic priority area: B, review questions 6 and 7	
Checklist: Section 1	
Is the study population appropriate for the review question?	
Partly	This group covered older people of 65 years and above. This included patients with specific such as heart failure or frailty recruited from a wide range of hospital setting and types. Only a proportion of the population covered in the review had social care needs and the review did not present findings for this group specifically.
Are the interventions appropriate for the review question?	
Partly	This review covered a highly diverse range of interventions that concerned the discharge planning process. This included home follow-up, disease specific interventions, those with an environment and community linkage and medical care/pharmacological ones. There was no further detail provided in regards to the comparison group.
1.3 Is the current social care system in which the study was conducted sufficiently similar to the current UK social care context?	
No	Studies were of older date and the vast majority was not from the UK.
1.4 Are the perspectives clearly stated and what are they?	
Partly	This study is a systematic review that presented cost findings of studies in regards to hospital- and community-based costs. There was insufficient detail to understand which services had been included and whether this was appropriate. Wider societal costs (unpaid care, out-of-pocket expenditure) were not considered.
1.5 Are all direct effects on individuals included?	

Partly	Most studies were randomised controlled trials with data collection periods ranging from 7 days to 2 years although most were between 3 and 6 months. Studies measured a wide range of individual patient and outcomes. Carers' outcomes were primarily considered in form of satisfaction.
1.6 Are all future costs and outcomes discounted appropriately?	
N/A	Studies which incorporated costs did have a time horizon of 1 year or shorter.
1.7 How is the value of effects expressed?	
Yes	In natural units.
1.8 Are costs and outcomes from other sectors (including the value of unpaid care, where relevant) fully and appropriately measured and valued?	
Partly	Patient as well as carers outcomes were measured but the impact on individual costs (out-of-pocket expenditure and unpaid care) was not included.
General conclusion	
The study was not sufficiently applicable; the main limitations were that the review covered a wide range of diverse interventions which made it difficult to interpret the findings on effect sizes and how they related to integration of health and social care (-).	

Saleh SS, Freire C, Gewndolyn MD, Shannon T (2012) An effectiveness and cost-benefit analysis of a hospital-based discharge transition program for elderly Medicare recipients. Journal of the American Geriatrics Society 60: 1051–6	
Guideline topic: Transition, hospital and community or care settings	
Economic priority area: B, review questions 6 and 7	
Checklist: Section 1	
Is the study population appropriate for the review question?	
Partly	The population covered people at discharge; some sub-groups were specifically excluded such as people with severe mental health conditions, care home residents, at end of life, those with planned readmission and with assisted living. It is likely that a proportion of people had social care needs but there was no further detail provided on this.

Are the interventions appropriate for the review question?	
Partly	The intervention was nurse led and included an assessment of social support needs but no further detail is provided on involvement of social care professionals.
1.3 Is the current social care system in which the study was conducted sufficiently similar to the current UK social care context?	
No	The study was of a recent date and carried in the USA. It is unlikely that findings on cost savings are directly transferable to the UK system. In addition, the study referred to the healthcare system rather than social care system.
1.4 Are the perspectives clearly stated and what are they?	
No	This study reflected the perspective of hospital. This perspective was not appropriate to the review question; social care costs were not included. In addition, out-of-pocket expenditure and the costs of unpaid care were not considered. The analysis was a cost savings analysis so that patient or carer outcomes were both captured in the final results.
1.5 Are all direct effects on individuals included?	
No	Only self-management skills of patients were measured but not the wider impact on their health and wellbeing; in addition carers' outcomes were not considered.
1.6 Are all future costs and outcomes discounted appropriately?	
Yes	Discounting was not necessary because of the short time period of 1 year.
1.7 How is the value of effects expressed?	
No	In natural units but effectiveness data were not used for final results (which only included cost savings).
1.8 Are costs and outcomes from other sectors (including the value of unpaid care, where relevant) fully and appropriately measured and valued?	
No	The perspective was the 1 of the hospital and it was a cost savings analysis; no further costs were considered and no outcomes to patients and carers (other than patients' self-management skills which were presented separately).
General conclusion	
This study was not sufficiently applicable to the review question (-).	

Shepperd S, Lannin NA, Clemson LM, McCluskey A, Cameron ID, Barras SL (2013) Discharge planning from hospital to home (review) Cochrane Database of Systematic Reviews Issue 1

Guideline topic: Transition, hospital and community or care settings	
Economic priority area: B, review questions 6 and 7	
Checklist: Section 1	
Is the study population appropriate for the review question?	
Partly	This group covered different study populations most of which were relevant to the review question. This included patients with medical condition, with heart failure, older people admitted to hospital following a fall; 2 studies (out of 24) referred to patients, who were (partly) recruited from psychiatric hospitals. The majority of studies covered older people. Only a proportion of the population covered in the review had social care needs and the review did not present findings for this group specifically.
Are the interventions appropriate for the review question?	
Partly	This review covered a wide range of interventions that concerned the discharge planning process and could be provided as part of other services such as stroke unit care or geriatric assessment. Some interventions addressed social support needs usually through involvement of a social worker or other involvement of social care. Control groups or the description of them varied widely. It is noted by the authors that none of the studies reported on the element of communication between hospital and community services.
1.3 Is the current social care system in which the study was conducted sufficiently similar to the current UK social care context?	
No	Five of 24 trials were UK based; however, none of the UK referred to social care provision. Those studies with social care element were mainly from the US and applicability to the UK context was more uncertain. Most studies were dated (i.e. 2000 or earlier).
1.4 Are the perspectives clearly stated and what are they?	
Partly	This study is a systematic review that presented costs as part of outcome measures. Studies looked at impact on total or parts health care costs and details on elements of costs were provided. Other costs (social care, unpaid care, out-of-pocket expenditure) were not considered.
1.5 Are all direct effects on individuals included?	
Partly	A wide range of resource use and patient outcomes and some carer outcomes were considered. Studies applied different time horizons but insufficient detail was provided on those to come to final conclusion about whether those were likely to be

	sufficiently long to capture all relevant effects.
1.6 Are all future costs and outcomes discounted appropriately?	
Partly	Where detail on time horizons was reported those were short-term (less than 12 months) so that discounting was not necessary.
1.7 How is the value of effects expressed?	
Yes	Resource use outcomes were reported in natural units and patient health outcomes were measured either through generic standardised health measures (EQ-5D or SF-36) or condition-specific tools.
1.8 Are costs and outcomes from other sectors (including the value of unpaid care, where relevant) fully and appropriately measured and valued?	
No	Only costs to the healthcare system were captured; patient as well as carers outcomes were measured but the impact on individual costs (out-of-pocket expenditure and unpaid care) was not included.
General conclusion	
The study was not sufficiently applicable; the main limitation was that the analysis did not refer specifically enough to the social care element in terms of population, interventions and costs (-).	

Stauffer BD, Fullerton C, Fleming N, Ogola G, Herrin J, Stafford PM, Ballard DJ (2011) Effectiveness and cost of a transitional care program for heart failure. Archives of Internal Medicine 171: 1238–43
Guideline topic: Transition, hospital and community or care settings
Economic priority area: B, review questions 6 and 7
Checklist: Section 1
Is the study population appropriate for the review question?

Partly	Hospital patients of 65 years or older with a diagnosis of heart failure; this excluded those who were discharged to a care home or other forms of institutional care; it was likely that a proportion of those had social care needs but there was no further detail provided. This group is likely to present an important sub group of the population covered by the scope.
Are the interventions appropriate for the review question?	
Partly	The intervention was nurse-led and included an assessment of social support needs but no further detail was provided on involvement of social care professionals. The comparison group referred to care management assistance and referral to home healthcare; social care was not mentioned.
1.3 Is the current social care system in which the study was conducted sufficiently similar to the current UK social care context?	
No	The study was of a recent date and carried in the USA. It is unlikely that findings on resource use and cost savings were directly transferable to the UK system. In addition, the study referred to the health care system rather than social care system.
1.4 Are the perspectives clearly stated and what are they?	
No	This study reflected the perspective of hospital. This perspective was not appropriate to the review question; social care costs were not included. In addition, out-of-pocket expenditure and the costs of unpaid care were not considered. The analysis was a cost savings analysis so that patient or carer outcomes were bot captured in the final results.
1.5 Are all direct effects on individuals included?	
No	Only resource use outcomes were measured but no health and wellbeing outcomes for patients and carers.
1.6 Are all future costs and outcomes discounted appropriately?	
Yes	Discounting was not necessary because of the short time period of 60 days.
1.7 How is the value of effects expressed?	
No	In natural units for resource use outcomes; no other effects were measured.
1.8 Are costs and outcomes from other sectors (including the value of unpaid care, where relevant) fully and appropriately measured and valued?	
No	The perspective was the 1 of the hospital and only resource use outcomes from a hospital perspective were measured; no further costs were considered and no outcomes to patients and carers were captured.
General conclusion	
This study was not sufficiently applicable (-).	

Discharge planning (with and without rehabilitation) for older people

Fox MT, Persaud M, Maimets I, Brooks D, O'Brien K, Tregunno D (2013) Effectiveness of early discharge planning in acutely ill or injured hospitalised older adults: a systematic review and meta-analysis. BMC Geriatrics 13: 1–9	
Guideline topic: Transition, hospital and community or care settings	
Economic priority area: B, review questions 6 and 7	
Checklist: Section 1	
Is the study population appropriate for the review question?	
No	Older people during acute phase or injury phase; mean age was 65 years; it was not clear whether this group had social care needs.
Are the interventions appropriate for the review question?	
No	Mostly nurse-led interventions of early discharge planning. Involvement of social care professionals was not stated.
1.3 Is the current social care system in which the study was conducted sufficiently similar to the current UK social care context?	
No	No studies from the UK and most studies were of an older date.
1.4 Are the perspectives clearly stated and what are they?	
Not applicable	This study was a systematic review that included effectiveness studies which measured patient as well as resource use outcomes.
1.5 Are all direct effects on individuals included?	
Partly	A range of different patient outcomes were included in the review but studies did not capture them comprehensively and consistently; health-related quality of life measured with the SF-36 captured only in 2 trials, mortality (up to 12 months after index discharge) captured in 5 trials. In addition, the effects on carers were not considered.
1.6 Are all future costs and outcomes discounted appropriately?	
Not applicable	Resource use was presented but not costs and outcomes were expressed in natural units.
1.7 How is the value of effects expressed?	
Partly	Natural units. A range of different outcome measures were applied. Health is not expressed in utility.

1.8 Are costs and outcomes from other sectors (including the value of unpaid care, where relevant) fully and appropriately measured and valued?	
No	Resource use is only included from the perspective of the hospital and measured in terms of 3 service outcomes: length of hospital stay, time of hospital readmission and length of stay of readmission. Other use health and social care, out-of-pocket expenditure or costs of unpaid care were not included. Carers' outcomes were not included and only 2 studies measured patient's health with generic, standardised measures.
General conclusion	
This study was not sufficiently applicable (-).	

Hammar T, Rissanen P, Peraelae ML (2009) The cost-effectiveness of integrated home care and discharge practice for home care patients. Health Policy 92: 10–20	
Guideline topic: Transition, hospital and community or care settings	
Economic priority area: B, review questions 6 and 7	
Checklist: Section 1	
Is the study population appropriate for the review question?	
Yes	The population was older people (65 years +) who were admitted from home to hospital and discharged home after their hospital stay; although the study excluded patients with certain primary diagnosis such as dementia it presented an important sub-group covered by the scope.
Are the interventions appropriate for the review question?	
Yes	The intervention is a case management that covered integrated discharge and home care.
1.3 Is the current social care system in which the study was conducted sufficiently similar to the current UK social care context?	
Partly	The study took place in Finland but was of a recent date.
1.4 Are the perspectives clearly stated and what are they?	
Yes	The perspective was the one of health and social care.

1.5 Are all direct effects on individuals included?	
Yes	Health-related quality of life was measured using 2 standardised and multidimensional health measures; mortality and hospital readmission was measured; carers' outcomes were not included.
1.6 Are all future costs and outcomes discounted appropriately?	
Yes	The authors state that discounting was not necessary because of the short time period of less than a year.
1.7 How is the value of effects expressed?	
Yes	In utility (EQ-5D) and in natural unit for the other health measure (NHP).
1.8 Are costs and outcomes from other sectors (including the value of unpaid care, where relevant) fully and appropriately measured and valued?	
Partly	The study measured a comprehensive set of health and social care costs. Out-of-pocket expenditure, costs of unpaid care and outcome to carers were not considered.
General conclusion	
The study was sufficiently applicable (+).	
Section 2: Study limitations (the level of methodological quality)	
2.1 Does the model structure adequately reflect the nature of the topic under evaluation?	
Not applicable	This study was cost-effectiveness and utility analysis carried alongside a cluster randomised controlled trial.
2.2 Is the time horizon sufficiently long to reflect all important differences in costs and outcomes?	
Partly	Costs and outcomes were measured over the period of 6 months; findings showed that mortality, as an outcome with potential long-term impact was not affected by the intervention in the short-term so that it was unlikely that effects were missed; data on institutional care, another outcome with potential long-term impact, were not considered.
2.3 Are all important and relevant outcomes included?	
Partly	Admission to residential care and carers' outcomes were not included.
2.4 Are the estimates of baseline outcomes from the best available source?	
Yes	From trial data; outcomes were measured at point of discharge.

2.5 Are the estimates of relative intervention effects from the best available source?	
Yes	From trial data; there were no significant differences between groups at baseline.
2.6 Are all important and relevant costs included?	
Partly	Relevant short-term health and social care costs were included with the exception of residential care. Not included were longer-term costs, the costs of unpaid care and out-of-pocket expenditure.
2.7 Are the estimates of resource use from the best available source?	
Yes	Resource use data were taken from patient questionnaires as well as care registers.
2.8 Are the unit costs of resources from the best available source?	
Yes	The unit costs were from appropriate national sources; unit costs were not presented separately.
2.9 Is an appropriate incremental analysis presented or can it be calculated from the data?	
Yes	The costs and QALYs were combined for intervention and comparison group and presented in a scatter plot on the cost-effectiveness plane and cost-effectiveness acceptability curves. Results on ICER values were presented only in graphical form.
2.10 Are all important parameters whose values are uncertain subjected to appropriate sensitivity analysis?	
Yes	Bootstrap estimates for costs and outcomes were used to produce a cost-effectiveness acceptability curve.
2.11 Is there any potential conflict of interest?	
Unclear	There was no declaration of conflict of interest. Researchers were from the National Institute for Health and Welfare and from a Finnish University for Public Health.
2.12 Overall assessment	
Overall the quality of this study was high with some minor limitations (++).	

Lim W K, Lambert S F, Gray L C. (2003) Effectiveness of case management and post-acute services in older people after hospital discharge. Medical Journal of Australia 178: 262–6
Guideline topic: Transition, hospital and community or care settings
Economic priority area: B, review questions 6 and 7

Checklist: Section 1	
Is the study population appropriate for the review question?	
Yes	The population was older people (65 years +) who were admitted from home to hospital and discharged home after their hospital stay; the study excluded patients with certain characteristics (e.g. psychiatric illness); the study population presented an important sub-group covered by the scope.
Are the interventions appropriate for the review question?	
Yes	The intervention is a case management that covered integrated discharge and home care; the intervention was led by health professionals based in hospital but services covered in the intervention included social care.
1.3 Is the current social care system in which the study was conducted sufficiently similar to the current UK social care context?	
No	The study took place in Australia and is not of a recent date.
1.4 Are the perspectives clearly stated and what are they?	
Partly	The perspective was not specifically stated but was likely to be one of health and social care.
1.5 Are all direct effects on individuals included?	
Partly	A range of patient health outcomes were included as well as carers outcomes; however, most outcomes were only measured at 1 month and it is unlikely that this time period was long enough to capture all relevant effects.
1.6 Are all future costs and outcomes discounted appropriately?	
Yes	Discounting was not necessary because of the short time period of less than a year.
1.7 How is the value of effects expressed?	
Yes	In health utility (measured through EQ-5D) and in natural unit for the other health measure (NHP).
1.8 Are costs and outcomes from other sectors (including the value of unpaid care, where relevant) fully and appropriately measured and valued?	
Partly	The study measured a comprehensive set of health and social care costs. Out-of-pocket expenditure, costs of unpaid care were not considered.
General conclusion	
The study was sufficiently applicable (+).	

Section 2: Study limitations (the level of methodological quality)	
2.1 Does the model structure adequately reflect the nature of the topic under evaluation?	
Not applicable	This study was a cost-effectiveness and cost-consequences analysis carried alongside a randomised controlled trial.
2.2 Is the time horizon sufficiently long to reflect all important differences in costs and outcomes?	
Partly	Costs and outcomes were measured over the period of 1 month (quality of life) and 6 months (mortality); the former is most likely to too short to capture all relevant effects on patients' health; findings showed that mortality, as an outcome with potential long-term impact was not affected by the intervention in the short term so that it was unlikely that long-term effects were missed; data on institutional care, another outcome with potential long-term impact, were not considered, however.
2.3 Are all important and relevant outcomes included?	
Partly	Admission to residential care and carers' outcomes were not included.
2.4 Are the estimates of baseline outcomes from the best available source?	
Yes	From trial data; outcomes were measured at point of discharge.
2.5 Are the estimates of relative intervention effects from the best available source?	
Yes	From trial data; there were no significant differences between groups at baseline.
2.6 Are all important and relevant costs included?	
Partly	Relevant short-term health and social care costs were included with the exception of residential care and social work interventions in the control group; the latter was likely to lead to an underestimation of the cost-effectiveness of the intervention. Not included were longer-term costs, the costs of unpaid care and out-of-pocket expenditure.
2.7 Are the estimates of resource use from the best available source?	
Yes	Resource use data were taken from patient questionnaires, hospital systems, death registers and community providers.
2.8 Are the unit costs of resources from the best available source?	
Partly	Unit costs for community services were taken from community providers. No further detail was provided.
2.9 Is an appropriate incremental analysis presented or can it be calculated from the data?	
Partly	Incremental costs and outcomes were presented separately in form of cost consequences; there was no summary measure for the benefits and no synthesis of costs and benefits could be therefore undertaken.

2.10 Are all important parameters whose values are uncertain subjected to appropriate sensitivity analysis?	
No	No sensitivity analysis was carried out.
2.11 Is there any potential conflict of interest?	
Unclear	The authors did not declare conflicts of interests (or the absence of it). The study was funded by the Victorian Department of Human Services and the National Health and Medical Research Council.
2.12 Overall assessment	
Overall the study was of good quality with some limitations mainly due to the limited time horizon and the fact that costs were not considered comprehensively; if these limitations are considered findings can still be used to inform recommendations (++).	

Miller P, Gladman JR, Cunliffe AL, Husbands SL, Dewey ME, Harwood RH (2005) Economic analysis of an early discharge rehabilitation service for older people. Age and Ageing 34: 274–80	
Guideline topic: Transition, hospital and community or care settings	
Economic priority area: B, review questions 6 and 7	
Checklist: Section 1	
Is the study population appropriate for the review question?	
Yes	The study population was older people above 65 years with social care and rehabilitation needs that could be met at home without 24-hour care. This is an important group of the population covered by the scope.
Are the interventions appropriate for the review question?	
Yes	The interventions were early discharge rehabilitation services comprising home care and rehabilitation services provided by multidisciplinary teams.
1.3 Is the current social care system in which the study was conducted sufficiently similar to the current UK social care context?	
Yes	The study was from the UK and carried out approximately 10 years ago; the context in which the study was provided is likely to be still relevant to the current UK context.
1.4 Are the perspectives clearly stated and what are they?	

Yes	This study reflected the perspective of the NHS and Personal Social Services; this was explicitly stated.
1.5 Are all direct effects on individuals included?	
Partly	A comprehensive range of patient outcomes were measured at baseline, 3 and 12 months; they included (domestic) activities of daily living, psychological wellbeing and quality of life (measured via standardised tool, the EQ-5D); long-term outcomes to patients and outcomes to carers were not included.
1.6 Are all future costs and outcomes discounted appropriately?	
Yes	Discounting was not necessary because of the short time period of 1 year.
1.7 How is the value of effects expressed?	
Yes	In health utility (for health outcomes measured with the EQ-5D) and in natural units for other patient outcomes.
1.8 Are costs and outcomes from other sectors (including the value of unpaid care, where relevant) fully and appropriately measured and valued?	
Partly	Long-term patient outcomes and carers' outcomes were not captured; out-of-pocket expenditure or costs of unpaid care were not included.
General conclusion	
This study was sufficiently applicable to the review question (-).	
Section 2: Study limitations (the level of methodological quality)	
2.1 Does the model structure adequately reflect the nature of the topic under evaluation?	
Not applicable	This study was a cost-utility analysis carried out alongside a randomised controlled trial.
2.2 Is the time horizon sufficiently long to reflect all important differences in costs and outcomes?	
Partly	Costs and outcomes were measured over the period of a year; there could be a longer-term impact measured in hospital readmission, care home admission, mortality and unpaid care.
2.3 Are all important and relevant outcomes included?	
Partly	Longer-term patient outcomes and carers outcomes were not included.
2.4 Are the estimates of baseline outcomes from the best available source?	
Partly	From trial data; EQ-5D was applied only at 12 months.

2.5 Are the estimates of relative intervention effects from the best available source?	
Yes	From trial data.
2.6 Are all important and relevant costs included?	
Partly	Relevant health and social care costs for the first year were included. Not included were longer-term costs, the costs of unpaid care and out-of-pocket expenditure.
2.7 Are the estimates of resource use from the best available source?	
Partly	Resource use data were based on providers' records of client contact time and additional data collected by providers during the 12 months; some additional assumptions were made where there were gaps which had been derived from discussion with local practitioners.
2.8 Are the unit costs of resources from the best available source?	
Yes	The unit costs were from appropriate national sources (PSSRU Compendium and NHS reference costs); unit costs were not presented separately.
2.9 Is an appropriate incremental analysis presented or can it be calculated from the data?	
Partly	The costs and QALYs were combined for intervention and comparison group and presented in a scatter plot on the cost-effectiveness plane. Results on ICER values were presented only in graphical form.
2.10 Are all important parameters whose values are uncertain subjected to appropriate sensitivity analysis?	
Yes	Sensitivity analysis was based on 50% reduction in hospitalisation costs and doubling the cost of the intervention. Bootstrap estimates for costs and outcomes (2000 iterations) were used to produce a cost-effectiveness acceptability curve.
2.11 Is there any potential conflict of interest?	
Unclear	The study was funded by the Nottingham Health Authority and carried out by researchers from the local university and medical centre.
2.12 Overall assessment	
Overall the quality of this study is relatively high with some minor limitations (++).	

Wong FK, Chau J, So C, Tam SK, McGhee S (2012) Cost-effectiveness of a health-social partnership transitional program for post-discharge medical patients. BMC Health Services Research 12: 479.

Guideline topic: Transition, hospital and community or care settings	
Economic priority area: B, review questions 6 and 7	
Checklist: Section 1	
Is the study population appropriate for the review question?	
Yes	The population was older people (60 years +) including those with social care needs; the population presents an important subgroup covered by the scope.
Are the interventions appropriate for the review question?	
Yes	The intervention was a case management approach with integrated discharge planning and community support; the intervention was provided by a nurse and volunteers; the latter provided social support; referrals were made to social workers for further support such as daily living assistance, housing assistance and counselling.
1.3 Is the current social care system in which the study was conducted sufficiently similar to the current UK social care context?	
No	The study took place in Hong Kong and was of a recent date.
1.4 Are the perspectives clearly stated and what are they?	
Partly	The perspective was one of healthcare but also included the costs of volunteers, patient time and social care for the intervention group (the authors referred to it as a 'societal perspective'). It was not a comprehensive societal perspective as for example the costs of unpaid care and transport costs were not considered.
1.5 Are all direct effects on individuals included?	
Partly	The study measured quality of life at 28 and 84 days using an adapted version of the Short Form health survey (SF 36) and readmission to hospital at those 2 time points; wider aspects of social care-related quality and carers outcomes were not considered.
1.6 Are all future costs and outcomes discounted appropriately?	
Yes	Discounting was not necessary because of the short time period of less than a year.
1.7 How is the value of effects expressed?	
Yes	Health outcomes were expressed in utility via the SF-36 and readmission was expressed in natural units (and in monetary form as part of the cost analysis).

1.8 Are costs and outcomes from other sectors (including the value of unpaid care, where relevant) fully and appropriately measured and valued?	
Partly	The study measured a comprehensive set of intervention and health care costs. Costs of social care, out-of-pocket expenditure, costs of unpaid care and carers' outcomes were not considered.
General conclusion	
The study was sufficiently applicable (+).	
Section 2: Study limitations (the level of methodological quality)	
2.1 Does the model structure adequately reflect the nature of the topic under evaluation?	
Not applicable	This study was a cost-effectiveness/utility analysis carried alongside a randomised controlled trial.
2.2 Is the time horizon sufficiently long to reflect all important differences in costs and outcomes?	
Partly	QALY gains were measured over a relatively short time period of less than 3 months and the authors admit that it was possible that this might have been too short to capture all differences in outcomes.
2.3 Are all important and relevant outcomes included?	
Partly	Only health-related quality of life outcomes were included and not wider social care-related ones; furthermore, carers' outcomes were not included.
2.4 Are the estimates of baseline outcomes from the best available source?	
Unclear	From trial data; no further detail provided in this paper and the reader is referred to another paper for details of the study design.
2.5 Are the estimates of relative intervention effects from the best available source?	
Yes	From the trial data there were no significant differences in health utility and characteristics between groups at baseline.
2.6 Are all important and relevant costs included?	
No	The study only captured the programme costs (including training) and hospitalisation costs; other healthcare costs (for emergency and outpatient admission) as well as the costs of social care (in the control group) and other costs such as out-of-pocket expenditure and the costs of unpaid care were not considered.
2.7 Are the estimates of resource use from the best available source?	

Yes	Resource use data on health service utilisation were taken from hospital information systems.
2.8 Are the unit costs of resources from the best available source?	
Yes	For the programme (and training) costs, unit costs were calculated from salary data which were taken from local (for staff) or national (for volunteers) sources. Unit cost used for health care services were taken from national authorities.
2.9 Is an appropriate incremental analysis presented or can it be calculated from the data?	
Yes	Incremental costs and outcomes were presented separately and in combined form; ICER values were presented graphically in form of cost-effectiveness planes and acceptability curves; probabilities of cost-effectiveness were stated including the impact of changing parameters on findings in form of sensitivity analysis.
2.10 Are all important parameters whose values are uncertain subjected to appropriate sensitivity analysis?	
Yes	Comprehensive sensitivity analysis (1-way, probabilistic) was carried out.
2.11 Is there any potential conflict of interest?	
Unclear	The authors did not declare conflicts of interests (or the absence of it). The study was funded by The Hong Kong Jockey Club Charities Trust and the Research Grants Council of the Hong Kong Special Administrative Region, China. Researchers were from a university and from the study site.
2.12 Overall assessment	
Overall the study was of moderate quality with some potentially serious limitations that are important to consider when interpreting the findings of the study (+).	

Discharge planning (with and without rehabilitation) or rehabilitation for people with stroke

Brady BK, McMahan L, Skidmore B (2005) Systematic review of economic evidence on stroke rehabilitation services. International Journal of Technology Assessment in Health Care 21: 15–21	
Guideline topic: Transition, hospital and community or care settings	
Economic priority area: B, review questions 6 and 7	
Checklist: Section 1	
Is the study population appropriate for the review question?	
Partly	The population included stroke patients in hospital of all ages but it was stated that findings only referred to people with mild to moderate stroke severity and not to people with higher degrees of disability.
Are the interventions appropriate for the review question?	
Partly	A range of interventions and comparators were included in this review and clustered into 3 groups of service provision; the way groups were chosen appeared appropriate; however the problem of heterogeneity between interventions and comparators within groups was reported to limit the generalisability of findings.
1.3 Is the current social care system in which the study was conducted sufficiently similar to the current UK social care context?	
Partly	The review looked at international studies including from the UK; 6 out of 15 studies were from the UK; the studies were old (2000 and earlier), which might limit their applicability to the current UK context of health and social care provision.
1.4 Are the perspectives clearly stated and what are they?	
Yes	This study clearly stated that perspectives varied between studies were employed by the studies; some studies used a healthcare perspective, some a health and social care perspective and 5 studies also captured the perspective of individuals and included out-of-pocket expenditure and the costs of unpaid care.
1.5 Are all direct effects on individuals included?	
No	The study reported primarily on resource use outcomes. Some health and carers outcomes were reported but not comprehensively enough to understand whether all direct effects had been appropriately captured.

1.6 Are all future costs and outcomes discounted appropriately?	
Yes	Discounting was not necessary because of the relatively short study periods of 12 months or less.
1.7 How is the value of effects expressed?	
Partly	Resource outcomes were presented in monetary values. Health was not measured via standardised tools and not expressed in utility.
1.8 Are costs and outcomes from other sectors (including the value of unpaid care, where relevant) fully and appropriately measured and valued?	
Partly	Not all studies evaluated costs of social care, costs of unpaid care and out-of-pocket expenditure.
General conclusion	
The study was sufficiently applicable (+).	
Section 2: Study limitations (the level of methodological quality)	
2.1 Does the model structure adequately reflect the nature of the topic under evaluation?	
Not applicable	This study was a systematic review of economic evaluations and cost studies.
2.2 Is the time horizon sufficiently long to reflect all important differences in costs and outcomes?	
Yes	Most studies used time periods of 6 or 12 months; 1 study took a short time period of 8 weeks and 1 study modelled a life-time perspective to consider slightly different stroke survival rates; generally a time period of 12 months appeared appropriate for this type of intervention as there was no consistent evidence of impact on survival.
2.3 Are all important and relevant outcomes included?	
No	The study did not review patient outcomes with insufficient details and only a few studies looked at carers' outcomes.
2.4 Are the estimates of baseline outcomes from the best available source?	
Unclear	No details on baseline outcomes were reported.
2.5 Are the estimates of relative intervention effects from the best available source?	
Partly	Values on incremental effects were taken directly from studies and no further detail was provided; no further analysis was applied but quality of studies was considered qualitatively and significance level were reported.

2.6 Are all important and relevant costs included?	
Partly	See Sections 1.4, 1.6.
2.7 Are the estimates of resource use from the best available source?	
Unclear	There was no detail provided on the data sources.
2.8 Are the unit costs of resources from the best available source?	
Unclear	There was no detail available on unit costs but the authors stated that this was a reporting issue across studies and that unit costs had often not been presented.
2.9 Is an appropriate incremental analysis presented or can it be calculated from the data?	
No	The study reported on incremental costs but did not report on incremental cost effectiveness; some conclusions could be drawn on likely cost-effectiveness based on the data they provided.
2.10 Are all important parameters whose values are uncertain subjected to appropriate sensitivity analysis?	
Partly	The significance of results was reported and some studies had carried out additional sensitivity analysis. This review did not carry out additional statistical analysis on parameters.
2.11 Is there any potential conflict of interest?	
No	Funding was provided by the Canadian Coordinating Office for Health technology Assessment and the research was carried out by independent researchers who disclosed no conflict of interest.
2.12 Overall assessment	
The study focused primarily on incremental costs and findings on those can be used to inform recommendations in the context of findings from other studies (minor limitations); findings on individual outcomes were not sufficiently presented and can only be used to inform general recommendations about likely trends of cost-effectiveness (potentially serious limitations). Overall the study was of moderate quality with potentially serious limitations (+).	

Fearon P and Langhorne P (2012) Services for reducing duration of hospital care for acute stroke patients. Cochrane Database of Systematic Reviews Issue 9.
Guideline topic: Transition, hospital and community or care settings
Economic priority area: B, review questions 6 and 7
Checklist: Section 1

Is the study population appropriate for the review question?	
Yes	Refers to patients admitted with clinical diagnosis of stroke; the majority of patients were older people with a mean age of 66 to 80 years; the majority of patients were recruited from urban hospitals (but also included patients from hospitals that covered rural areas); stroke patients are an important sub group of the population covered in the scope.
Are the interventions appropriate for the review question?	
Yes	Interventions included a range of interventions that supported early discharge and were provided by multidisciplinary teams; the majority of interventions included elements that were provided after discharge; the typical multidisciplinary team comprised physiotherapy, occupational therapy, speech and language therapy with medical, nursing and social work support.
1.3 Is the current social care system in which the study was conducted sufficiently similar to the current UK social care context?	
Partly	The review included 5 studies from the UK but none of these were of recent date (all were older than 10 years).
1.4 Are the perspectives clearly stated and what are they?	
Partly	This study was a systematic review that reported on economic analysis carried out in 7 trials; costs referred to those of the intervention and potential cost savings from reduction in hospital beds so that the perspective is one of the hospital.
1.5 Are all direct effects on individuals included?	
Yes	A wide range of patient outcomes are included (subjective health status, depression, death, satisfaction, ADLs, dependency) that are likely to capture all direct effects on those; for carers, subjective health status, mood and satisfaction was measured.
1.6 Are all future costs and outcomes discounted appropriately?	
Partly	It was not reported whether discounting applied; it was likely that discounting was not necessary because of relatively short study periods.
1.7 How is the value of effects expressed?	
Partly	Natural units. A wide range of different outcome measures were applied. Health is not measured via standardised tools and not expressed in utility.
1.8 Are costs and outcomes from other sectors (including the value of unpaid care, where relevant) fully and appropriately measured and valued?	

Partly	A comprehensive set of outcomes is measured via different types of measures but health is not measured via a standardised tool (such as EQ-5D) so that no cost utility could be established. Costs are only included from the perspective of the hospital and wider public sector costs (such costs of home care or care homes); out-of-pocket expenditure or costs of unpaid care were included.
General conclusion	
This study is broadly applicable to the review question; the study covered an important sub group of the population relevant for the review question; limitations were that studies were older and only captured a narrow set of costs (+).	
Section 2: Study limitations (the level of methodological quality)	
2.1 Does the model structure adequately reflect the nature of the topic under evaluation?	
Not applicable	This study was a systematic review.
2.2 Is the time horizon sufficiently long to reflect all important differences in costs and outcomes?	
Partly	Studies used different time periods from 3 to 12 months; a time period of 6 to 12 months seemed appropriate for this type of intervention but it was less likely that studies which employed a 3 months follow-up included all important costs and effects.
2.3 Are all important and relevant outcomes included?	
Partly	A wide range of primary and secondary outcomes were captured including carers' outcomes; costs only referred to those from the perspective of the hospital.
2.4 Are the estimates of baseline outcomes from the best available source?	
Yes	Baseline outcomes were measured in trials.
2.5 Are the estimates of relative intervention effects from the best available source?	
Yes	Estimates were taken from randomised controlled trials and meta-analysis was applied to synthesise effect sizes under consideration of heterogeneity.
2.6 Are all important and relevant costs included?	
No	Only hospital costs were included; costs for other health services, costs for social care services (in particular residential care) and costs that incurred to individuals (out-of-pocket expenditure and value of unpaid care) were not included.
2.7 Are the estimates of resource use from the best available source?	

Unclear	Resource use in terms length of initial hospital stay and readmission was measured appropriately as part of outcomes in trials. However, there was lack of detail on how other costs linked to the intervention had been measured and other health and social care use was not included.
2.8 Are the unit costs of resources from the best available source?	
Unclear	There was no detail provided on the source of unit costs; it was likely that costs had been taken from hospital budget data or similar.
2.9 Is an appropriate incremental analysis presented or can it be calculated from the data?	
No	No combined cost-effectiveness results were presented.
2.10 Are all important parameters whose values are uncertain subjected to appropriate sensitivity analysis?	
Yes	Sensitivity analysis was applied to explore implications of missing data, unit of analysis (cluster versus single trial), method of randomisation, intention-to-treat and blinding of outcome assessment.
2.11 Is there any potential conflict of interest?	
No	No particular funding source stated and authors were independent researchers.
2.12 Overall assessment	
This was an overall high quality study and it is likely that findings on main outcomes were reliable for this type of intervention; however, costs were not captured comprehensively so that there was limited conclusiveness about cost-effectiveness (++).	

Larsen T, Olsen TS, Sorenson J (2006) Early home-supported discharge of stroke patients: a health technology assessment. International Journal of Technology Assessment in Health Care 22: 313–20
Guideline topic: Transition, hospital and community or care settings
Economic priority area: B, review questions 6 and 7
Checklist: Section 1
Is the study population appropriate for the review question?

Partly	Studies included in this review were those that looked at patients in hospital with newly diagnosed stroke; this covers an important group of the population relevant for the review question; most studies applied specific inclusion criteria; inclusion varied from 30% to 68% according to specific medical criteria on the severity of the stroke and this could negatively affect the appropriateness of this study population, especially because findings were not presented for those sub-groups.
Are the interventions appropriate for the review question?	
Yes	Interventions consisted of multidisciplinary work that spanned from hospital to home in addition to stroke unit care; intervention specifically referred to the involvement of social workers; the intervention is appropriately compared with standard stroke unit care (although there might be also other forms of stroke care and those were not considered).
1.3 Is the current social care system in which the study was conducted sufficiently similar to the current UK social care context?	
Partly	The review looked at international studies including from Sweden, Canada and the UK. UK studies were from London and Newcastle. Most of the studies were of an older date (2000 or earlier). It was likely that the context was still partly relevant to the current context, and findings on outcomes could be transferable to the current system whilst cost findings might need updating.
1.4 Are the perspectives clearly stated and what are they?	
Partly	This study was a systematic review which also carried out some additional economic analysis based on the resource and cost data provided in the trials. This referred to the costs to the hospital as well as costs of care homes. Other health and social care costs were not included.
1.5 Are all direct effects on individuals included?	
No	The study only reviewed resource use outcomes and mortality but did not include other patient health outcomes or carers' outcomes.
1.6 Are all future costs and outcomes discounted appropriately?	
Yes	Discounting was not necessary because of the relatively short study periods of 12 months or less.
1.7 How is the value of effects expressed?	
Partly	Resource outcomes were presented in natural units and monetary values. Health was not measured via standardised tools and not expressed in utility.
1.8 Are costs and outcomes from other sectors (including the value of unpaid care, where relevant) fully and appropriately measured and valued?	
No	The study only measured resource use outcomes and mortality. Other patient and carer outcomes were not incorporated.

General conclusion	
This study was broadly applicable to the review question; the study covered an important sub-group of the population relevant for the review question; limitations were that studies were dated and captured a relatively narrow set of costs and outcomes (+).	
Section 2: Study limitations (the level of methodological quality)	
2.1 Does the model structure adequately reflect the nature of the topic under evaluation?	
Not applicable	This study was a systematic review.
2.2 Is the time horizon sufficiently long to reflect all important differences in costs and outcomes?	
Partly	Studies used different time periods from 3 to 12 months; a time period of 6 to 12 months seemed appropriate for this type of intervention but it was less likely that studies which employed a 3 months follow-up included all important costs and effects.
2.3 Are all important and relevant outcomes included?	
No	See Section 1.5.
2.4 Are the estimates of baseline outcomes from the best available source?	
Partly	Baseline needs were taken into consideration.
2.5 Are the estimates of relative intervention effects from the best available source?	
Unclear	Estimates were taken from randomised controlled trials and meta-analysis was applied to synthesise effect sizes but it was not clear if heterogeneity had been considered.
2.6 Are all important and relevant costs included?	
Partly	See Sections 1.4, 1.6.
2.7 Are the estimates of resource use from the best available source?	
Partly	Resource use in terms length of initial hospital stay and readmission was measured appropriately as part of outcome measures in trials and unit costs were applied to those including cost savings linked to reduced number of hospital and care home stays. Costs of the interventions were presented with some detail about how they had been derived but insufficient to come to final conclusion about their appropriateness. Other resource use was not considered.
2.8 Are the unit costs of resources from the best available source?	
No	The study used data from a Dutch source which is not the most appropriate source from a UK perspective.

2.9 Is an appropriate incremental analysis presented or can it be calculated from the data?	
Partly	The study reported the net benefit but based on simplified assumptions about alternative provision to care home provision.
2.10 Are all important parameters whose values are uncertain subjected to appropriate sensitivity analysis?	
Partly	Only significant results were used for the economic analysis but no further sensitivity analysis was carried out.
2.11 Is there any potential conflict of interest?	
No	No particular funding source stated and authors were independent researchers.
2.12 Overall assessment	
This was an overall moderate quality study with some potentially serious limitations because of insufficient detail, simplified assumptions on resource use and uncertainty whether the incremental perspective was analysed appropriately as well as the lack of sensitivity analysis (+).	

Patel A, Knapp M, Perez I, Evans A, Kalra L (2004) Alternative strategies for stroke care: cost-effectiveness and cost-utility analyses from a prospective randomized controlled trial. Stroke 35: 196–203	
Guideline topic: Transition, hospital and community or care settings	
Economic priority area: B, review questions 6 and 7	
Checklist: Section 1	
Is the study population appropriate for the review question?	
Yes	The population was stroke patients within 72 hours of stroke onset; the population presents an important sub-group covered by the scope.
Are the interventions appropriate for the review question?	
Partly	Two of the interventions (stroke team and stroke unit) included discharge planning while the third intervention (domiciliary care) specifically included social care provision but did not include discharge planning.
1.3 Is the current social care system in which the study was conducted sufficiently similar to the current UK social care context?	
Partly	The study took place in UK and was of an older date.
1.4 Are the perspectives clearly stated and what are they?	
Yes	The perspective is one of society and included health and other public services and the cost of unpaid care. Out-of-pocket

	expenditure was not considered.
1.5 Are all direct effects on individuals included?	
Yes	The study captured the most important outcomes including health-related quality of life at several time points over a 12-month period, institutionalisation and survival over a 12-month period; negatively, effects on unpaid carers were not measured in form of carers stress or similar but unpaid care was included on the cost side so that overall direct effects were included comprehensively.
1.6 Are all future costs and outcomes discounted appropriately?	
Yes	Discounting was not necessary because of the short time period of a year.
1.7 How is the value of effects expressed?	
Yes	Health outcomes were expressed in utility via the EQ-5D and primary outcomes were expressed in natural units.
1.8 Are costs and outcomes from other sectors (including the value of unpaid care, where relevant) fully and appropriately measured and valued?	
Yes	The study captured health and other public services as well as the costs of unpaid care. Patient outcomes were measured comprehensively; there were no outcome measures used for carers and out-of-pocket expenditure was not included.
General conclusion	
The study was sufficiently applicable (+).	
Section 2: Study limitations (the level of methodological quality)	
2.1 Does the model structure adequately reflect the nature of the topic under evaluation?	
Not applicable	This study was a cost-effectiveness/utility analysis carried alongside a randomised controlled trial.
2.2 Is the time horizon sufficiently long to reflect all important differences in costs and outcomes?	
Yes	A 12-month period seemed appropriate considering the relatively short term nature of the intervention; there could be longer-term effects on mortality and institutionalisation.
2.3 Are all important and relevant outcomes included?	
Yes	All important and relevant patient outcomes were included; carers' outcomes were not included but the impact of unpaid care was included on the cost side.

2.4 Are the estimates of baseline outcomes from the best available source?	
Partly	EQ-5D was first applied at 6 weeks (rather than at stroke onset) and this made it necessary to rely on statistical inference.
2.5 Are the estimates of relative intervention effects from the best available source?	
Yes	From data of a well conducted trial; it was likely that relative intervention effects were accurate.
2.6 Are all important and relevant costs included?	
No	The study only captured the programme costs (including training) and healthcare costs; costs of social care and other costs such as out-of-pocket expenditure and the costs of unpaid care were not considered.
2.7 Are the estimates of resource use from the best available source?	
Yes	Resource use data on health service utilisation were taken from hospital information systems.
2.8 Are the unit costs of resources from the best available source?	
Yes	Unit costs were derived from local sources and where this was not possible from an appropriate national source, the PSSRU compendium of unit costs for health and social care
2.9 Is an appropriate incremental analysis presented or can it be calculated from the data?	
Yes	Incremental costs and outcomes were presented separately and in combined form; ICER values were presented graphically in form of cost-effectiveness planes and acceptability curves; probabilities of cost-effectiveness were stated including the impact of changing parameters on findings in form of sensitivity analysis.
2.10 Are all important parameters whose values are uncertain subjected to appropriate sensitivity analysis?	
Yes	Sensitivity analysis was performed to verify the impact of informal care on the overall costs. Comprehensive statistical analysis (1-way, non-parametric) was carried out on the mean costs between the 3 groups. Uncertainty around cost-effectiveness was examined by reporting a range of ICERs based on the inclusion or exclusion of key cost components (immediate care for stroke episode, follow-up care, and informal care based on the 2 different costing approaches). Uncertainty in cost-utility estimates was additionally represented through cost-effectiveness acceptability curves.
2.11 Is there any potential conflict of interest?	
Unclear	The authors did not declare conflicts of interests (or the absence of it). The research was funded by the NHS R&D Executive's Health Technology Assessment Programme and researchers were from different mainly independent research institutions.
2.12 Overall assessment	

Overall the study was of high quality with only minor limitations (++).

Saka O, Serra V, Samyshkin Y, McGuire A, Wolfe CC (2009) Cost-effectiveness of stroke unit care followed by early supported discharge. Stroke 40: 24–9	
Guideline topic: Transition, hospital and community or care settings	
Economic priority area: B, Q. 6 &7.	
Checklist: Section 1	
Is the study population appropriate for the review question?	
Yes	The study population covers stroke patients at hospital discharge and makes a distinction between sub-groups with different severities of needs. Stroke is a highly prevalent chronic conditions and the type of treatment after hospitalisation has shown to have an important impact on costs and quality of life so that this is an important group for this review question.
Are the interventions appropriate for the review question?	
Yes	The intervention covered early supported discharge approaches in addition to stroke care versus 2 different types of stroke care, 1 provided in a specialist unit and 1 provided on a general ward. The selection was appropriate and reflected current practice. However, effectiveness data were taken from 1 randomised controlled trial which did not specifically refer to social care in the description of the intervention.
1.3 Is the current social care system in which the study was conducted sufficiently similar to the current UK social care context?	
Partly	The study used data from the UK but some the data from an old trial from 1999.
1.4 Are the perspectives clearly stated and what are they?	
Yes	It is stated that the perspective was a societal one and the costs appeared to reflect the perspective which included productivity losses and the costs of unpaid in addition to health and social care services.
1.5 Are all direct effects on individuals included?	
Partly	Mortality was evaluated in addition to health-related quality of life over a long time period of 10 years; values for the latter were derived from the Barthel Index and wider social care-related quality of life outcomes were not considered. Outcome to

	carers were not measured but the value of unpaid care was considered on the cost side.
1.6 Are all future costs and outcomes discounted appropriately?	
Yes	Discounting was applied with an appropriate discount rate of 3.5% for both costs and outcomes. The impact of higher and lower rates on findings was explored in sensitivity analysis.
1.7 How is the value of effects expressed?	
Yes	The outcome measure that was used in the original study was the Barthel Index but the authors transformed those values into health-related quality of life and QALY gains and effects were thus expressed in utility.
1.8 Are costs and outcomes from other sectors (including the value of unpaid care, where relevant) fully and appropriately measured and valued?	
Yes	The study included the costs of health and social care, productivity losses and unpaid care.
General conclusion	
This study was sufficiently applicable to the review question (+).	
Section 2: Study limitations (the level of methodological quality)	
2.1 Does the model structure adequately reflect the nature of the topic under evaluation?	
Yes	The model structure appeared broadly appropriate.
2.2 Is the time horizon sufficiently long to reflect all important differences in costs and outcomes?	
Yes	The time horizon was 10 years and it was likely that this captured all important differences in costs and outcomes.
2.3 Are all important and relevant outcomes included?	
Partly	See Section 1.5.
2.4 Are the estimates of baseline outcomes from the best available source?	
Partly	Baseline outcomes were taken from 1 single fairly old randomised controlled trial.
2.5 Are the estimates of relative intervention effects from the best available source?	
Yes	Estimates were taken from blinded randomised controlled trial.
2.6 Are all important and relevant costs included?	

Yes	Costs linked to key health and social care service use were included as well as the costs of unpaid care and productivity losses. Out-of-pocket expenditures were not captured which excluded the costs of privately arranged care at home; but it was unlikely that this would have changed the findings significantly.
2.7 Are the estimates of resource use from the best available source?	
Yes	Resource use was captured from a trail and national statistics.
2.8 Are the unit costs of resources from the best available source?	
Yes	Unit costs were from local sources and national data where appropriate. All unit costs were presented in a table.
2.9 Is an appropriate incremental analysis presented or can it be calculated from the data?	
Yes	The authors presented all final incremental cost effectiveness values.
2.10 Are all important parameters whose values are uncertain subjected to appropriate sensitivity analysis?	
Yes	Both 1-way and probabilistic sensitivity analysis was carried out.
2.11 Is there any potential conflict of interest?	
No	The study was supported by the Stroke Association, London, and the Department of Health, National Institute of Health Research. The authors did not have to make any disclosure.
2.12 Overall assessment	
This was an overall high quality study with some minor limitations (++).	

Geriatric assessment and care (older people)

Ellis G, Whitehead MA, Robinson D, O'Neill D, Langhorne P (2011) Comprehensive geriatric assessment for older adults admitted to hospital: meta-analysis of randomised controlled trials. British Medical Journal 343: d6553
Guideline topic: Transition, hospital and community or care settings
Economic priority area: A and B, review questions 6 and 7
Checklist: Section 1

Is the study population appropriate for the review question?	
Yes	The group was hospital patients of 65 years or older admitted to hospital as an emergency; it is likely that a majority of older people eligible for this type of intervention would have had some social care needs; study population covered a large and important group of the population covered in the scope.
Are the interventions appropriate for the review question?	
Partly	Geriatric assessment included interdisciplinary work including some kind of long-term follow-up. However, the study did not report on details of the intervention in terms of social care involvement.
1.3 Is the current social care system in which the study was conducted sufficiently similar to the current UK social care context?	
Partly	None of the studies were from UK; the vast majority of studies were US-based and of an older date; although the general nature of the intervention and its purpose was likely to be applicable, it was less likely that findings on resource use and costs were directly transferable to a UK context. In particular the event of using residential care was likely to be influenced by the type of system in place.
1.4 Are the perspectives clearly stated and what are they?	
No	The focus of this meta-analysis was to summarise outcomes including resources use which reflected the perspective of the hospital and residential care. In addition it was reported that some studies had carried out further work on wider health and social care costs but this study did not provide sufficient detail to assess which perspective was taken and whether this was done appropriately.
1.5 Are all direct effects on individuals included?	
Partly	The study reported primarily on resource use outcomes but also considered a number of health or functioning related outcomes. Outcomes to carers were not reported. Outcomes were analysed for shorter and longer time periods (up to 12 months) and found that strength of effect on the primary outcome (living at home) were more pronounced for the shorter time period so that it was likely that the time horizon was sufficiently long.
1.6 Are all future costs and outcomes discounted appropriately?	
Yes	Discounting of costs was not necessary because of the short time period of 12 months.
1.7 How is the value of effects expressed?	
Partly	In natural units; health utilities were not captured.
1.8 Are costs and outcomes from other sectors (including the value of unpaid care, where relevant) fully and appropriately measured and	

valued?	
No	The study did not capture the impact on carers, costs associated with out-of-pocket expenditure (e.g. for travelling to the hospital); it was unclear in how far the costs reported in the study captured the impact on other parts of the health and social care system (such as the use of home care).
General conclusion	
This study was sufficiently applicable to the review question (+).	
Section 2: Study limitations (the level of methodological quality)	
2.1 Does the model structure adequately reflect the nature of the topic under evaluation?	
Not applicable	This study was a meta-analysis.
2.2 Is the time horizon sufficiently long to reflect all important differences in costs and outcomes?	
Yes	Median time horizon was 12 months which appeared appropriate for this type of intervention; this conclusions was supported by the findings of the study which showed that effects tended to be more pronounced in the short-term and outcomes that might be expected to be of long-term nature (such as mortality or readmissions) were not significantly influenced in the period of 12 months so that it was unlikely that there were effects after that period. Costs only included the perspective of hospital so that potential savings from reduced nursing home admissions (in the short- and long-term) were not captured.
2.3 Are all important and relevant outcomes included?	
Partly	See Section 1.5
2.4 Are the estimates of baseline outcomes from the best available source?	
Yes	Data were taken from randomised controlled trials.
2.5 Are the estimates of relative intervention effects from the best available source?	
Yes	Estimates were taken from randomised controlled trials and meta-analysis was applied to synthesise effect sizes under consideration of heterogeneity.
2.6 Are all important and relevant costs included?	
No	Most studies only captured hospital costs; some captured the costs of residential care; generally there was a lack of detail on

	how costs had been derived and other costs for health services and social care services (in particular residential care) or those incurred to individuals (out-of-pocket expenditure and value of unpaid care) were not included.
2.7 Are the estimates of resource use from the best available source?	
Unclear	Resource use in terms length of initial hospital stay and readmission was measured appropriately as part of outcomes in trials. However, there was lack of detail on how other costs linked to the intervention had been measured and other health and social care use was not included.
2.8 Are the unit costs of resources from the best available source?	
Unclear	There was no detail provided on the source of unit costs; it was likely that costs had been taken from hospital budget data or similar.
2.9 Is an appropriate incremental analysis presented or can it be calculated from the data?	
No	No combined cost-effectiveness results were presented.
2.10 Are all important parameters whose values are uncertain subjected to appropriate sensitivity analysis?	
No	Sensitivity analysis was not carried out.
2.11 Is there any potential conflict of interest?	
No	It was stated that the funding received no specific grant and authors had formally disclosed that they had no competing interests.
2.12 Overall assessment	
This was an overall high quality study with only minor limitations; it is likely that findings on main outcomes were reliable for this type of intervention; however, costs were not captured comprehensively so that there was limited conclusiveness about cost-effectiveness (++).	

Fox MT, Persaud M, Maimets Oli, O'Brien K, Brooks D, Tregunno D, Schraa E (2012) Effectiveness of acute geriatric unit care using acute care for elders' components: a systematic review and meta-analysis. The American Geriatrics Society 60: 2237–45
Guideline topic: Transition, hospital and community or care settings
Economic priority area: A, review questions 6 and 7
Checklist: Section 1

Is the study population appropriate for the review question?	
Yes	The group was hospital patients of 65 years or older (mean age of 81 years) who were acutely ill injured; it is likely that a majority of older people eligible for this type of intervention would have had some social care needs; study population covered a large and important group of the population covered in the scope.
Are the interventions appropriate for the review question?	
Partly	Geriatric assessment included interdisciplinary work including social workers in 10 (out of 19) studies. Usual care varies between different kinds of non-multidisciplinary and not functionally focused care.
1.3 Is the current social care system in which the study was conducted sufficiently similar to the current UK social care context?	
Partly	None of the studies were from UK; the vast majority of studies were US based and of an older date; although the general nature of the intervention and its purpose was likely to be applicable, it was less likely that findings on resource use and costs were directly transferable to a UK context. In particular the event of admission to residential care was likely to be influenced by the type of system in place.
1.4 Are the perspectives clearly stated and what are they?	
No	The focus of this meta-analysis was to summarise patient and resources use outcomes; the latter reflected the perspective of the hospital and residential care; cost data were presented for 5 studies and those only measured costs to the hospital during the hospital stay; this was likely to be appropriate from a hospital perspective because readmission was not affected but not from a health and social care perspective.
1.5 Are all direct effects on individuals included?	
Partly	The study reported a wide range of patient and resource use outcomes that were likely to be appropriate and comprehensive. Carers' outcomes were not considered.
1.6 Are all future costs and outcomes discounted appropriately?	
Not applicable	Discounting of costs was not necessary because of the short time period of 12 months.
1.7 How is the value of effects expressed?	
Partly	In natural units; health utilities were not captured.
1.8 Are costs and outcomes from other sectors (including the value of unpaid care, where relevant) fully and appropriately measured and valued?	
No	The study did not capture the impact on carers, costs associated with out-of-pocket expenditure (e.g. for travelling to the

	hospital); costs reported in the study did not capture the costs of residential care and health and social care costs in the community (such as home care).
General conclusion	
This study was not sufficiently applicable (-).	

Rehabilitation at hospital discharge (older people)

Ellis A, Trappes Lomax T, Fox M, Taylor R, Power M, Stead J, Bainbridge I (2006) Buying time II: an economic evaluation of a joint NHS/Social Services residential rehabilitation unit for older people on discharge from hospital. Health and Social Care in the Community 14: 95–106	
Guideline topic: Transition, hospital and community or care settings	
Economic priority area: B, review questions 6 and 7	
Checklist: Section 1	
Is the study population appropriate for the review question?	
Yes	People were 55 years and above likely to be discharged within 1 to 3 weeks and who had the potential to benefit from the intervention; excluded were people who were medically unstable, whose needs could not be managed by a community nurse, who had advanced terminal illness, major orientation problems, severe mental illness, and those that only needed rest and respite. Despite these exclusion criteria this seemed an appropriate and important group pf the population covered by the scope.
Are the interventions appropriate for the review question?	
Yes	Short-term residential rehabilitation unit as a form of intermediate care that was provided by a specialist team of therapists, care and rehabilitation assistants. The control group received the usual health and social care services and detail on services was provided in the study.
1.3 Is the current social care system in which the study was conducted sufficiently similar to the current UK social care context?	
Yes	This was study that was carried out in Devon (UK) in 1999/2000; although the study was of an older date the context is still likely to be relevant to the current context.
1.4 Are the perspectives clearly stated and what are they?	
Yes	The perspective on costs was one of the NHS and Personal Social Services.
1.5 Are all direct effects on individuals included?	
No	Primary outcome was a service use outcomes and the study reported on 1 service use outcome which was used as an effectiveness measure. Carers' outcomes were not considered.
1.6 Are all future costs and outcomes discounted appropriately?	

Yes	Discounting was not necessary because of the short time horizon of a year.
1.7 How is the value of effects expressed?	
Partly	Natural units of the primary outcome which was a service use outcome (survival at home). No generic standardised measure of health was used.
1.8 Are costs and outcomes from other sectors (including the value of unpaid care, where relevant) fully and appropriately measured and valued?	
Partly	The study did not include the costs of unpaid care and out-of-pocket expenditures; only 1 primary outcome (survival at home) was measured and no wider health effects on individuals were incorporated. In addition, carers' outcomes were not considered.
General conclusion	
This study was sufficiently applicable (+).	
Section 2: Study limitations (the level of methodological quality)	
2.1 Does the model structure adequately reflect the nature of the topic under evaluation?	
Not applicable	This study was a cost-effectiveness analysis carried out alongside a randomised controlled trial.
2.2 Is the time horizon sufficiently long to reflect all important differences in costs and outcomes?	
Partly	Costs and outcomes were measured over the period of a year; there could be a longer-term impact measured in hospital readmission, care home admission, mortality and unpaid care.
2.3 Are all important and relevant outcomes included?	
No	There were service users' outcomes on health included in the analysis but longer-term service user outcomes and carer outcomes were not included.
2.4 Are the estimates of baseline outcomes from the best available source?	
Yes	From trial data. At baseline, the study groups were well matched in terms of characteristics other than for age – the intervention group was significantly older than the control group.
2.5 Are the estimates of relative intervention effects from the best available source?	
Yes	From trial data.

2.6 Are all important and relevant costs included?	
Partly	Relevant health and social care costs for the first year were included. Not included were longer-term costs, the costs of unpaid care and out-of-pocket expenditure.
2.7 Are the estimates of resource use from the best available source?	
Partly	Information on resource use was collated in a number of ways: retrospectively from NHS and social care records; from computerised records; from questionnaires to practitioners. Travel time was taken from a national source.
2.8 Are the unit costs of resources from the best available source?	
Yes	The unit costs were taken from an appropriate national source (PSSRU Compendium); some unit costs for social care were taken from the local authority; unit costs were not presented separately.
2.9 Is an appropriate incremental analysis presented or can it be calculated from the data?	
Partly	Presented are the costs per day living for both groups; this is appropriate for the primary outcome chosen by the authors but comparability with findings from other studies in this area is limited.
2.10 Are all important parameters whose values are uncertain subjected to appropriate sensitivity analysis?	
Yes	Univariate sensitivity analyses assessed the impact of changes in costs of hospital, rehabilitation unit and residential care (+/- 25%); home visits by social care (increased from 30 to 60 minutes); inclusion of travel costs of personal care assistants; variations in the cost of aids and adaptations. In addition, the impact of missing data on total costs was assessed, substituting those with mean values.
2.11 Is there any potential conflict of interest?	
No	No indication of potential conflict of interest; a particular funding source was not stated.
2.12 Overall assessment	
Overall the quality of this study relatively high with some minor limitations (++).	

Glendinning C, Jones K, Baxter K, Rabiee P, Curtis LA, Wilde A, Arksey H, Forder JE (2010) Home care reablement services: investigating the longer-term impacts (prospective longitudinal study). Social Policy Research Unit, University of York	
Guideline topic: Transition, hospital and community or care settings	
Economic priority area: B, review questions 6 and 7	
Checklist: Section 1	
Is the study population appropriate for the review question?	
Partly	Only 67% of the study population referred to people who had been discharged from hospital; the analysis did not consider this group separately.
Are the interventions appropriate for the review question?	
Partly	Only 1 of the 2 types of reablement was relevant for this review questions because it referred to social care provided in people's home after hospital discharge (or in a few instances from intermediate care); the comparison group referred to home care users at any point in time and was not appropriate for the review question as people who received reablement at hospital discharge were likely to have more substantial needs and risk of readmission than the general population of home care users.
1.3 Is the current social care system in which the study was conducted sufficiently similar to the current UK social care context?	
Yes	The study was a fairly recent UK study covering 5 councils.
1.4 Are the perspectives clearly stated and what are they?	
Yes	The study examined costs from a social care perspective and from a combined health and social care perspective.
1.5 Are all direct effects on individuals included?	
Partly	The study applied 2 standardised outcome measures (EQ-5D and ASCOT) which captured the effects of health and social care to patients comprehensively; time period of 9 to 12 months was appropriate considering the nature of the intervention but because a range of different methods had been applied it was not clear whether (incremental) effects had been captured appropriately. Outcomes to carers were examined qualitatively.
1.6 Are all future costs and outcomes discounted appropriately?	
Yes	Discounting was not necessary because of the short time horizon of 12 months.

1.7 How is the value of effects expressed?	
Yes	Outcomes were measured in natural units and in utility.
1.8 Are costs and outcomes from other sectors (including the value of unpaid care, where relevant) fully and appropriately measured and valued?	
Partly	Service user outcomes were measured comprehensively and carers' outcomes were considered in qualitative analysis; costs to the individuals in form of out-of-pocket expenditure and unpaid care were not captured.
General conclusion	
The study was not sufficiently applicable; the main limitation was that the analysis did not refer specifically to the group of people that used reablement in form of a discharge support service (-).	

Hall CJ, Peel, TA Comans, LC Gray, PA Scuffham (2012) Can post-acute care programmes for older people reduce overall costs in the health system? A case study using the Australian Transition Care Programme. Health and Social Care in the Community 20: 97–102	
Guideline topic: Transition, hospital and community or care settings	
Economic priority area: B, review questions 6 and 7	
Checklist: Section 1	
Is the study population appropriate for the review question?	
Yes	The population was older people above 70 years who were considered eligible for residential care; this is likely to be an important sub-group of the population covered by the scope.
Are the interventions appropriate for the review question?	
Yes	The intervention is a national programme of support provided after hospital discharge and includes social care elements such as help at home and personal care; the programme design was influenced by UK intermediate care models.
1.3 Is the current social care system in which the study was conducted sufficiently similar to the current UK social care context?	

Unclear	The study took place in Australia and also considers international evidence from a wide range of countries including the US. It is not clear whether system was sufficiently similar to UK context.
1.4 Are the perspectives clearly stated and what are they?	
Partly	The perspective was taken primarily from health care perspective but costs of residential care were also included.
1.5 Are all direct effects on individuals included?	
No	Effects on individuals only measured in terms of a range of service outcomes which were based on different sources. Health outcomes were not measured and carers' outcomes were not considered.
1.6 Are all future costs and outcomes discounted appropriately?	
Yes	Costs and outcomes were only measured in the short term.
1.7 How is the value of effects expressed?	
Partly	Service outcomes were expressed in natural units and in monetary form. A threshold value was identified for health utility and expressed in QALYs.
1.8 Are costs and outcomes from other sectors (including the value of unpaid care, where relevant) fully and appropriately measured and valued?	
No	Costs of social care for home help and personal care were only considered if they were part of the intervention. It was unclear whether health service costs had been captured comprehensively. Out-of-pocket expenditure, costs of unpaid care and outcome to carers were not considered.
General conclusion	
The study was not sufficiently applicable (-).	

Review Area 6: Support for carers and families

11a) How should services work with families and unpaid carers of adults with social care needs during admission to inpatient hospital settings from community or care home settings?

11b) How should services work with families and unpaid carers of adults with social care needs during transition between inpatient hospital settings to community or care home settings?

Forster A, Dickerson J, Young J, Patel A, Kalra L, Nixon J, Smithard D, Knapp M, Holloway I, Anwar S, Farrin A on behalf of TRACS Trial Collaboration (2013) A structured training programme for caregivers of inpatients after stroke (TRACS): a cluster randomised controlled trial and cost-effectiveness analysis. Lancet 382: 2069–76	
Guideline topic: Transition, hospital and community or care settings	
Economic priority area: H, review questions 11, parts a and b	
Checklist: Section 1	
Is the study population appropriate for the review question?	
Yes	The study population refers to patients who experienced a stroke and are in a stroke unit. The authors do not report the proportion of patients using formal social care services but it is likely that the majority had social care needs shortly after stroke also because the study excluded patients with a planned discharge 1 week after admission. No further distinction was made between different sub-groups such as age and severities. However, the study population covers an important group of the one addressed in the scope and the review question.
Are the interventions appropriate for the review question?	
Yes	Training is provided to unpaid carers in hospital before discharge to improve the transition between hospital and home.
1.3 Is the current social care system in which the study was conducted sufficiently similar to the current UK social care context?	
Yes	The study took place in England and is of a fairly recent date (carried out between 2008 and 2010).
1.4 Are the perspectives clearly stated and what are they?	
Partly	When findings are presented, a distinction is made between a health and social care perspective and a societal perspective. There is no explanation of the perspective stated in the method section but it could be assumed that the societal perspective included the health and social care perspective together with the costs of unpaid care.
1.5 Are all direct effects on individuals included	
Yes	A wide range of relevant outcome measures were chosen to measure health and wellbeing outcomes for carers and patients.
1.6 Are all future costs and outcomes discounted appropriately?	
Not applicable	Discounting was not necessary because of the short timeframe of 1 year.

1.7 How is the value of effects expressed?	
Yes	Outcomes measured via EQ-5D were expressed in QALYs. All other outcomes were expressed in natural units.
1.8 Are costs and outcomes from other sectors (including the value of unpaid care, where relevant) fully and appropriately measured and valued?	
No	It could be assumed that unpaid care was measured and valued but there is no further detail provided on how it was measured or valued. It is possible that not all relevant service use was captured such as third-sector provided support and privately arranged/financed care.
General conclusion	
This study is sufficiently applicable (+).	
Section 2: Study limitations (the level of methodological quality)	
2.1 Does the model structure adequately reflect the nature of the topic under evaluation?	
Not applicable	This study was an economic evaluation carried out alongside a cluster randomised controlled trial.
2.2 Is the time horizon sufficiently long to reflect all important differences in costs and outcomes?	
Yes	The time horizon was 12 months and it was likely that this captured all important differences in costs and outcomes.
2.3 Are all important and relevant outcomes included?	
Yes	See Section 1.5.
2.4 Are the estimates of baseline outcomes from the best available source?	
Yes	Baseline outcomes were measured at the beginning of the trial.
2.5 Are the estimates of relative intervention effects from the best available source?	
Yes	Estimates were taken from a masked cluster randomised controlled trial. Stroke units had been stratified by geographical region and quality of care. Measures were taken to monitor potential selection bias. In addition, appropriate statistical adjustments were carried out.
2.6 Are all important and relevant costs included?	
No	Costs linked to key health and social care service use were included via an adapted version of a standard tool, the Client Service Receipt Inventory. The costs of unpaid care were included but there was detail provided about the method. It was

	not reported whether out-of-pocket expenditures had been included. There is not sufficient detail provided on how the intervention had been costed.
2.7 Are the estimates of resource use from the best available source?	
Partly	Resource use was captured through different means including the CSRI but insufficient detail was provided to derive conclusions about whether the tool had been applied and analysed appropriately.
2.8 Are the unit costs of resources from the best available source?	
No	There is no detail reported on the source of unit costs.
2.9 Is an appropriate incremental analysis presented or can it be calculated from the data?	
Yes	Findings were presented in form of cost-effectiveness acceptability curves.
2.10 Are all important parameters whose values are uncertain subjected to appropriate sensitivity analysis?	
Yes	Cost-effectiveness acceptability curves have been used to represent uncertainty.
2.11 Is there any potential conflict of interest?	
No	It is stated that there was close collaboration with the National Institute for Health Research (NIHR) but that the study sponsor (Medical Research Council) had no role in study design, data collection, data analysis, data interpretation or writing of the report. There is no detail provided about the relationship between the Medical Research Council and the NIHR but since both bodies fund independent research it is unlikely that there was a potential conflict of interest.
2.12 Overall assessment	
This was an overall high quality study; not much detail was provided about cost data which was a potentially serious limitation; however, economic findings were presented in form of cost-effectiveness curves and thus findings can be taken to inform recommendations (+).	

Patel A, Knapp M, Evans A, Perez I, Kalra L (2004) Training care givers of stroke patients: economic evaluation, British Medical Journal 328: 1–6
Guideline topic: Transition, hospital and community or care settings
Economic priority area: H, review questions 11, parts a and b
Checklist: Section 1

Is the study population appropriate for the review question?	
Yes	The study population refers to patients who experienced a stroke and who are in a rehabilitation unit after hospital discharge; only a proportion of them use formal social care services after rehabilitation but it is likely that most of them have social care needs; negatively, there is no further distinction made between different sub-groups such as age and severities. Overall, the study population covers an important group of the one addressed in the scope and the review question.
Are the interventions appropriate for the review question?	
Yes	Training is provided to unpaid carers at the point of transition (in intermediate care) between hospital and home.
1.3 Is the current social care system in which the study was conducted sufficiently similar to the current UK social care context?	
Partly	The study took place in England; although the study is of an older date it is likely that it is still partly relevant to the current social care context. It would need to be considered more carefully whether a shift of services from hospital to the community since the study's date led to a reduction in average length of stay as this would affect the size of potential cost savings linked to this type of intervention.
1.4 Are the perspectives clearly stated and what are they?	
Yes	It is stated that the perspective is a societal one which was appropriate because the evaluation captured the use of health and social care services as well as unpaid care.
1.5 Are all direct effects on individuals included?	
No	Carers' health-related quality of life outcomes were measured with the EQ-5D which was likely to be insensitive to capturing relevant changes in health; stress and broader wellbeing aspects were not captured. In addition, it might be that intervention had an impact on patients but this was not evaluated.
1.6 Are all future costs and outcomes discounted appropriately?	
Yes	Discounting was not necessary because of the short timeframe of 1 year.
1.7 How is the value of effects expressed?	
Yes	Outcomes were measured via EQ-5D and expressed in health utilities. Service use outcomes were expressed in monetary form (after attaching unit costs).
1.8 Are costs and outcomes from other sectors (including the value of unpaid care, where relevant) fully and appropriately measured and valued?	
Partly	Unpaid care is measured appropriately using first an opportunity cost approach and then testing the impact of valuing unpaid

	care using a replacement cost approach. Not all effects on unpaid carers and patients were captured (see 1.5). It is possible that not all relevant service use resources were captured such as third sector provided support and privately arranged/financed care.
General conclusion	
This study is sufficiently applicable (+).	
Section 2: Study limitations (the level of methodological quality)	
2.1 Does the model structure adequately reflect the nature of the topic under evaluation?	
Not applicable	This study was an economic evaluation carried out alongside a randomised controlled trial.
2.2 Is the time horizon sufficiently long to reflect all important differences in costs and outcomes?	
Yes	The time horizon was 12 months and it was likely that this captured all important differences in costs and outcomes.
2.3 Are all important and relevant outcomes included?	
Partly	See Section 1.5.
2.4 Are the estimates of baseline outcomes from the best available source?	
Yes	Baseline outcomes were measured at the beginning of the trial.
2.5 Are the estimates of relative intervention effects from the best available source?	
Yes	Estimates were taken from blinded randomised controlled trial.
2.6 Are all important and relevant costs included?	
Partly	Costs linked to key health and social care service use were included as well as the costs of unpaid care. Out-of-pocket expenditures were not captured which excluded the costs of privately arranged care at home; but it was unlikely that this would have changed the findings significantly. The authors stated as study weaknesses that they did not include the initial investment into developing the training intervention in the evaluation of costs and that they had difficulties to distinguish the ongoing training costs from the overall cost of therapy.
2.7 Are the estimates of resource use from the best available source?	
Yes	Resource use was captured through different means including the Client Service Receipt Inventory (CSRI) which is a standardised tool that was applied to carers and through records from therapists. Data were then verified against records

	from service providers.
2.8 Are the unit costs of resources from the best available source?	
Yes	Unit costs were from local sources and national data including the PSSRU Unit cost book for health and social care. All unit costs were presented in a table.
2.9 Is an appropriate incremental analysis presented or can it be calculated from the data?	
Yes	The authors did not present final incremental cost-effectiveness values because the intervention was dominant.
2.10 Are all important parameters whose values are uncertain subjected to appropriate sensitivity analysis?	
Yes	Sensitivity analysis was carried out which tested the impact of different costs of unpaid care and different hospital length on findings.
2.11 Is there any potential conflict of interest?	
No	No particular funding source stated and authors were independent researchers.
2.12 Overall assessment	
This was an overall high quality study with only minor limitations and findings can be used to inform the recommendations (++).	

Economic evidence tables

Findings tables

Review Area 1: Transitions for people with mental health difficulties

Davis KK, Mintzer M, Dennison Himmelfarb CR, Matthew JH, Rotman S, Allen J (2012) Targeted intervention improves knowledge but not self-care or readmissions in heart failure patients with mild cognitive impairment. European Journal of Heart Failure 14: 1041–49

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
Davis et al 2012 USA Effectiveness study with 1 economic outcome measure (hospital readmission)	Intervention: Self-care and management provided in hospital by case manager to people with heart failure and mild cognitive impairment; mainly provided during hospital stay and follow-up call after hospital discharge; 44min education by case manager Control: Standard discharge information and education provided by case manager for people with heart failure; 23min education by case manager	Population: People >21yrs; Black, non-Hispanic (42%), White (32%); 75% were >49yrs; diagnosed with heart failure and anticipated return into community; excluded were: people who did not speak English; with Alzheimer's disease; documented severe psychiatric illness; neurological condition; stroke; blind people; those with hearing loss; at end-of-life stage; weighted >350lb; those who could not be reached by phone Study design: Randomised controlled trial, with economically relevant outcome data collected at 30 days after discharge Source of effectiveness data: Interviews as part of randomised controlled trial	1 Outcomes: description and values Description: Screening through the Montreal Cognitive Assessment tool IG N=63, CG N=62 Outcomes measures: Self-Care of Heart Failure Index (SCHFI) measures different; aspects of self-care management, maintenance and confidence The Dutch Heart Failure Knowledge Scale (DHFKS); 30-day readmission rate Other outcome tools were applied but follow-up data were not presented Values: No statistically significant difference improvement in self-care (SCHFI); results presented for subscales; self-care maintenance p=0.711; self-care management p=0.43; and self-care confidence p=0.692 Mean knowledge score (DHFKS) increased significantly p=0.001 2 Costs: description and values Description: Costs not collected; a few data on service description and 1 outcome (= hospital	This study does not present cost-effectiveness results. Because of small numbers of participants and a limited number of individuals and only 1 measured service outcome it was not possible to draw conclusions about cost-effectiveness	Applicability: Not sufficiently applicable because of its narrow focus on a very specific, small sub group and a narrow set of outcomes measured (-) Quality: Not assessed because the study was not sufficiently applicable Summary: This study cannot be used to inform conclusions about cost-effectiveness of interventions to support people with mental health difficulties

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
		Source of resource use data: Service level outcome – 30-day readmission – collected through electronic patient records Source of unit cost data: Not applicable Statistical analysis: General linear mixed modelling to control for baseline differences; readmissions, hospital days and days to first readmission were analysed using Mann–Whitney, Chi square, and Fisher's exact tests (but only findings on 30-day readmission are presented)	readmission) with cost consequence Values: No statistically significant difference in 30-day readmission rate which is slightly higher in IG n=14 (22%) CG n=12 (19%), p-value not reported		
Abbreviations: IG=intervention group, CG=comparison group, RCT=randomised controlled trial, N=number of participants in whole study population, n=number of participants of a sub-group of the study population, p-value = measure that helps to determine statistical significance, usually values under 0.05 or 0.01 are used to confirm that a finding was significant					

Goldberg SE, Bradshaw LE, Kearney FC, Russell C, Whittamore KH, Foster PER, Mamza J, Gladman JRF, Jones RG, Lewis SA, Porock D, Harwood RH (2013) Care in specialist medical and mental health unit compared with standard care for older people with cognitive impairment admitted to general hospital: randomised controlled trial (NIHR TEAM trial). British Medical Journal 347: f4132

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
Goldberg et al 2013 UK Effectiveness study with economically relevant outcome measures	Intervention: Specialist unit on acute geriatric ward; specialist mental health staff included nurses, occupational therapists, psychiatrist, additional time from physio and speech and language therapists, geriatrician, coordination through healthcare assistants; staff training including person-centred dementia care; activities programme; changed design of the environment; carers involvement; detailed discharge letters Control: Standard care which referred to acute geriatric wards (70%) and general medical wards (30%); staff with general	Population: Older people (>65yrs; median age 85yrs) and their family or unpaid carers; identified by physicians at admission unit as presenting with undifferentiated confusion; 25% from care homes; excluded were people with need for other specialist care (e.g. stroke, surgery, critical care) Study design: Randomised controlled trial; N (IG)=310, N (CG)=290 Source of effectiveness data: Randomised controlled trial; 90 days follow-up Source of resource use data: Service level outcomes were collected at baseline and 90 days follow-up Source of unit cost data: Not applicable Statistical analysis: A range of statistical methods (such as Mann Whitney, Chi	1 Outcomes: description and values 1.1 Effect on primary outcome Description: Mortality measured as primary outcome; other primary outcomes were service outcomes (=> presented under 2 costs) Values: No statistically significant differences in mortality; slight changes indicated (but not confirmed) Overall mortality slightly lower in IG; n=68 (IG) vs n=71 (CG); adjusted hazard ratio 1.03 (95% CI 0.72 to 1.45; P=0.89) although mortality in hospital higher in IG; n=29(IG) vs n=22 (CG); but survival at 90 days slightly higher in IG; 78% (IG) vs 75% (CG); 95% CI for difference -4% to 9% 1.2 Effect on secondary outcomes Description: Measured were service users' quality of life via different instruments including EQ-5D; carers' psychological wellbeing via GHQ-12 (General Health Questionnaire, with total score of 36) Values: No statistically significant changes in the (secondary) service users' health and carers' psychological wellbeing outcomes: EQ-5D (self-completed by service users): IG (n=128) vs CG (n=123); mean was slightly higher in IG 0.59 (SD 0.31) vs CG 0.57 (SD 0.31); 95% CI for adjusted difference -0.009 to 0.09, P=0.96 EQ-5D (completed on behalf of service users); IG (n=129) vs CG (n=134); mean slightly lower in IG 0.26 (SD 0.31) vs CG 0.31 (SD 0.33); 95%	This study does not present cost effectiveness results. However, the study did not find any significant changes of relevant individual or service level outcomes so that findings did not suggest that this intervention was likely to be cost-effective This study did not measure the impact on unpaid care and intensity of community care packages	Applicability: sufficiently applicable (+) Quality: Quality of study was moderate with potentially serious limitations; the study only measured service level outcomes relevant from a hospital and residential care perspective (+) Summary: Some useful economic information is presented in this UK study but limitations as an economic study More evaluative research of this and similar alternative approaches is required including studies which measure the costs of health and social care and the impact on unpaid care

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
		Square tests, multiple linear, logistic, negative binominal, Cox regression) were applied to investigate whether chance was the only explanation for differences and to control (adjust) for baseline variables which could have had a potential influence on outcomes	CI for adjusted difference -0.15 to 0.00, p=0.06 Carers GHQ-12 IG (n=132) vs CG (n=121); mean slightly higher in IG 12.5 (IQR=9-17) vs CG 12 (IQR=10-16); 95% CI for adjusted difference 1.0 to 1.23, p=0.05 Potentially adverse effect A higher number falls recorded in IG, 27% (IG) vs 18% (CG), CI 95% for difference -2 to 20%, p=0.10. However, this could be due to better recording practice in IG. 2 Costs: description and values Description: Cost data not collected but service outcomes with cost implications Values: No statistically significant differences in any of the service outcomes after controlling for baseline variables; slight changes indicated (but not confirmed) Slightly more days spent at home in IG vs CG; median 51 (IG) vs 45 (CG) days; 95% CI for difference -12 to 24; P=0.3 (Mean Whitney test) and p=0.7 (likelihood ratio test) Slightly greater likelihood that IG returned home from hospital (74% vs 70%; CI 95% for difference -3% to 11%) Similar number of days for those who returned home; median 70.5 (IG) vs 71 (CG) days; 95% CI for difference -6 to 6.5 days Risk of moving to care home slightly lower in IG; 20% (IG) vs 28% (CG); 95% CI for difference –		

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
			16% to 0%); Risk of readmission slightly lower in IG; 32% (IG) vs 35% (CG); 95% CI for difference -10% to 5% Sub-group analysis Results were not different for specific groups of people such as those admitted with delirium, from care home, those who spent longer than 5 days in hospital, or whether the person using standard care was in geriatric or general ward		
Acronyms: IG=intervention group, CG=comparison group, RCT=randomised controlled trial, N=number of participants in whole study population, n=number of participants of a subgroup of the study population, EQ-5D =standard health measure that allows the calculation of quality-adjusted life years (QALYs), CI=confidence interval as a measure of reliability of an estimate, p-value = measure that helps to determine statistical significance, usually values under 0.05 or 0.01 are used to confirm that a finding was significant, SD=Standard deviation as a measure used to describe variation from the mean, IQR=Interquartile range as a measure to describe variation from the mean					

Review Area 2: Transitions for people with end of life care needs

Brody A, Ciemins E, Newman J, et al (2010) The effects of an inpatient palliative care team on discharge disposition. Journal of Palliative Medicine 13: 541–8

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
Brody et al 2010 USA Effectiveness study measuring with economically relevant service outcomes	Intervention: Palliative care team in hospital (no further information about the service were provided) Control: Usual care, matched cohort from hospital	Population: All individuals using acute care in a large urban teaching hospital and a smaller non-teaching hospital in San Francisco; all people seen by palliative care team from July 2004 to December 2006 and matched cohort of other people who used the hospital during the same time; matching criteria: diagnostic characteristics including disease severity and risk of mortality, age, days hospitalised the year prior to index hospitalisation Study design: Matched case-control design Source of effectiveness data: Data were extracted from hospital's administrative database and Social Security Index Source of resource use data: As above for effectiveness	1 Outcomes: description and values Matched pairs of IG=361 and CG=361 taken from IG N=368, CG N=21,173 Four sub-groups distinguished in the analysis: people discharged from hospital without services, discharged with (home health) services, discharged to another facility, discharged to hospice [Comment from NCCSC economist: Only multivariate results are presented which took account of all variables] IG slightly greater mean length of stay than CG: 10.6days (IG) vs 9.2days (CG); p<0.0001 Discharged with home health services rather than without services: IG 1.59 more likely than CG (p<0.001) Discharged to nursing home: IG 1.52 more likely than CG (p<0.001) IG more likely to access an advanced illness management programme; Admitted to hospice: IG 3.24 more likely (p<0.0001) and IG referred to hospice earlier than CG Of patients who died shortly after discharge the probability that they were dying in a hospice was 17.03 times more likely in IG	The palliative care team helped to increase access to more appropriate services; the final impact on costs could not be established because hospital readmission was not captured	Applicability: Not sufficiently applicable (-) Quality: Not assessed because study was of limited applicability Summary: It was not possible from this study of a hospital-based palliative care team to derive conclusions about potential cost savings or cost-effectiveness

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
		data Source of unit cost data: Not applicable Statistical analysis: Multinomial logit regression on a wide range of variables to identify statistically significant effects after controlling for other variables including demographic factors, mortality, hospitalisation characteristics. Wilcoxon's test and Chi square analysis	2 Costs: description and values Details on the costs of the intervention not available from this paper; data on resource use presented under outcomes		
Acronyms: IG=intervention group, CG=comparison group, N=number of participants, p-value = measure that helps to determine statistical significance, usually values under 0.05 or 0.01 are used to confirm that a finding was significant					

Hatziandreu E, Archontakis F, Daly A in conjunction with the National Audit Office (2008) The potential cost savings of greater use of home and hospice-based end of life care in England, Technical Report, prepared for the National Audit Office, RAND Europe, Cambridge

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
Hatziandreu et al 2008 UK	Intervention: Palliative care in the last 6 to 12 months of life Comparison:	Population: Patients in England 2006 in their last year of life suffering from cancer (n=127,000) or from organ failure due to heart or respiratory diseases	1 Outcomes: descriptions and values Method 1: Literature review Palliative care teams (Higginson et al 2003): effectiveness of these teams in different settings with a small advantage of multidisciplinary	The analysis was a cost savings analysis so that no cost-effectiveness results can be presented Estimated cost	Applicability: The study was not sufficient applicability (-)

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
Decision model, cost savings	Current practice (in England)	(n=30,000); the model (method 2) did not consider patients admitted to the hospital from their own homes but discharged to residential care and patients who stayed long periods in hospital for other reasons (e.g. no support at home) Study design: 2 methods (1) literature review of evidence on effectiveness and resource utilisation; (2) Economic analysis of end of life care in England through Markov modelling Source effectiveness data (method 1): Review of published systematic reviews that assessed effects of palliative care teams (Higginson et al 2003; n=43 studies) and palliative care interventions more generally (Lorenz et al 2008; n=33 systematic reviews and n=89 intervention studies) Source resource use data (method 1): Review of published evidence on resource use in particular	teams over single specialist ones; Palliative care interventions, different types (Lorenz et al 2008): positive end of life care outcomes 2 Costs: description and values Method 1: Authors reported that studies showed consistent cost savings of 30% for cancer patients from fewer hospitalisations or less utilisation of resources during hospital stays in particular intensive care unit; similar trends for patients with other conditions; authors conclude that palliative care led in almost all studies to cost savings; hospice care achieved cost savings only for patients in the last 2 months of life and was otherwise more costly (for patients who stayed for longer periods) Method 2: Different hypothetical scenarios of how reliance on acute care can be reduced by higher levels of palliative care services; In baseline scenario, the total cost of caring for cancer (organ failure) patients in last year of life was £1.8 billion (£553 million) and £14,236 (£18,771) per patient In hypothetical scenarios (assumed are decreases in the proportion of unplanned admissions for cancer patients by 5 to 20% and in the corresponding length of stay from 1 to 5 days of those admissions) showed expected reductions in expenditures ranging from £42 to £171 million per annum Figures for organ failure more uncertain	savings per cancer patient that could be achieved by higher levels of palliative care in the last year of life were £332 to £1,352	Quality: Was not assessed because study was of limited applicability. Prices: UK pounds sterling (£), in 2007 prices Discounting: Not applicable Summary: The study employed a mixed method approach; the main part is a model of the economic impact of investing into palliative care; it demonstrates that palliative care has the potential to achieve substantial savings in hospital costs; the study does not evidence the link between different approaches of palliative care and cost savings; also the costs of unpaid care were not considered

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
		collected alongside RCTs; (method 2): health expenditure and utilisation data Source unit costs: (method 2): Taken from a paper by Coyle et al (1999) and adjusted for inflation; Personal Social Services Research Unit (PSSRU) Compendium for Unit Costs of Health and Social Care (Curtis 2007) Sensitivity analysis (method 2): value ranges were applied instead of point values and 1-way sensitivity analysis carried out			

Higginson IJ, McCrone P, Hart SR, et al (2009), Is short-term palliative care cost-effective in multiple sclerosis? A randomized phase II trial. Journal of Pain and Symptom Management 38: 816–26

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
Higginson et al 2009	Intervention: Fast track multi-professional palliative care team in addition	Population: People with MS, living in South East London, referred by clinician, if deemed to have unresolved	1 Outcomes: Description and values Service user outcomes measured with Palliative Care Outcomes Scale (POS-8); carers' outcomes measured with Zarit caregiver burden	In bootstrapping, with POS-8 as outcome, better outcomes and lower costs 34% of	Applicability: Sufficiently applicable (+)

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
UK Cost-effectiveness	to usual care;* team comprised specialist consultant and nurse, administrator and psychosocial worker; intervention included visits at home/hospital/ hospice, assessment, provision of specialist welfare benefits advice, bereavement support, liaison with local services; intervention similar to palliative care consultation service but could visit people in hospital and in the community Control: Usual care* for 12 wks and then referral to fast track *Usual care referred to standard community and hospital services including neurologists, MS nurses, rehabilitation, neurological and social services	symptoms, psychosocial concerns, end of life issues, progressive illness, complex/palliative care needs; excluded were people with very urgent needs or rapid deterioration (i.e. required immediate referral to service); mean Expanded Disability Status Score (EDSS) was 7.7 and mean age of 52yrs Study design: RCT, data collected at baseline, 6, 12, 18, and 26 wks.; IG: N=25, CG: N=21; groups had similar baseline characteristics Source effectiveness data: Face-to-face interviews with service users; questionnaires handed out to their caregivers for self-completion Source resource use data: It is reported that a standard schedule was used in interviews to collect data on health and social services in previous 3 months	interview (ZBI) No significant difference in POS-8 at 12wks; Significantly reduced ZBI in IG at 12wks.: -2.88 and difference to CG of 4.47 points, CI 95%: 1.05-7.89 Reduced ZBI in CG from 12 to 24wks by 1.58 (95% CI -3.21 to 0.07) 2 Costs: description and values Costs included service use, inpatient care, and informal care over 0–12wks. were £1,789 lower in IG (95% CI, -£5,224 to £1,902); largely because of reduced use of primary and acute hospital services; no significant difference in informal care Sensitivity analysis: Results were similar using no imputed data and using different imputation methods	replications; only lower costs in 55% of replications; with ZBI as the outcome, lower costs and better outcomes in 47% replications and higher costs and better outcomes in 48% replications	Quality: Overall good quality with minor limitations (++) Perspective: Health and social care and unpaid care (societal) Price: In 2005, UK pounds sterling (£) Summary: Fast track multiprofessional palliative care team was likely to be cost-effective, reducing inpatient and community costs, caregiver burden, and possibly patient pain; study findings can be directly used to inform recommendations

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
		Source unit costs: National unit costs from Personal Social Services Research Unit (PSSRU) Compendium for Unit Costs of Health and Social Care; informal care valued with the unit costs of home care worker Statistical analysis: Bootstrapping to explore uncertainty around cost-effectiveness estimates; sensitivity analysis for different ways of handling missing data (last value carried forward, next value carried backward, and mean value)			

Higginson IJ, Bausewein C, Reilly CC, Gao W, Gysels M, Dzingina M, McCrone P, Booth S, Jolley CJ, Moxham, J (2014) An integrated palliative and respiratory care service for patients with advanced disease and refractory breathlessness: a randomised controlled trial. Lancet Respiratory Medicine 2: 979–87

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
Higginson et al 2014 UK	Intervention: Multiprofessional integrated service of respiratory,	Population: Patients were recruited from Three large teaching hospitals and via general	1 Outcomes: description and values Primary outcome was breathlessness mastery at 6wks; secondary outcomes were severity of breathlessness, activity, quality of life (via EQ-	The authors concluded that their study supports the early integration of palliative care with	Applicability: The study was not sufficiently applicable (-)

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
Effectiveness, cost-effectiveness	physiotherapy, occupational therapy, and palliative care assessment and management; brings together assessment and treatment of physical, emotional, psychological, and spiritual concerns, through 1 point of access Control: Usual care following best practice guidance for 6 wks. and then patients were offered breathlessness support service	practitioners in South London; patients had to meet all criteria: refractory breathlessness on exertion or rest (MRC dyspnoea scale score ≥2), despite optimum treatment of the underlying disease; advanced disease such as cancer, chronic obstructive pulmonary disease (COPD), chronic heart failure, interstitial lung disease and motor neuron disease; willingness to engage with short-term home physiotherapy and occupational therapy; and able to provide informed consent Study design: RCT, single blinded; IG: N=42, CG: N=40 Source effectiveness data: Face-to-face interviews at baseline and 6wks Source resource use data: Client Service Receipt Inventory, no further detail provided	5D), palliative needs (via POS), depression and anxiety (via HADS) and spirometry Significant improvement in IG in breathlessness mastery: 16%, mean difference 0.58, 95% CI 0.01-1.15, p=0.048; effect size 0.44 No significant differences in patient-reported secondary outcomes In SA (pre-post) IG: Significant improvements for: mastery, total quality of life score, dyspnoea and emotion, breathlessness, POS total score; no outcome showed deterioration CG: Significant improvement for POS and significant deteriorations for LCADL and HADS Survival Significant difference in survival for the whole sample early after randomisation (generalised Wilcoxon 3.90, p=0·048) Survival rate from randomisation to 6 months better in IG: 50 of 53 [94%] vs 39 of 52 [75%]; Survival differences were significant for patients with chronic obstructive pulmonary disease and interstitial lung disease but not cancer 2 Costs: description and values No significant differences between total formal care costs at 6wks; mean costs in IG £1,422 (bootstrapped 95% CI 897–2101) and in CG £1,408 (899–2023); authors reported that costs varied greatly between individuals but no further detail provided	respiratory medicine in non-cancer (e.g. COPD, interstitial lung disease, and heart failure), focused on a group with refractory breathlessness; and in cancer patients The authors state that survival outcomes need testing in multicentre, longer-term trials including a wider range of urban and rural settings	Quality: Was not assessed because study was of limited applicability. Perspective: Health and social care Price: In 2011–12, UK pounds sterling (£) Summary: The paper did not report on costs in detail and was thus not sufficiently applicable as a cost-effectiveness study. However, with some level of caution, findings can be used to inform recommendations

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
		Source unit costs: UK 2011–12 unit costs from Personal Social Services Research Unit (PSSRU) Compendium for Unit costs of Health and Social Care Statistical analysis: Student's t test for continuous variables, Chi square and Fisher's exact test for categorical variables; Sensitivity analysis (SA): analysis of covariance (ANCOVA) to account for baseline differences, multiple imputations of missing data, pre-post analysis; survival analysis to 180 days using Kaplan-Meier and Wilcoxon test		
CRQ=Chronic Respiratory Disease Questionnaire, NRS=Numerical Rating Scale, HRQL=health-related quality of life, EQ-5D=quality of life, LCADL=London Chest Activity of Daily Living survey, POS=Palliative Care Outcome Scale, HADS= Hospital Anxiety and Depression Scale, FEV1=forced expiratory volume in 1s, PEF=peak expiratory flow, SaO2%=oxygen saturation					

Smith S, Brick A, O'Hara S, Normand C (2014) Evidence on the cost and cost-effectiveness of palliative care: a literature review. Palliative Medicine 28: 130–50

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
Smith et al 2014 International Literature review of cost and cost-effectiveness studies	Intervention: Palliative care interventions in different settings including hospice care, hospital-based palliative care Control: Usual care Three studies compared different palliative strategies	Population: Not specified; but many studies refer to people with cancer Study design: Literature review 2002-11 identified 5 RCTs, 2 non-randomised trials, 34 cohort studies, 2 case studies, 2 before-and-after studies, 1 'other' study; only 2 UK studies; majority from US; quality assessment based on 31 indicators Source of effectiveness data: Only 1 study reported on cost-effectiveness (Higginson et al 2009, UK); 19 studies measured service use outcomes Source of resource use data: variation in the cost data; some studies relied on charges, others used observed expenditures and a few studies applied detailed bottom-up estimates based on actual resource use Source of unit costs: varies sources including insurance charges	The authors applied quality assessment but presented findings of all studies; they stated that RCTs were of good quality and that quality of cohort studies varied [Insert from NCCSC economist: Note that findings are only presented from studies that were RCTs, non-randomised trials and cohort studies; furthermore, studies on paediatric palliative care and studies from Taiwan and Israel were excluded; we presented findings by intervention type and setting and then start by presenting the strongest RCT evidence followed by non-randomised trials and then cohort studies] Palliative care services generally (investment in services over time) Cohort studies Canada: Fassbender et al (2005), N=16,282 who died of cancer 1993–2000, introduction of palliative care services Referrals to any type of palliative care increased over time and total costs in the last year of life reduced over time Proportion of individuals admitted to hospital declined from 95% to 83% Spain: Gomez-Batiste et al (2006), N=100, in 1992 and in 2001, costs in 1992 prices, introduction of palliative care services Reduced costs in last 6 weeks of life from EUR 5,068 to EUR 1,963 Significantly reduced hospitalisations 58% vs	The authors concluded that despite variations in study type, characteristic and study quality, there are consistent patterns in the results that showed that palliative care was most frequently found to be less costly relative to comparator groups and often the difference in costs was statistically significant Palliative care services, generally; 2 cohort studies showed reduction in costs Hospital-based palliative care: Most studies (including 1 RCT) found that total costs as well as daily costs reduced and that this was not due to reduced length of stays in hospital but due to reduced use of	Applicability: Not sufficiently applicable because all but one studies measured costs only and there was insufficient detail about the method of how costs had been calculated (-) Quality: Was not assessed because study was of limited applicability Summary: Although the study did not allow deriving conclusions about cost-effectiveness directly, some of the findings can inform recommendations on likely cost savings in particular in combination with findings from other studies

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
			72%, p<0.001 Reduced length of stay 19.9 vs 25.5 days, p=0.002 Hospital-based palliative care (vs usual hospital based care) Significant reduction in costs and no difference in length of stay RCT, US Gade et al (2008), IG: N=275, CG: N=237; costs included all health services over 6 months after index hospital discharge; probably 2002/3 prices Costs in IG significantly lower: US$14,486 vs. US$21,252, p=0.001 Significant reduction in intensive care unit stays: US$6,421 vs. US$13,275, p=0.009 No significant diff. in length of stay, or in number of hospital readmission Cohort studies from US Morrison et al (2008), IG: N=2,630, CG: N=18,427, costs included healthcare expenditure, 2004 prices Costs for patients discharged from hospital were US$1,696 lower in IG per admission (p=0.004) and US$174 lower per day Costs for patients who died in hospital, costs in IG were US$4,908 lower per admission (p=0.003) and US$374 per day, p<0.001 Penrod et al (2006), IG: N=82, CG: N=232	intensive care units; 2 US studies reported reduction in daily but not in total costs and 1 study from Belgium reported an increase in costs Outpatient palliative care Evidence from one large non-randomised controlled trial suggests that there was no change in costs Home-based palliative care Evidence from 1 RCT (US) showed significant reduction in daily and total costs of care due to reduced use of acute inpatient use; the reduced use of inpatient services was confirmed by 3 cohort studies from US and Italy but final cost impact less clear and 1 study (Greece) showed an increase	

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
			Significantly reduced inpatient costs: US$239, 95% CI=US$387-US$122 Significantly reduced likelihood of IG to be admitted to intensive care unit Morrison and Dietrich (2011), IG: N=290, CG: N=1,427, costs in 2007 prices Reduced health expenditure for people discharged alive US$32,643 vs US$36,741 p<0.05 Reduced average total daily costs: US$490, p<0.0001 No significant difference in length of stay Penrod et al 2010, IG: N=606, CG: N=2,715 Significantly reduced daily hospital costs in IG: US$464, 95% CI=US$515-US$413 (year not stated) Bendaly et al (2008), IG: N=61, CG: N=55 Significant lower hospital charges for IG (p<0.001) No significant diff. in length of stay Smith et al (2003), IG: N=38, CG: N=38 Significant reduction in totals hospital costs White et al (2006), IG: N=1,774, CG: N=520 Reduction in direct cost per day Cohort study, France Tibi-Levy et al (2006), IG: N=60, CG: N=59, compared rehabilitations units versus acute units for palliative care Significant cost reduction in IG (p<0.05) No significant diff. in length of stay	in costs; impact on unpaid care not evaluated Palliative day care Evidence from 1 UK study on service use which did not suggest cost savings Hospice Evidence from 7 cohort studies found reduction in costs for short-stays in hospice for the last 1–3 months in life; longer stays in hospice (over the last year of life) seemed to be linked to higher costs with the exception of cancer patients for whom long stays did not affect costs or led to cost reductions; findings from 1 study showed that there was no impact on individuals' out-of-pocket expenditure but on unpaid care with higher costs in the intervention group	

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
			Reduced daily costs but not total costs Cohort studies, US Hanson et al (2008), IG: N=104, CG: N=1,813, costs in 2004 prices No significant difference in total costs per admission Significant reduction in daily costs US$897 vs US$1004, p = 0.03 No significant difference in length of stay Cowan (2004), IG: N=164, CG: N=152 Significantly lower mean daily charges (p=0.006) but higher total charges and longer length of stay in IG Increased daily costs Cohort studies, Belgium Simoens et al (2010), IG: N=88, CG: N=53, patients with prognosis of less than 1 month, Significant increase in daily costs per patient in IG (p=0.002), With exception of acute ward: IG significant reduction (p=0.025) Outpatient palliative care vs. usual care (at home) Non-randomised controlled trial, US, Rabow et al (2004), IG: N=1,843, CG: N=2,199; costs included physician office visits, emergency department visits, acute inpatient care (year not	Coordinated care, case management Two RCTs did not identify significant changes in costs or service utilisation; 3 cohort studies showed reduction in costs but for different reasons and 1 study has weak study design; so that overall impact on cost not clear	

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
			stated) No significant increase in costs: IG US$47,211 vs US$43,338, p=0.8 Home-based palliative care vs usual home (health) care RCT, US Brumley et al (2003), IG: N=145, CG: N=152; costs for selected range of relevant health services: acute inpatient, ambulatory, home health, palliative care; costs in 2002 prices Significant reduction in costs after adjusting for shorter survival period in IG: US$7,552 (95% CI=-12,730 to -2,374, t=-3.63, p<0.001) Significant reduction in daily cost of care in IG: US$95.30 vs. US$212.80, t=-2.417, p=0.02 IG had lower use of acute inpatient use and physician visits but higher use of home visits Study was based on initial findings from a previous non-randomised controlled trial by the same authors in which costs in IG were reduced by US $6,580 Cohort study, US Enguidanos et al (2005) Significantly reduced staff costs in IG: US$5,936, in 1999 prices, p=0.001 over the last year of life Cohort studies, Italy Miccinesi et al (2003), IG: N=299, CG: N=2,564;		

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
			year of costs not stated Significant reduction in acute inpatient costs in last 3 months of life: IG €2388 vs CG €3336, p<0.001 No sig. diff. in day hospital costs, p=0.934; Significant reduction in inpatient admission in IG during the last 3 months of life: relative risk 0.75, 95% CI=0.66–0.86 Significant reduction in proportion of days spent in hospital: relative risk 0.51, 95% CI = 0.48–0.53 Costantini et al (2003), IG: N=189, CG: N=378 Significant reduction in days spent in hospital, in percentage: IG 19%; 95% CI=15%–23%, CG 30.3%; 95% CI=26%–34% Cohort study, Greece Tzala et al (2005), IG: N=27, CG: N=25 Significantly increased costs most and significantly increased access to blood monitoring (p<0.001) Palliative day care (vs community care) Cohort, UK, Douglas et al (2003), IG: N=120, CG: N=53 Palliative day care substituted for community care for patients who lived >100 days after attendance Indicative patterns: patients attending palliative day care for >100 days, had fewer home care interventions, but increased access to specialist		

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
			doctors relative to CG Hospice (vs non-hospice, nursing home) Cohort studies, US Taylor et al (2009); matched control groups, IG: N=1,819; CG: N=3,638; costs included healthcare expenditure, in 2003 prices; over the time from initiation of hospice care to death Reduction in costs: US$2,309, p<0.001 In another study by the same authors on the same participants it was found that there were no significant differences in out-of-pocket expenditure, but significantly higher informal care costs in IG Lewin et al (2005), IG: N=17, CG N=67, patients with prognosis of less than 2 months, price year not stated Significant reduction in total cost per person in IG over last 60 days of life: US$15,164 vs US$59,319, p=0.0001; Significant reduction in daily cost per day in IG: US$333 vs US$969, p=0.0011; Significant reduction in length of stay in hospital over last 60 days of life: 3.6 days vs 11.2 days, p=0.005 No sig. differences in outpatient visits, p=0.513 Campbell et al (2004), IG: N=44,165, CG: 201,199 No difference in expenditure in last year of life except for people >85yrs and for non-cancer patients for which expenditure significantly higher in IG (p<0.05)		

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
			Emanuel et al (2002), IG:N=3,745, CG=30,377; Expenditure lower in IG for cancer patients in last year of life, but higher expenditures reported for other groups Gozola et al (2004), Miller et al (2004), IG: N=1,308, CG: N=4,466; Significant reduction in expenditure in last month of life for short-stay nursing home, non-cancer patients ($p<0.001$); Higher expenditure for long-stay nursing home, non-cancer hospice (not significant for people with dementia); No significant difference in expenditure for short- or long-stay cancer residents Pyenson et al (2004), IG; N=1,843, CG: N=2,199 Significant reduction in expenditure during terminal phase of care for congestive heart failure, liver and pancreatic cancer ($p<0.05$) but higher for stroke ($p<0.05$) Stevenson et al (2007), IG: N=5,622, CG: N=1,665 Significant increase in physician services (OR = 2.55, 95% CI=1.68–3.87), prescription medicines (OR=1.6, 95% CI=1.16–2.2) and other services Average length of enrolment sig. shorter for institutional hospice users than for home hospice users ($p<0.001$) Coordinated care, case management (different comparison groups)		

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
			RCTs, US Engelhardt et al (2006), IG: N=93, CG: N=76; care coordination and support provided by allied health professionals; costs included inpatient, outpatient, nursing home, inpatient hospice and other costs (e.g. diagnostic services) for participants and non-participants from 6 months prior to enrolment in the programme to 6 months post enrolment; year of cost not stated: no significant reduction in IG: US$12,123 vs US$16,295 (p=0.18) Bakitas et al (2009), IG: N=161, CG: N=161; nurse-led, palliative care-focused intervention addressing physical, psychosocial and care coordination: No differences between IG and CG in number of days in hospital (p=0.14), number of days in intensive care unit (p>0.99) or number of emergency department visits (p=0.53) Cohort studies, US Back et al (2005), case management, IG: N=82, CG: N=183; results on number of acute care days in last 60 days of life depended on the length of enrolment (e.g. reduced for IG enrolled >113 days, OR=0.306, 95% CI=0.117–0.802); significantly shorter length of stay per acute care admission (p<0.05) Ciemins et al (2007), IG: N=282, CG: N=128, palliative care consultation service; reduction in mean daily costs in IG by 33% (p<0.01) and 14.5% lower than in CG (p<0.01), total costs per admission 19.2% lower in IG (p<0.001), no significant diff. in length of stay Cassel et al (2010), IG: N=91, CG: N=20,		

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
			relatively weak study design; reduction in hospital charges, no significance reported Fast track palliative care RCT, Higginson et al (2009), findings of this study are reported in the evidence table separately		
Acronyms: IG=intervention group, CG=comparison group, N=number of participants, p-value = measure that helps to determine statistical significance, usually values under 0.05 or 0.01 are used to confirm that a finding was significant					

Review Areas 3, 4 & 5: Hospital admission and discharge planning and reducing 30-days readmission, geriatric assessment and care planning

Categorised by intervention types

Discharge planning process (different populations and as part of other service provision)

Preyde M, Macaulay C, Dingwall T (2009) Discharge planning from hospital to home for elderly patients: a meta-analysis. Journal of Evidence-Based Social Work 6: 198–216

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
Preyde et al 2009 International Effectiveness including resource use outcomes	Intervention: All forms of discharge planning; no exclusion based on criteria but their most common features were: multidisciplinary; coordinated by 1 single professional; comprehensive, early, or geriatric assessment; education package; patient-centred care; intervention types were grouped in (1) provision of home follow-up; (2) disease-specific focus; (3) combination of 1 and	Population: Older people (65yrs or older) including those with specific risks such as heart failure or frailty; recruited from emergency departments, geriatric hospitals or wards, orthopaedic, university or urban hospitals Study design: Systematic review and meta-analysis of randomised controlled trials and quasi-experimental studies Source of effectiveness data: From trial/study data Source of resource use data:	1 Outcomes: description and values Most common primary outcomes were those of hospital resource utilisation, reported by length of stay, readmission, or cost The authors reported a large effect on patient satisfaction (mean effect size (ES) 0.83), moderate effects on quality of life (mean ES 0.45) and readmission (mean ES 0.45), and small effect on function (ES 0.31) and length of stay (ES 0.26) 2 Costs: description and values The authors reported that 5 studies identified cost savings from hospital costs, and that 2 studies identified reduced readmission costs. In addition the authors explain that some studies measured additional community-based costs and that there were mixed findings	Reported was an overall mean d of 0.51 and standard deviation of 0.35	Applicability: Major limitations; the focus of the meta-analysis was inappropriate as highly diverse interventions were combined and applicability could not be sensibly assessed; no further critical appraisal was thus carried out (-) Quality: The study was of limited applicability so that appraisal of quality was not carried out Summary: Findings

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
	2; (4) environment or community linkage; (5) focus on medical care (pharmacological/GP) Control: No detail provided.	From trial/study data Source of unit costs: No detail provided Statistical analysis: The d-index was used to estimate size of intervention effects			cannot be used to inform recommendations

Saleh SS, Freire C, Gewndolyn MD, Shannon T (2012) An effectiveness and cost-benefit analysis of a hospital-based discharge transition program for elderly Medicare recipients. Journal of the American Geriatrics Society 60: 1051–6

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
Saleh et al 2012 USA Cost-saving	Intervention: spanned 45 days from discharge; nurse provided; included were patient-centred health record, structured discharge preparation checklist, patient education, 3 home visits, follow-up visits Control: Standard discharge process	Population: Patients before discharge from hospital; excluded were: people with dementia without a carer, with severe psychiatric conditions, planned readmission, end-stage renal disease, primary diagnosis of tumours, assisted living and care home residents; individuals in IG were more likely to be referred to home care services Study design: Randomised	1 Outcomes: description and values Self-management skills and abilities: 15-item version of Coleman's Care Transition Measure; measured at 2 points in time, at baseline (t=0) and at 6 months (t=1) Increased aspects of self-management and skills: how to manage their health (p=0.003); understanding warning signs and symptoms (p=0.004); understanding healthcare plan (p=0.03); understanding purpose of taking medications (p=0.08); it is reported that similar trend was observed when comparing level of change in understanding side-effects of medications	Cost-benefit ratio of 1.09, i.e. for every 1 USD spent on the program, a saving of 1.09 USD	Applicability: Not sufficiently applicable (-) Quality: The study was of limited applicability so that appraisal of quality was not carried out Summary: Findings cannot be used to inform

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
		controlled trial; IG: N=160; CG: N=173 Source of effectiveness data: From trial; questionnaires to patients at 2 time points Source of resource use data: Hospital claims were used to evaluate readmission and charges Source of unit costs: Hospital claims Statistical analysis: Statistical analysis to compare baseline characteristics (chi-square) which also included discharge risk	2 Costs: description and values Costs savings were estimated based on costs of the program and the benefits from reducing readmissions Charges were classified as total, ancillary (e.g. diagnostic services) and accommodation (mostly beds, meals and nursing care); IG less likely to be readmitted (48.2% vs. 58.2%, p=0.08). most difference between 91 to 365 days after discharge Total average cost saving: USD 1,034 Costs of programme included salaries and benefits of care transition coaches, travel, miscellaneous costs; excluded were evaluation costs Programme costs: USD 946		recommendations
Acronyms: IG=intervention group; CG=comparison group; p=p-value; N=number of study participants					

Shepperd S, Lannin NA, Clemson LM, McCluskey A, Cameron ID, Barras SL (2013) Discharge planning from hospital to home (review) Cochrane Database of Systematic Reviews Issue 1

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
Shepperd et al 2013	Intervention: Discharge planning	Population: All patients in hospital (acute, rehabilitation	1 Outcomes: description and values A range of outcomes were reported including	No combined values were reported	Applicability: Not sufficiently

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
International Effectiveness studies including resource use and costs	defined as individualised plan developed prior to hospital discharge; stand-alone or embedded within another intervention, for example as a component of stroke unit care or part of comprehensive geriatric assessment; interventions could include post-discharge support; some intervention specifically included social care involvement Control: Usual care often with some form of discharge planning (but without formal coordinator)	or community) irrespective of age, gender or condition; majority of studies on older people with medical condition; 1 study recruited patients from psychiatric hospital, 1 from both psychiatric and general hospital Study design: Systematic review and meta-analysis of 24 randomised controlled trials (N=8,098); 5 studies were from UK Source of effectiveness data: from trials; Source of resource use data: from trials through resource use outcomes or costs reported in trials (no detail reported); Source of unit cost: Not reported Sensitivity analysis (SA) Risk ratios (RRs) were calculated from fixed-effect models and mean differences	length of hospital stay, readmission rate, patients' place of discharge, mortality, health outcomes, patients' and caregivers' satisfaction Older people Small, significant reduction in hospital length of stay (mean difference -0.91, 95% CI -1.55 to -0.27; 10 trials); after additional adjustment this increased slightly (mean difference -1.01, 95% CI -1.61 to -0.40) Older people with medical condition Significant reduction in readmission rates within 3 months of discharge (RR 0.82, 95% CI 0.73 to 0.92; 12 trials) No significant difference between groups for mortality (RR 0.99, 95% CI 0.78 to 1.25, 5 trials) or being discharged from hospital to home (RR 1.03, 95% CI 0.93 to 1.14, 2 trials); this was similar for other patients recovering from a surgery and a mix of medical and surgical conditions Limited evidence on patient health outcomes, with 1 trial reporting better quality of life and activities of daily living in the CG (which in this case was multidisciplinary care); some evidence that IG reported higher satisfaction. The evidence for other outcomes was mixed or did not find any significant effect 2 Costs: description and values		applicable (-) Quality: The study was of limited applicability so that appraisal of quality was not carried out Summary: Findings cannot be used to inform recommendations

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
		for length of hospital stay; heterogeneity was measured with Cochran's Q test and the I2 statistic	Different methods were used to calculate costs, and charges varied between health systems; 3 trials measured effect of intervention on overall healthcare costs and reported a cost saving in IG of 412 USD, 460 USD and 519 euros Other studies measured certain parts of health care costs: One study found no significant differences in costs between the 2 groups for their initial hospital stay but a significant reduction for IG in hospital costs (including readmission costs) at 2 weeks follow-up (difference -$170,247, 95% CI -$253,000 to -$87,000); and at 2 to 6 weeks follow-up (difference -$137,508, 95% CI -$210,000 to -$67,000), this finding did not apply to patients with surgical conditions One study found lower costs for laboratory services for patients receiving discharge planning (mean difference per patient -£295, 95% CI -£564 to -£26) nut no significant use of overall health service use One study measured the use of primary care and reported a significant increase (mean number of visits to general medical clinic for IG 3.7 days, CG 2.2 days; p<0.001); another trial did not identify significant relationship in GP consultations at 3 months (mean difference 2.7%, 95% CI -7.4% to 12.7%) and at 6 months (mean difference 0.3%, 95% CI -11.6% to 12.3%)		
Acronyms: IG=intervention group, CG=comparison group; CI=confidence interval; RR=relative risk; N=number of participants in the study					

Stauffer BD, Fullerton C, Fleming N, Ogola G, Herrin J, Stafford PM, Ballard DJ (2011) Effectiveness and cost of a transitional care program for heart failure. Archives of Internal Medicine 171: 1238–43

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
Stauffer et al 2011 USA Effectiveness study measuring resource use outcomes	Intervention: 3-month long transitional care intervention, provided by nurse, min. 8 home visits; first 72hrs after discharge to carry out comprehensive assessment including social support needs; availability of nurse via telephone; intervention included education Comparison: Patients not enrolled in the study received routine care, including care management assistance with discharge planning and referral for home health care services if appropriate	Population: Older people 65yrs+ in hospital with principal diagnosis of heart failure; excluded patients who were discharged to institutional care Study design: Prospective study (before/after) with concurrent controls; patients screened within 48hrs of hospital admission and enrolled to pilot; patients from other acute hospitals within the same region Source for effectiveness data: administration system Source of resource use: diagnoses related group severity classifications from administration system Source of unit costs: average cost and reimbursement estimates from hospital Statistical analysis: Pre- and post-interventions	1 Outcomes: description and values Only resource use outcomes were measured (presented under costs) Costs: description and values 30-day readmission rate; length of stay; direct costs over the period of 60 days No significant effect of intervention on length of stay Adjusted 30-day readmission was 48% lower for the pilot group after intervention Average cost of intervention per patient: USD 1,110 Costs associated with the intervention were not recovered through reductions in index admission direct inpatient costs – the intervention did not save money from the hospital perspective. Additionally, under the current reimbursement system, the hospital lost revenue by preventing readmissions and had a reduction in the contribution margin for an episode of care	The study only measured resource use relevant outcomes and direct costs (from the perspective of hospital); it is unlikely that the intervention led to costs savings	Applicability: Not sufficiently applicable (-) Quality: The study was of limited applicability so that appraisal of quality was not carried out Summary: Findings cannot be used to inform recommendations

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
		comparisons; log-gamma to model direct costs; bootstrapping to estimate effect of intervention on costs and outcomes			

Discharge planning (with and without rehabilitation) for older people

Fox MT, Persaud M, Maimets I, Brooks D, O'Brien K, Tregunno D (2013) Effectiveness of early discharge planning in acutely ill or injured hospitalised older adults: a systematic review and meta-analysis. BMC Geriatrics 13: 1–9

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
Fox et al 2013 International Effectiveness study with patient and resource outcomes	Intervention: Early discharge planning initiated within 24 to 48hrs of index hospital admission, most often initiated by nurses Control: where described, usual care consisted of unstructured routine or standard discharge planning; 1 to 3 days prior to index hospital discharge	Population: Older people above 65yrs (N=1,736 mean age 79yrs, female 60%); in acute illness or injury phase ('period during which an illness or injury is being intensively treated and stabilised') Study design: Systematic review of published and unpublished randomised control and quasi-experimental trials using Cochrane Collaboration Protocol; mainly from US, no UK study Sources of effectiveness data: from trials Sources of resource use data: from trials Sources of unit cost data: not applicable Sensitivity analysis: the	1 Outcomes: description and values Service outcomes (presented under costs) and mortality (from index admission to discharge or within 2, 3, 6 or 12 months), quality of life (measured via different outcome measures including SF-36, Minnesota Living with Heart Failure Questionnaire, Chronic Heart Failure Questionnaire), satisfaction (using different Likert type scales) Mortality (n=5 trials): no significant difference in mortality within 2 to 12 months after index discharge Quality of life (SF-36; n=2 trials): no differences Satisfaction: no differences 2 Costs: description and values Index length of hospital stay, hospital readmission (measured at 1, 2, 3, 6 or 12 months of index hospital discharge), readmission length of hospital stay within 3 or 12 months Index length of hospital stay (n=7 trials): No significant difference Hospital readmission (n=7 trials): Significantly reduced hospital readmissions within 1 to 12 months; RR=0.78, 95% CI=0.69-0.90; p=0.0003; 22% reduction in hospital	No combined figures presented as these studies were not economic evaluations but studies which measured resource use relevant outcomes in addition to patient outcomes; patient outcomes did not significantly differ; cost savings to be expected from reduction in hospital readmission and length of stay of readmission; but cost of the intervention and other use of community resources were not presented so that is was not possible to conclude whether there was likely to be a net saving	Applicability: Not sufficiently applicable because of lack of social care component and because unclear how interventions relate to social care needs of population (-) Quality: The study was of limited applicability so that appraisal of quality was not carried out Summary: Findings cannot be used to inform recommendations

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
		authors stated that heterogeneity was not significant	readmission Readmission length of hospital stay (n=3 trials): Significant reduction in readmission length of stay of almost 2.5 days (WMD=-2.47, 95% CI=-4.13- -0.81, p=0.004)		
Acronyms: RR=relative risk; CI=confidence interval; WMD=weighted mean difference; n=number; p=p-value					

Hammar T, Rissanen P, Peraelae ML (2009) The cost-effectiveness of integrated home care and discharge practice for home care patients. Health Policy 92: 10–20

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
Hammar et al 2009 Finland Cost-utility	Intervention: Integrated home care at discharge practice applied to home care and hospital staff; care/case manager pairs of a home nurse and a home aid/helper Control: Usual care, no detail provided	Population: Older people above 65yrs (mean age 82; 74% female) admitted to hospital from home; excluded were patients with primary diagnosis of cancer, dementia or psychiatric illness and those who were not discharged home Study design: Cluster randomised controlled trial in 22 municipalities Source of effectiveness data: From trial; patient interviews	1 Outcomes: description and values N=668 at discharge (t=0), n=580 at 3wks (t=1), n=450 at 6 months (t=2) Health-related quality of life (HRQoL) was measured using the Nottingham Health Profile (HP) and EQ-5D; NHP is composed of 38 yes/no assertions from which 6 dimensions from 0 (best) to 100 (worst) can be derived; EQ-5D is a generic HRQoL-measure which captures 5 dimensions: mobility, self-care, usual activities, pain/discomfort and anxiety/depression; the weighted index (utility) value varies between 0 (dead) to 1 (best) Before hospital admission and at 6 months, IG had better HRQoL measured with the EQ-5D (if	Results presented on cost-effectiveness plane and acceptability curves; the presentation of their findings is slightly misrepresented; however, the figures show that intervention was highly likely to be cost-effective at willingness to pay thresholds used by NICE (£20,000 to £30,000); ICER for EQ-5D ranged from EUR 10,951 to	Applicability: Sufficiently applicable (+) Quality: Overall high quality with minor limitations (++) Perspective: Health and social care Discounting: Not necessary Prices: Euros, in

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
		at discharge, 3wks and 6 months; medical records and care register data (for care episodes, hospital readmission and death) compiled through personal identification number Source of resource use data: Patient interviews which asked about main health and social services during 1wk before index hospital admission, at 3wks and 6 months post-discharge; care registers for hospital and residential care use Source of unit cost data: Unit cost for health care services in Finland 2001 (Stakes, Aiheita 1/2003, Helsinki, Finland) Statistical analysis: Analysis of differences in resource use and costs using means (t-test) and medians (Mann-Whitney U test, Wilcoxon 2-sample test); hierarchical regression models to identify cluster effects; bootstrapping to assess the variability of cost-effectiveness estimates	deceased people were included): at t=0: 0.6 vs 0.5, p=0.002, t=2: 0.5 vs. 0.4, p=0.021 At 6-month follow-up, the IG scored higher on NHP values in energy, pain, emotional reactions and social isolation Functional ability (FA) was assessed using a Finnish version of the Activities of Daily Living (ADL); findings were not presented in this paper Mortality and readmission: No difference in mortality between IG and CG at 3wks and 6 months 50% of patients were readmitted during follow-up period (mean 1.7 months) with no difference between IG and CG 2 Costs: description and values At 3wks and 6 months, IG used less home nursing, laboratory, meals-on-wheels, bathing, cleaning and security telephone services than CG At 6 months: IG had less visits to physician In summary statistics, only use in laboratory was different between IC and CG, with IG using less laboratory services at 3wks (mean 0.2 vs 0.5, p=0.013) and reduced cost mean €1.2 vs €2.3, p=0.013) Total costs (including deceased patients) reduced insignificantly in IG: t=0 €2,831 (SD €2,655) vs €2,722 (SD €2,691); t=1 €6,678 (SD	12,274 (£6,899 to £7,733)	2001 prices (1Euro=£0.63, in 2001 prices) Summary: Integrated discharge planning and home care was likely to be cost-effective. Findings can be used to inform cost-effectiveness recommendations under consideration of the different care system

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
			€5,574) vs €7,773 (SD €6,884)		

Lim WK, Lambert SF, Gray LC (2003) Effectiveness of case management and post-acute services in older people after hospital discharge. Medical Journal of Australia 178: 262–6

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
Lim et al 2004 Australia Cost-effectiveness, cost consequences	Intervention: Post-acute care (PAC), hospital-based nurse/allied health professional led discharge planning and case management with budget for community services Control: Usual hospital discharge planning, provided by ward nursing staff and social worker limited number of nurse visits and community services	Population: Older people (65+) in acute ward for more than 48hrs and discharged home; excluded were end of life, psychiatric and obstetric patients, and those who had been admitted from a nursing home Study design: Prospective multicentre, randomised controlled trial, with 6 months follow up; IG: n=311, CG: n=287 Source of effectiveness data: From trial, review of hospital case notes and death registers Source of resource use data: From trial, review of hospital case notes, from death	1 Outcomes: description and values Primary outcome was hospital readmission at 6 months; secondary outcomes were quality of life measured through Assessment of Quality of Life questionnaire and carer stress measured through the Caregiver Strain Index (measured from 0 to 10) at 1 month and mortality There was no difference in mortality (6%); carers stress (mean score: 3); unplanned readmission (mean 0.4 vs 0.5, p=0.19); emergency department visits (mean 0.1, p=0.95); Significantly greater improvements of IG in independent living (p=0.002) and quality of life (p=0.02) 2 Costs: description and values Cost of the intervention per patient: $292.40 No significant differences in total costs of community services used in the 12 months before the index admission ($216,456 vs $341,314) and the 6 months after discharge ($142,749 vs $150,962)	Results were not presented in combined form but authors concluded that the intervention appeared to be beneficial, led to an improvement in quality of life and a reduction in healthcare costs	Applicability: Sufficiently applicable (+) Quality: Overall good with minor limitations (++) Perspective: Health and social care Discounting: Not necessary Prices: In Australian Dollars, in 1998/9 prices Summary: Integrated discharge planning and community care can be cost-effective

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
		registers, hospital database and providers of community services; cost of coordinating care was calculated as the budgets of the PAC projects Source of unit cost data: Unit costs were obtained from local providers of community services Statistical analysis: t-test for comparison between total costs and average cost per patient, log rank analysis for mean cost differences	Significantly reduced hospital bed costs at 6 months: mean difference $1,770 (95%CI, CI: 237 - 3,304; p=0.02) Significantly reduced total costs at 6 months: $2,843,162 vs $3,067,169; mean difference $1,545; 95% CI: 11- 3,078; p=0.048		due to improvements in quality of life and reduction in hospital bed days. Findings can be used to inform cost-effectiveness recommendations under consideration of the different care system
Acronyms: IG=intervention group, CG=control group, CI=confidence interval, MD=mean difference					

Miller P, Gladman JR, Cunliffe AL, Husbands SL, Dewey M E, Harwood RH (2005) Economic analysis of an early discharge rehabilitation service for older people. Age and Ageing 34: 274–80

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
Miller et al 2005 UK Cost-utility	Intervention: An early discharge and rehabilitation service (EDRS) comprising home care and rehabilitation package with max. 4 visits/day	Population: Older people above 65yrs (mean age: 80yrs; 67% female; 67% living alone); with social and rehabilitation needs that could be met at home without 24-hour care	1 Outcomes: description and values Improvements in personal activities of daily living, domestic activities of daily living psychological wellbeing measured with GHQ; measured at baseline (t=0), 3 months (t=1), 12 months (t=2) Results of trial reported in narrative form: IG	No ICER results reported; graphs of cost-effectiveness acceptability curves showed high probability that the EDRS was cost-	Applicability: Sufficiently applicable (+) Quality: Overall high quality with some

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
	for max. period 4wks, provided by multidisciplinary team Control: Standard hospital aftercare: routine social services, home care and outpatient rehabilitation	Study design: Multi-centre randomised controlled trial in Nottingham (Cunliffe et al 2004); IG: N=185, CG: N=185 Source of effectiveness data: From trial; questionnaires were applied for n=272 Source of resource use data: Records and data collected by providers, some additional assumptions were made based on consultations with practitioners Source of unit cost data: NHS Reference costs 2000/1, PSSRU Unit cost book for health and social care 2000	achieved significantly better outcomes at t=1: personal activities of daily living, domestic activities of daily living, psychological wellbeing; at t=2: domestic activities of daily living, psychological wellbeing Quality of life (measured with EuroQoL EQ-5D); outcomes were measured at 12 months for n=272; QALY results derived from expected survival and utility weights; zero utility score for patients who had died before t=2; results for QALYs were not reported in this paper 2 Costs: description and values Costs of the intervention: IG (n=185), £510, 95% CI +/- £72; CG (n=185), £3, 95% CI +/- £5 Mean total cost per patient based on the following resource use: initial inpatient admission, inpatient readmission, outpatient visits, nursing/residential home stays, GP consultation, community health services, social services, day hospital Unadjusted results: IG £8,361 (+/-£540, median £5,283; IQR £9,465; 95% CI +/-£1,059), CG £10,088 (+/-£713, median £6,539; IQR £9,913; 95% CI +/-£1,398; average cost difference £1,727 (95% CI +/-£2,481; p=0.054) Adjusted results: significant cost difference in all adjusted analyses £1,728 to £2,017 Statistical analysis: Sensitivity analysis – 50% of cost of interventions and hospitalisation;	effective across a range of willingness-to-pay thresholds for a QALY	minor limitations (++) Perspective: Health and social care Discounting: Not applicable Prices: UK pounds sterling, 2000/1 Summary: The study showed that an early discharge and rehabilitation service was likely to be cost-effective; findings can be used to inform recommendations in the context of other evidence on (cost-) effectiveness

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
			bootstrapping of cost-effectiveness results		
Acronyms: IQR=interquartile range, CI=confidence interval, QALY=quality adjusted life year; EDRS=early discharge and rehabilitation service, GHQ=General Health Questionnaire					

Wong FK, Chau J, So C, Tam SK, McGhee S (2012) Cost-effectiveness of a health-social partnership transitional program for post-discharge medical patients, BMC Health Services Research 12: 479

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
Wong et al 2012 Hong Kong (HK) Cost-effectiveness, cost utility	Intervention: Health-Social Transitional Care Management Program in addition to usual care; 4wks programme at home provided by nurse case manager and volunteers; referral to social worker if required Control: Usual discharge care	Population: Older people (60+) discharged from hospital; excluded were patients discharged from institutional care, being part of disease management programme, inability to communicate and dying Study design: Randomised controlled trial; IG: n=272, CG: n=283 Source of effectiveness data: From trial Source of resource use data: From trial, data on health service utilisation extracted from hospital information systems	1 Outcomes: description and values Quality of life (QoL) was measured with the Hong Kong Chinese version of the 36-item Short-Form Health Survey (SF-36 HK) Significantly lower readmission rates in IG within 28 days (4% vs 10.2%) and at 84 days (8.1% vs 19.4%) Significantly higher QoL utility values in IG at 28 days (p<0.001) and 84 days (p=0.002); significantly higher QALYs gain (p<0.001) at 28 and 84 days 2 Costs: description and values Cost of the intervention per patient: HK$1,225 Lower cost of readmission in IG within 28 and 84 days: mean difference –HK$1,505 (95% CI: -$2670, -$555) and –HK$3,000 (−$5104, –1211)	The results were plotted on a cost-effectiveness plane and displayed with cost-effectiveness acceptability curves: Intervention had a 65% and 95% chance of being cost saving at 28 and 84 days Intervention had an 89% chance of being cost-effective at the NICE threshold of £20,000 One-way SA showed that raising the	Applicability: Sufficiently applicable (+) Quality: The study was of overall moderate quality with some limitations that are important to consider when interpreting the findings of this study (+) Perspective: Health care and costs of volunteering Prices: In Hong

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
		Source of unit costs: Unit cost of training and programme costs from duration of training and intervention and hourly pay (national median salaries taken for volunteers); unit costs for hospital services from national authority data Statistical analysis: bootstrap method to estimate confidence intervals (CIs) for the difference in health outcome and cost between the 2 groups	Sensitivity analysis (SA): One-way SA: cost and readmission rate (±30%), length of stay with min./max. value of 95% CI; probabilistic SA: random values for all parameters; pre-programme, programme cost and readmission rate (±30%), length of stay and utility scores (within the 95% CI); ICERs were generated 1000 times with a random value for each parameter every time	intervention cost or reducing the readmission rate and length of stay for both groups by 30% would increase the ICERs at 28 days, by up to HK $200,000 per QALY, whereas the ICERs at 84 days remained cost saving in all 1-way sensitivity analyses	Kong dollars; £1 =HK$12 Summary: A nurse and volunteer provided discharge and integrated community care service was inexpensive and appeared to lead to reductions in costs to the hospital; wider impact on community services was unknown. Findings need to be interpreted with caution as the study had some important limitations and because of the different care system
Acronyms: IG=intervention group, CG=comparison group, ICER=incremental cost effectiveness ratio, CI=confidence interval, HK=Hong Kong					

Discharge planning (with and without rehabilitation) or rehabilitation for people with stroke

Brady BK, McGahan L, Skidmore B (2005) Systematic review of economic evidence on stroke rehabilitation services. International Journal of Technology Assessment in Health Care 21: 15–21

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
Brady et al 2005 International Economic evaluations and cost-analysis	Intervention: (1) Stroke unit including rehabilitation; (2) early supported discharge (ESD) with multi-disciplinary support at home; (3) rehabilitation in the community Control: Usual care (1) care on general or geriatric wards; (2) 'conventional' rehabilitation and hospital rehabilitation; (3) day hospital or outpatient rehabilitation	Population: Hospital patients of all ages with a clinical definition of stroke Study design: Systematic review identified 15 studies: 3 studies on (1); 8 studies on (2); 4 studies on (3); 6 studies were from UK Statistical analysis: Results of studies were not pooled quantitatively Source of effectiveness data: From studies, no further detail provided Source of resource use data: From studies, no further detail provided Source of unit cost data: Not detail provided	1 Outcomes: description and values 1) Stroke unit including rehabilitation (3 studies): Consistent finding of increased survival and better health in IG; 2) Early supported discharge (8 studies): No significant effect on health outcomes (3 studies); 1 study reported significantly better outcomes measured through activities of daily living; 1 study reported reduced burden for carers but another reported increase in carers burden and possibly reduced mental health; 3) Rehabilitation in the community: 3 studies reported no significant health improvements in IG 2 Costs: description and values 1) Stroke unit including rehabilitation (3 studies) All 3 studies found slightly lower costs of intervention than rehabilitation on other wards; this did not seem to be significant ; studies used different perspectives and time horizons Two studies indicated that lower intervention costs were partly offset by higher outpatient costs; One study indicated that costs of unpaid care were lower in IG 1 study found no significant effect on length of	No combined results on cost-effectiveness were presented; the focus of this review was on cost savings but some results on outcomes were presented The authors were careful with conclusions about cost savings or cost-effectiveness because of caveats concerning the heterogeneity of interventions, comparators and service landscapes as well as concerns about the quality of studies	Applicability: Sufficiently applicable (+) Quality: Moderate quality with potentially serious limitations (+) Summary: The study suggested that (1) stroke units might be cost-effective but possibly only for hospitals with high enough numbers of stroke patients; (2) ESD might be cost-effective for low-moderate disabled groups but impact on carers and readmission was not clear; (3) rehabilitation in the community was not likely to be cost-effective. Findings

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
			stay 2) Early supported discharge (8 studies) Six higher quality studies (including 2 UK studies) found lower costs in IG, ranging from 4 to 30%; only 1 study found that this was a significant reduction; 4 studies reported sensitivity analysis and concluded results were robust; studies referred mainly to patients with mild to moderate disability All studies reported that length of hospital stay was lower in IG; but in 3 studies this was offset by higher community care or social services costs; evidence on the impact of intervention on readmission was inconclusive Unclear what the impact of intervention on carers was; 1 study reported a higher burden on carers whereas in 3 studies there was no or a reduced impact on carers 3) Rehabilitation in the community (4 studies) Two UK studies reported that cost in IG was higher by 26 to 27%; this included the costs of health and social care; impact on carers was not considered One UK study on direct costs of home physiotherapy only found large reduction in costs of 38% and reported no significant other effects on community support and carers time or stress Swedish study found that cost in IG was the same as in the CG; this included the costs of		need to be interpreted with caution because the study had potentially serious limitations

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
			health and social care but not of unpaid care; Some studies found that costs shifted from hospital to home-help or social services		
Acronyms: IG=intervention group, CG=comparison group, ESD=early supported discharge					

Fearon P and Langhorne P (2012) Services for reducing duration of hospital care for acute stroke patients. Cochrane Database of Systematic Reviews: Reviews 2012, Issue 9

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
Fearon & Langhorne 2012 International Effectiveness studies with patient and resource outcomes	Intervention: Services which aim to accelerate patient's discharge from hospital and are provided by teams of therapists, nurses and doctors; (1) Early support discharge (ESD) team coordination and post-discharge delivery; (2) ESD team co-ordination (care handed over to community services); (3) No ESD team; multidisciplinary care ended at discharge	Population: Any patient admitted to hospital with a clinical diagnosis of stroke; different severities of stroke (disabilities) measured via ADL status; majority recruited from city hospitals or mixture of urban and rural; mean age ranged from 66 to 80 years Study design: Systematic review identified 14 trials from eight countries including UK Statistical analysis: study of heterogeneity using I-square statistic; sensitivity analysis where heterogeneity occurred	1 Outcomes: description and values Primary outcomes: death, physical dependency, place of residence; secondary outcomes: ADL score; extended ADL score; subjective health status; mood (mood or depression score; carer outcomes (carer mood and subjective health status); patient and carer satisfaction and/or service preference; outcomes were measured at different time points from 3 to 12 months; 1 study carried out follow-up at 5 years a) Outcomes with non-significant difference and no significant heterogeneity: Death: N=1,758 (14 trials); activities of daily living: N=1,124 (9 trials); subjective health status: N=1,377 (12 trials); mood status: N=851 (8 trials); 1 trial found increased anxiety (p=0.02) and higher level of depression (non-significant) in ESD group; carers' subjective health status: N=749 (8 trials); carer satisfaction: N=279 (4 trials)	No combined cost-effectiveness results presented but it was concluded that savings from hospital bed days released tended to be greater than, or similar to, the cost of the intervention It was reported that positive findings referred particularly to the first two interventions that consisted of an early supported discharge team	Applicability: Sufficiently applicable (+) Quality: Minor limitations: overall high quality but limited cost data (++) Summary: Early support discharge was likely to lead to a reduced length in hospital stay and possibly reduced risk of admission to a care home, but not in a reduced risk of

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
	Control: Conventional care and discharge procedures; categorised on whether organised stroke unit care was available to patients prior to discharge; usually patients recruited from stroke or neurological unit provided in general wards; minority from multidisciplinary setting	Source of effectiveness data: From trials Source of resource use data: From trials Source of unit cost data: Not reported	b) Outcomes with non-significant difference but significant heterogeneity: Carers' mood: N=58 (2 trials) c) Outcomes with significant positive difference for IG and no significant heterogeneity: Death or institutionalisation: N=1,758 (12 trials); OR=0.78, 95% CI 0.61 to 1.00, p=0.05; Death or dependency (1) Short term: N=1,957 (14 trials); (OR=0.80, 95% CI 0.67 to 0.97, p=0.02); reported for selected number of high quality trials (n=10); OR=0.72, 95% CI 0.58 to 0.9, P=0.004; (2) At 6 months: N=403 (2 trials); OR 0.68, 95% CI 0.53 to 0.87; P=0.002; still same direction but not significant at 1 and 5 years Extended activities of daily living: N=1,051 (9 trials); SMD 0.14; 95% CI 0.02 to 0.26, P=0.02; data referred to trials with ESD; Patient satisfaction: N=513 (5 trails); ESD group OR=1.60, 95% CI 1.08 to 2.38, P=0.02 2 Costs: description and values Service use (measured through resource outcomes): length of index hospital stay, readmission to hospital, total costs of service intervention Length of index hospital stay: N=1,695 (13 trials); significant reduction of approximately 7 days (p<0.0001) Hospital readmission: N=918; no difference		hospital readmission; other positive outcomes to individuals might be achieved in terms of dependency and activities of daily living; carer's outcomes were not affected; there were unlikely to be adverse effects to individuals or carers

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
			(31% vs. 28%) Total costs: from 7 trials; measured at 3 to 12 months; included different elements of costs; cost findings varied showing that costs in ESD group were reduced when direct and indirect costs were included; UK studies (from 1997 and 1999) showed ESD vs. control cost per patient of £7,155 vs £7,480 and £6,800 vs. £7,432; no significance reported but results were reported to be stable in sensitivity analysis Cost of the intervention Costs of the intervention were not reported but description on service components was provided; Standardised staffing levels (whole time equivalents (WTE) sufficient to manage a notional 100 new patients per year) were calculated from recorded staff contact times; assumed staff would have a 35-hour working week with 20 hours direct contact time and 10 hours indirect contact time. Typical ESD teams had approximately 3.0 WTE staff (range 2.5 to 4.6) as follows; medical 0.1, nursing (ranged from 0 to 1.2), physiotherapy 1.0, occupational therapy 1.0, speech and language therapy 0.1, assistant 0.2. Variable levels of social work (0 to 0.5 WTE) and secretarial support were also available Sub-group analysis No significant association between age, gender, availability of a carer on selected outcomes and		

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
			resource use; no significant interaction with the background and control service or control service characteristics for ESD group Results suggested that the greatest benefit in clinical outcomes for mild and moderate groups but the greatest reduction in hospital bed days for severe sub-group Significantly greater reduction (p=0.04) in risk of death or dependency for patients with moderate vs severe stroke (OR 0.77, 95% CI 0.61 to 0.98 vs OR 1.40, 95% CI 0.83 to 2.36) Greater reduction in risk of death or institutional care (values not reported) Significantly smaller reduction (p<0.0001) in length of hospital for patients with moderate vs severe stroke severity (MD 3 days, 95% CI 1 to 7 vs MD 28 days, 95% CI 17 to 40)		
Acronyms: ADL=activities of daily living; IG=intervention group; CG=comparison group; N=number of participants; p-value = measure that helps to determine statistical significance, usually values under 0.05 or 0.01 are used to confirm that a finding was significant; MD=mean difference; SMD=standard mean difference; CI=confidence interval as a measure of reliability of an estimate					

Larsen T, Olsen TS, Sorenson J (2006), Early home-supported discharge of stroke patients: A health technology assessment. International Journal of Technology Assessment in Health Care 22: 313–20

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
Larsen et al 2006 International	Intervention: Early home-supported discharge (EHSD) by multi-disciplinary team	Population: Any patient admitted to hospital with a new clinical diagnosis of stroke; different severities of stroke (disabilities) measured via ADL status;	1 Outcomes: description and values Significant reduction in mortality or institutionalisation OR=0.75 (CI, 0.46-0.95) Significant reduction in institutionalisation by 5% from 11.3% to 6.3%; OR=0.45 (CI, 0.31-	The authors concluded that EHSD was 'dominant' to conventional stroke unit rehabilitation and this referred to their finding	Applicability: Sufficiently applicable (+) Quality: Moderate

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
Effectiveness and cost-effectiveness	(including social worker) that plans, coordinates and delivers care at home; presents an extension of stroke unit services; excluded were interventions that did not have an element of home training Control: Conventional care; referred to dedicated stroke units	majority recruited from city hospitals or mixture of urban and rural; mean age ranged from 66 to 80 years Study design: Systematic review of trials published after 2000; 7 trials identified; N=1,108 Statistical analysis: Effect sizes were calculated using pooled standard deviations; significant results were used in the economic analysis Source of effectiveness data: From 7 trials Source of resource use data: Evidence from resource use relevant outcomes reported in maximum of 5 trials Source of unit cost data: Unit costs for therapist hours and travelling based on a Dutch costing manual for economic evaluation; in 2005 prices	0.96) Significant reduction in hospital length of stay by 10 days (CI 2.6-18 days); Non-significant reduction in rate of death (OR=0.78) No significant reduction in readmission One study found sustained effects in activities of daily living at 5 years 2 Costs: description and values Costs of ESD based on number of home sessions provided; assumed was an mean duration of 4hrs per home session including time for travelling and coordination activities; median number of home sessions was 11 (from 5 trials); overhead costs of 25% were added; 3.07 whole-time staff per 100 patients Average cost of ESD $1,340 Resource use was established from outcome data. Same unit cost assumed for a saved hospital and care home day of 170 USD; lower CI of 3.2 hospital days and 5.5 days in nursing home saved over 1yr; this was equivalent to 1,480 USD saving per year Net benefit of $140/yr	on cost savings The study presented number needed to treat which ranged from 14 to 20 for avoiding 1 poor outcome (death or institutionalisation)	quality with potentially serious limitations (+) Summary: The study suggested that EHSD could lead to cost savings but potentially serious limitations of this study meant that finding on savings need to be interpreted with caution and should not inform the recommendations. Findings on outcomes might be used to inform recommendations more generally
Acronyms: N=number of study participants; OR=odds ratio; CI=confidence interval; USD=US dollar; yr=year; EHSD=Early home-supported discharge					

Patel A, Knapp M, Perez I, Evans A, Kalra L (2004) Alternative strategies for stroke care: cost-effectiveness and cost-utility analyses from a prospective randomized controlled trial. Stroke; 35(1): 196–203

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
Patel et al 2004 UK Economic evaluation	Three alternative stroke strategies were compared: (1) Stroke unit: multi-disciplinary team, specialist care, discharge planning; (2) Stroke team: non-specialist care on general ward advised by specialist team, usual discharge planning; (3) Domiciliary care at home under joint care including social services	Population: Acute stroke patients within 72hrs of stroke onset Study design: Randomised controlled trial; (1) stroke unit n=152, (2) stroke team n=152, (3) domiciliary care n=153 Source of effectiveness data: From trial Source of resource use data: From trial; Client Service Receipt Inventory (CSRI); information from families, health and social services records, observations by service providers Source of unit cost data: Local unit costs and national average costs from the Unit Costs of Health and Social Care, England: PSSRU Statistical analysis: One-way (Bonferroni) and non-parametric analysis for	1 Outcomes: description and values Primary outcomes were mortality (alive without severe disability) and institutionalisation over a 1-year period Institutionalisation: significantly better outcomes of stroke unit (14%; 21 of 152) compared with the stroke team (30%; 45 of 149) or domiciliary care (24%; 34 of 144); p<0.03 Alive without severe disability at 1 year: significantly better outcomes of stroke unit (85%; 29 of 152) compared with the stroke team (66%; 99 of 149; p<0.001) or domiciliary care (71%; 102 of 144; p<0.002) Health states were evaluated with EuroQoL (EQ-5D) at 6, 12, 26 and 52wks; utility weights for health states were derived from UK general population survey 2 Costs: description and values Total mean cost per patient (over 12 months), excluding unpaid care for different strategies: (1) £11,450 (SD=£9,745), (2) £9,527 (SD=£8,664), (3) £6,840 (SD=£9,353); F2=8.96, p<0.000 Total mean cost per patient (over 12 months), including unpaid care (based on the minimum wage rate): (1) £16,574 (SD=£13,157), (2) £12,512 (SD=10,369), (3) £10,296	Stroke team dominated by domiciliary care on costs and outcomes; comparison between stroke unit and domiciliary care: additional cost of avoiding an additional 1% of deaths and institutionalisations in the stroke unit group ranged from £534 to £1,033; ICERs per QALY: £64,323 to £136,609 Cost-effectiveness acceptability curve showed that domiciliary care had the highest probability of being cost-effective	Applicability: Sufficiently applicable (+) Quality: Overall high quality with only minor limitations (++) Prices: UK pounds sterling, in 1997/98 prices Perspective: Health and social care, plus unpaid care Discounting: Not necessary Summary: Findings suggested that stroke unit and domiciliary care were more cost-effective options compared with stroke teams; furthermore domiciliary care was the most-effective care strategy Findings can be used

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
		mean costs; chi-squared test for avoided deaths or institutionalisations; cost-effectiveness acceptability curves for ICER Sensitivity analysis (SA): Impact of different costing methods for informal care was tested using replacement cost and opportunity cost approaches (home help worker rate vs minimum wage)	(SD=11,613), F2=8.96, p<0.000 Total cost per patient (over 12 months), including unpaid care (based on home help rate): (1) £26,738 (SD=£26,817), (2) £18,494 (SD=£18,785), (3) £17,226 (SD=£21,442); F2=7.57, p<0.001		to inform recommendations
Acronyms: IG=intervention group; CG=comparison group; ICER=incremental cost effectiveness ratio; SD=standard deviation					

Saka O, Serra V, Samyshkin Y, McGuire A, Wolfe CC (2009) Cost-effectiveness of stroke unit care followed by early supported discharge. Stroke 40: 24–9

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
Saka et al 2009 UK Cost-utility	(1) Stroke unit (SU) with early supported discharge (ESD) was compared with (2) SU only and compared with (3) treatment in a general medical ward The ESD programme	Population: Stroke patients, with different severities of disabilities but early supported discharge only for those with less disability Study design: Markov health state transition and decision analytic model, over 10-year	1 Outcomes: description and values Health-related quality of life values (quantified in quality adjusted life years (QALYs) were derived from the Barthel Index (BI) using a conversion method that had been published in a peer reviewed journal: 1st model run (3) compared with (1) and (2): QALYs gained per patient (1) 2.230, (2) 2.15 (3) 1.679; incremental effectiveness (1 vs 3) 0.550	Incremental cost-effectiveness ratio (ICER) per QALY: (1 vs 3) £11,615, (2 vs 3) £10,661; (1 vs 2) £17,721; Stroke unit with early supported discharge	Applicability: Sufficiently applicable (+) Quality: Overall high quality with only minor limitations (++)

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
	allowed less disabled patients to be discharged early to undergo further rehabilitation at home	period Source of effectiveness data: From population-based register and from a RCT, data on mortality from Office for National Statistics Source of resource use data: From population-based register and from a trial Source of unit cost data: National Health Service costs from the Guy's & St Thomas's Foundation Trust, Financial Performance Report, 2004/2005; national earnings for UK workers from government statistics (HM Revenue and Customs)	(2vs.3) 0.472 2nd model run (2) compared with (1): QALY gained per patient (1) 2.230, (2) 2.152; incremental effectiveness 0.079 2 Costs: description and values Healthcare costs and productivity costs were considered; health care costs included those of the hospital, care home, sheltered home, outpatient drugs and lab test; productivity cost estimates were based on income loss due to mortality or morbidity 1st model run (3) compared with (1) and (2): total costs per patient (1) £46,900 (2) £45,500, (3) £40,500; incremental costs (1 vs 3) £6,400, (2 vs 3) £5,000 2nd model run (2) compared with (1): Total costs per patient (1) £47,300 and (2) £45,700; incremental costs 1 vs 2: £1,400 Sensitivity analysis (SA): One-way SA: Impact of variation of all input parameters +/- 20% with exception of discount rate which was varied by +/-10% Probabilistic SA carried out of health-related quality of life and length of stay variables	was the most-effective strategy The results of the sensitivity analysis confirmed these base-case findings	Prices: UK pounds sterling (£), in 2005/6 prices Perspective: Health care and productivity Discounting: At an annual rate of 3.5% Summary: Findings suggested that stroke unit (with and without early supported discharge) was more cost-effective than general wards; stroke unit with early supported discharge was the most cost-effective strategy. Findings can be used to inform recommendations

Geriatric assessment and care (older people)

Ellis G, Whitehead MA, Robinson D, O'Neill D, Langhorne P (2011) Comprehensive geriatric assessment for older adults admitted to hospital: meta-analysis of randomised controlled trials. British Medical Journal 343: d6553

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
Ellis et al 2011 International Effectiveness including resource use outcomes	Intervention: Comprehensive geriatric assessment in inpatient setting in specialist units ('wards') or through consultation service ('team'); excluded were disease specific interventions Control: Usual care; usually involved admission to general medical ward under the care of non-specialist	Population: Older people of 65years or older admitted to hospital care as an emergency, including unplanned, unscheduled and acute presentations Study design: Systematic review and meta-analysis of randomised controlled trials, none of the studies were from UK Source of effectiveness data: From trial data; meta-analysis was performed on effect sizes Source of resource use data: From trial data; meta-analysis could not be performed because costs of comprehensive geriatric assessment were reported differently for different outcome measures	1 Outcomes: description and values Living at home at follow-up (median 12 months, ranged 6wks to 12 months): IG more likely to live at home (OR=1.16, 95% CI 1.05 to 1.28; p=0.003, 18 trials, N =7,062) 'Wards' associated with better outcomes and 'teams' associated with worse outcomes: 'Wards': OR 1.22 (1.10-1.35; p<0.001; 14 trials; N=6,290) 'Teams': OR 0.75 (0.55-1.01; p=0.06; 4 trials; N = 772) This effect was stronger for first 6 months (median 6 months, ranged 6wks to 6 months): 1.25 (1.11-1.42; P<0.001; 14 trials, N=5,117) 'Wards': OR 1.31 (1.15-1.49; p<0.001; 11 trials; N=4,624) 'Teams': OR 0.84 (0.57-1.24; p=0.39; 3 trials; N=493) Reduction in admission to residential care at the end of follow-up (median 12 months); OR=0.78 (0.69-0.88; p<0.001; 19 trials; N=7,137) 'Wards': OR 0.73 (0.64-0.84; p<0.001; 14 trials; N = 6,252) 'Teams': OR 1.16 (0.83-1.63; p=0.39; 5 trials;	No overall cost-effectiveness results reported; the authors reported on the effect that equated to number needed to treat to prevent 1 unnecessary death or admission to residential care; this ranged from 13 to 33; the number was lowest for 'wards' and period of 6 months (outcome: living at home)	Applicability: Sufficiently applicable (+) Quality: Overall relatively high quality with some minor limitations (++) Summary: Geriatric assessment provided on specialist wards was likely to be effective in helping people to live in their own homes and reducing admission to residential care; it was likely that the intervention led to cost savings most a hospital and care home perspective but impact on community resources and

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
		Source of unit costs: Not reported. Statistical analysis: Fixed effect model, in addition random effect model when there was heterogeneity; weighted mean differences for outcomes reported on continuous scales.	N=485) Significant reduction in death or deterioration: OR 0.76 (0.64-0.90; P=0.001; 5 trials, N=2,622); no interaction between sub-groups (i.e. wards or teams, different time periods) Significant positive benefit on cognitive function: SMD 0.08 (0.01-0.15, p=0.02; 5 trials N=3,317); no sub-group interaction (or not enough data to demonstrate it) No significant effect on dependence (or insufficient data to demonstrate effect) on death or dependence, on death, on activities for daily living, on hospital readmission; data on length of hospital stay could not be analysed because of heterogeneity; 2 Costs: description and values The study presents a table with a large number of cost information; the highly heterogeneous cost evaluation approaches of those studies did not make it possible to present synthesised cost data. Most studies reported on the cost from the perspective of the hospital only Many of the studies that focused on hospital costs showed a reduction in costs in IG but this was not always the case; Cost reductions were more likely when costs of residential care had been included		unpaid care were unknown

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
Acronyms: IG=intervention group, CG=comparison group, OR=odds ratio, p=p-value, SMD=standard mean difference, N=number of participants, OR=Odds ratio, CI=confidence interval					

Fox MT, Persaud M, Maimets Oli, O'Brien K, Brooks D, Tregunno D, Schraa E (2012) Effectiveness of acute geriatric care for elders components: a systematic review and meta-analysis, The American Geriatrics Society, 60: 2237–45

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
Fox et al 2012 International Effectiveness including resource use outcomes	Intervention: Acute geriatric unit care based on Acute Care for Elders (ACE) model used in acute phase of illness or injury; most interventions included patient-centred care; followed by frequent medical review; early rehabilitation; early discharge planning; prepared environment; 10 studies included social workers as part of multidisciplinary team Control: Usual care consisted of standard	Population: Acutely ill or injured patients in hospital aged 65yrs or older; mean age 81yrs; N=6,839 Study design: Systematic review and meta-analysis of N=19 randomised and quasi-experimental trials using Cochrane Collaboration Protocol Source of effectiveness data: From trial data; meta-analysis was performed on effect sizes Source of resource use data: From trial data	1 Outcomes: description and values Measured were falls, pressure ulcers, delirium, functional decline at discharge from baseline 2-week pre-hospital and hospital admission status; length of stay; discharge destination (home or nursing home); mortality; hospital readmission IG was associated with fewer falls (risk ratio (RR)=0.51, 95% CI=0.29-0.88), less delirium (RR=0.73, 95% CI=0.61-0.88), less functional decline at discharge from baseline 2-week pre-hospital admission status (RR=0.87, 95% CI=0.78–0.97), shorter length of hospital stay (weighted mean difference (WMD) = -0.61, 95%CI=-1.16 to -0.05), fewer discharges to a nursing home (RR=0.82, 95% CI=0.68–0.99), lower costs (WMD=-$245.80, 95% CI=-$446.23 to -$45.38), and more discharges to home (RR=1.05, 95% CI=1.01–1.10) Non-significant reduction in pressure ulcers and no differences in functional decline between baseline hospital admission status and	It was reported that hospitals may realise cost savings of approximately USD 246 and more than a half-day shorter hospital stay	Applicability: Not sufficiently applicable as an economic study (-) Quality: Economic appraisal not carried out because of limited applicability as an economic study but quality assessed as part of systematic review was high Summary: Acute geriatric unit care led to range of improved health outcomes and reduced hospital

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
	nursing and medical care provided medical, medical-surgical or surgical units	Source of unit costs: Costs were taken from hospital financial or accounting systems or charges were used to approximate costs of care based on diagnostic information; uprated to 2012 prices with some assumptions made about the original cost year where this detail was not provided Statistical analysis: Random-effects model for continuous and dichotomous outcomes to calculate weighted mean differences (WMD) and risk ratios (RRs); sensitivity analysis was performed when there was significant heterogeneity and outliers were removed	discharge, mortality and hospital readmissions 2 Costs: description and values Costs were defined as total hospital costs for care provided during the duration of the hospital stay; costs were uprated and presented in 2000, USD Costs were reported in 6 studies, with complete data in 5 studies Costs in IG were significantly lower than in CG: WMD=-$431.37, 95% CI=$933.15–$70.41; P=-0.09), after removal of an outlier study in sensitivity analysis the costs in IG were significantly less than those in CG: WMD=-$245.80, 95%CI=-$446.23 to -$45.38; p=0.02)		resource use but study had limited applicability; findings might be used to inform recommendations more generally
Acronyms: WMD=weighted mean difference; RR=risk ratios; CI=confidence interval; IG=intervention group; CG=comparison group					

Rehabilitation at hospital discharge (older people)

Ellis A, Trappes Lomax T, Fox M, Taylor R, Power M, Stead J, Bainbridge I (2006) Buying time II: an economic evaluation of a joint NHS/Social Services residential rehabilitation unit for older people on discharge from hospital. Health and Social Care in the Community 14(2): 95–106

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
Ellis et al 2006 Cost-effectiveness UK	Intervention: Short-term rehabilitation unit on discharge from hospital; 6 wks intermediate care; rehabilitative services provided by therapists and care or rehab assistants Control: Usual health and social care in the community; an outline of the types of health and social care services received by the control group is presented	Population: Older people 55yrs or above identified 1 to 3 weeks before hospital discharge; with 'potential to improve', 'realistic and achievable goals', 'being motivated to participate'; excluded were those not manageable by a community nurse, medically unstable, severe mental health difficulties, disoriented, end of life, simply in need of rest, respite and convalescence Study design: Multi-centre randomised controlled trial in Devon; interviews at baseline (t=0), 6 months (t=1) and 12 months (t=2); IG: N=88, CG: N=106 Source of effectiveness data: From trial Source of resource use data: Retrospectively from records, questionnaires sent to practitioners	1 Outcomes: description and values Primary outcome: Survival-at-home time was measured in number of days from t=0 until person went to care home, died or reached t=2; secondary outcomes were not reported in this paper. At t=0, persons in IG and CG similar in terms of gender, carer, reason for being admitted to hospital, rehabilitation needs and level of dependency (Barthel Index) Survival-at-home time: No significant difference; mean IG (n=88) 272 days (+/-129 days) and mean CG (n=106) 285 (+/-128 days) unadjusted mean 1.28 (95% CI: 0.81 to 2.03) IG was significantly older than CG (p=0.028) 2 Costs: description and values NHS resources included staff time (GP, practice nurse, occupational therapist, physiotherapist, community nurse, continence nurse, speech and language therapist), hospital stay in different wards and travel. Social services resources were staff time (home, telephone and personal care assistant), stays (rehabilitation unit, residential care, nursing care, day care and respite care), aids and adaptations, community meals and travel Mean costs per patient to the NHS IG £3,531, CG £5,146.74;	The average cost per day living was £31.4 in IG and £29.9 in CG; Cost of the intervention fell more heavily on social services, while the cost of the comparison group fell more strongly on the NHS; Usual care was cheaper in most scenarios considered in SA; The intervention was cheaper than usual care when rehabilitation unit costs were reduced by 25%, when the cost of residential care was reduced by 25%, and when the hospital costs were increased by 25%.	Applicability: Sufficiently applicable (+) Quality: Overall high quality with some minor limitations (++) Perspective: NHS and social services Discounting: Not necessary Prices: In UK pound sterling1999/2000 Summary: This study did not confirm that a short-term rehabilitation unit at hospital discharge was cost-effective; findings can be used to inform recommendation in

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
		Source of unit cost: PSSRU unit cost for health and social care 1999/2000; some unit costs for social care were taken from the local authority Sensitivity analysis Univariate; to assess the impact of: costs of hospital, rehabilitation unit, residential care (+/- 25%); home visits by social care (increase from 30 to 60min.); inclusion of travel costs of personal care assistants; variations in the cost of aids and adaptations; impact of missing data on total costs	Mean costs per patient to social services: IG £5,012, CG £3,364 Total mean costs per patient: IG £8,542, CG £8,511	Missing data had a modest impact on the results of the cost analysis	the context of other (cost-)effectiveness evidence
Acronyms: IG=intervention group; CG=comparison group; PSSRU=Personal Social Services Research Unit					

Glendinning C, Jones K, Baxter K, Rabiee P, Curtis LA, Wilde A, Arksey H, Forder JE (2010) Home care reablement services: investigating the longer-term impacts (prospective longitudinal study), Social Policy Research Unit, University of York

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
Glendinning et al 2010	Intervention: The study looked at 2 types of reablement: 'intake' services (for	Population: People referred by councils identified with reablement needs; majority of people referred after hospital	1 Outcomes: description and values Self-perceived health (5-point scale), perceived quality of life (7-point scale), health-related quality of life (EQ-5D), social care-related	For health-related quality of life: 99% (98%) probability that reablement was cost-	Applicability Not sufficiently applicable because intervention was only

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
UK Cost effectiveness	wide range of people who are FACS eligible and in need for home care); 'discharge support'; services for people discharged from hospital or intermediate care Control: Conventional home care services	discharge (67%); majority were 65yrs or older (94%) Study design: Mixed method, before and after; comparative design; 5 councils offering home care reablement; 5 councils offering conventional home care; data collected at service commencement (t=0) and between 9 to 12 months later (t=1); data available for N=382 (IG: N=241; CG: N=141); additional post-intervention interviews with IG Source of effectiveness data: From interviews Source of resource use: Repeated monthly questionnaire (postal) on NHS and other service use; service use information from council records Source of unit costs: unit costs of reablement from council data Statistical analysis (for outcomes): univariate	quality of life (ASCOT); carers outcomes were examined qualitatively Significant improvement in mean social care-related quality of life in IG between baseline (mean 0.76, sd0.15) and follow-up (mean 0.82, sd0.13; p<0.001); this change in scores was 0.03 points higher in IG than in CG Significant improvement in health-related quality of life in IG between baseline (mean 0.38, sd0.30) and follow-up (mean 0.47, sd0.35, p<0.001); no change in CG (baseline mean 0.33 compared to follow-up mean 0.32); thus change in EQ-5D was 0.08 points higher in IG than in CG 2 Costs: description and values Cost of reablement intervention: £2,088 per episode; mean cost £20/hr; mean cost per client contact £40/hr No significant reduction in overall costs of health and social care services over 12 months period Costs of social care (including reablement): reduction of £380 (60%) Increase in health care costs (during first 8wks); this was mainly because of a higher number discharged from hospital in IG; no significant difference between IG and CG in subsequent 10 months; no significant differences in duration of inpatient stays or total costs of healthcare used after controlling for baseline characteristics	effective at WTP threshold of £30,000 (£20,000) For social care-related quality of life: 78% (68%) probability that reablement was cost-effective at a WTP threshold of £30,000 (£20,000)	relevant to the review question for 67% of participants and comparison group was inappropriate (-) Quality: The study was of limited applicability so that appraisal of quality was not carried out Summary Findings cannot directly be used to inform recommendations although they might provide some general indication that reablement services were likely to be cost-effective

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
		analysis on paired, chi-squared and binominal, multivariate on xtreg estimator (Stata 10), fixed and random effect model, dummy variable for councils and Hausman specification test			
Acronyms: ASCOT=Adult Social Care Outcomes Tool; EQ-5D=European measure for health-related quality of life (EuroQoL); IG=intervention group; CG=comparison group; sd=standard deviation; p=p-value; WTP=Willingness-to-pay threshold					

Hall CJ, Peel, TA Comans, LC Gray, PA Scuffham (2012) Can post-acute care programmes for older people reduce overall costs in the health system? A case study using the Australian Transition Care Programme. Health and Social Care in the Community 20: 97–102

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
Hall et al 2012 Australia Cost-saving/utility	Intervention: National Transition Care Programme (TCP), 8-12wks care in community or institutional setting after hospital stay; care package includes home help, personal care, rehabilitation in form of physio- and occupational therapy; nursing care and	Population: Older people (>70yrs) at hospital discharge who have been assessed eligible for at least low-level residential care facilities Study design: Economic model to demonstrate potential cost savings Source of effectiveness data: Data collected in previous evaluations of the national TCP, using pseudo-control	1 Outcomes: description and values Length of index hospital stay: No consistent evidence of impact on median length of index hospital stay Modified Barthel Index (MBI) assesses activities of daily living: the avg. MBI score at entry to TCP was 72.1 (moderate dependency) and at exit 82.0 (mild dependency) Hospital readmission at 6 months (compared to pseudo-control group): Reduced risk in IG of 17–35%; data from literature showed reduction of 30 to 50% Delay of entry to residential care at 6 months (compared to pseudo-control group): Reduced	Maximum total cost savings of AUS $6,118 before cost of intervention; net cost of AUS $6,323 after cost of intervention; At WTP threshold of AUS$50,000 the QALY gain required for intervention to be considered cost-effective is 0.13; authors argue that the gain from delaying or	Applicability Not sufficiently applicable (-) Quality: Not assessed because study was not sufficiently applicable Summary: Findings cannot be used to derive conclusions about cost-effectiveness but

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
	case management Control: Pseudo-control group at 6 months for certain outcome; no further detail provided	group for 6 month outcomes; data from international evaluation studies of similar interventions Source of resource use: effectiveness data (see above) and assumptions Source of unit costs: from national Department of Health and from literature	risk in community group (3.5-7 times) but higher risk in residential group; evidence of reduced risk of 0.69 to 0.84 in literature 2 Costs: description and values Cost of intervention (taken from Table 1): AUS$225 per day, 55 days, total cost of AUS $12,441 Resource use (cost consequences): Length of hospital stay: authors assume that 2 days would be achievable in the future, leading to cost savings of AUS$768 MBI: Assumes that improved MBI score would be linked to reduced GP visits during recovery phase of AUS$10 over 10wks, leading to cost savings of AUS$700 Assumes 35% chance of avoiding hospital readmission leading to max. cost savings of AUS$3,500 Assumes that 1 in 4 patients in IG have delayed entry into residential care of 3 months, leading to cost savings of AUS$1,150	preventing residential care is likely to exceed 0.1 QALY	some data can be used to inform recommendations in the context of other evidence for this type of interventions; for example findings indicated that a distinction need to be made between groups who receive this type of intervention in community versus residential setting

Review Area 6: Support for carers and families

Forster A, Dickerson J, Young J, Patel A, Kalra L, Nixon J, Smithard D, Knapp M, Holloway I, Anwar S, Farrin A. on behalf of TRACS Trial Collaboration (2013) A structured training programme for caregivers of inpatients after stroke (TRACS): a cluster randomised controlled trial and cost-effectiveness analysis. Lancet 382: 2069–76

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
Forster et al 2013 UK Cost-effectiveness	Intervention: London Stroke Carers Training Course (LSCTC), following the same approach as tested in Patel et al (2004) Control: Stroke units randomly assigned to the control group were asked to continue usual care as recommended in national clinical guidelines developed by the Royal College of Physicians, 2008	Population: Patient-unpaid carer dyads; patients with primary diagnosis of a new stroke, medically stable, likely to return home with residual disability, availability of unpaid carer willing to support patient at home; excluded were patient-carer dyads if the patient needed palliative care, discharge was planned within 1 week of admission to the stroke unit or carer was previously registered to the trial Study design: Pragmatic, multicentre cluster randomised trial, assessed for eligibility were 49 stroke units, of which 36 were randomly assigned to either the intervention group or the control group; patient and carer dyads (IG) N=450 (CG) N=478	1 Outcomes: description and values Primary outcomes description: (1) patient's self-reported functional independence in extended activities of daily living (ADL) via NEADL; (2) caregivers' self-reported burden via CBS; secondary outcomes description: (1) for patients: anxiety and depression via HADS, (physical) health via EQ-5D, Barthel Index, and Stroke Impact Scale (SIS); (2) for carers: self-report versions of Frenchay activities index, HADS, and EQ-5D Findings Patients and carers' primary and secondary outcomes did not change: Patients' ADL did not differ between groups at 6 months (adjusted mean NEADL score 27.4 vs. 27.6, 95% CI –3.0 to 2.5), p-value=0.866, ICC=0.027; carer (adjusted mean CBS 45.5 vs 45.0 (95% CI –1·7 to 2.7), p-value=0.660, ICC=0.013 2 Costs: description and values Description of costs of the intervention and resource use: Development and staff training costs were included in the costs of the intervention; resource use of patients and	Probabilities of cost-effectiveness based on QALYs were low Probabilities of cost-effectiveness based of intervention on (1) NEADL: 51%; (2) CBS 62% from health and social care perspective; 68% from societal perspective; (3) QALY (patient): 36% from health and social care perspective; QALY (carer): 2% at a £20,000 to £30,000 threshold per QALY gained	Applicability: Sufficiently applicable (+) Quality: Overall good quality; because of insufficient detail provided about costs there could have been potentially serious limitations; however it is unlikely that changes would have affected cost-effectiveness findings (+) Prices: UK pounds sterling, year not reported Discounting: Not applicable Summary: Findings suggests that training

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
		Source of effectiveness data: Primary and secondary outcomes via self-completed questionnaires in hospital at baseline, and via postal questionnaires at 6 and 12 months. Where the patient was unable to complete the questionnaire independently, the caregiver could provide help or complete the questionnaire by proxy Source of resource use data: Client service receipt inventory (CSRI) in interviews; in addition records of patient and caregiver deaths, hospital readmissions, and institutionalisations Source of unit cost data: Not stated Sensitivity analysis: Cost-effectiveness acceptability curves using threshold ranges of £0 to 2000 for point gains on the NEADL and CBS and £0 to 50,000 for QALY gains	carers measured via adapted version of CSRI Findings: Mean cost per patient of training and development intervention was: IG £82 v. CG £39; total patient and carers costs were similar in both groups (length of the initial stroke admission and associated costs were £13,127 for the intervention group and £12,471 for the control group; adjusted mean difference £1,243 (95% CI –1533 to 4019]; p-value=0.380); carers in IG had higher health and social care costs at 6 months (adj. mean diff £207 (95% CI 5–408, p=0.045) but no significant diff. over 12 months The number of deaths, hospital readmissions, or institutionalisation rates did not differ at either 6 or 12 months		to carers of stroke patient before hospital discharge was unlikely to be cost-effective. Findings can be used to inform recommendations
Acronyms: IG=intervention group, CG=comparison group, N=number of participants in whole study population, CBS=Caregivers Burden Scale, EQ-5D =EuroQoL 5-					

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
dimensional questionnaire which is a standard health measure that allows the calculation of quality-adjusted life years (QALYs), NEADL=Nottingham Extended Activities of Daily Living, HADS= Hospital Anxiety and Depression Scale; CI=confidence Interval as a measure of reliability of an estimate, p-value = measure that helps to determine statistical significance, usually values under 0.05 or 0.01 are used to confirm that a finding was significant, SD=Standard deviation as a measure used to describe variation from the mean					

Patel A, Knapp M, Evans A, Perez I, Kalra L (2004) Training care givers of stroke patients: economic evaluation, British Medical Journal, 328: 1–6

Study details	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: cost-effectiveness	Comments
Patel et al 2004 UK Cost-effectiveness	Intervention: 3–5 training sessions (30-45mins) to unpaid carers on stroke rehabilitation unit plus 1 home follow-up session; training consisted of instructions in basic skills of moving and handling, facilitation of activities of daily living, simple nursing tasks Control: Conventional care on a stroke rehabilitation unit	Population: Unpaid carers of stroke patients; a third of patients used social services for personal care and up to a sixth for domestic help Study design: Single, blind, randomised controlled trial, N=300 Source of effectiveness data: EQ-5D questionnaire in interviews with carers at baseline, and at 4, 12, 26 and 52 weeks after stroke Source of resource use data: Client Service Receipt Inventory (CSRI) filled in by patients to collect data after	1 Outcomes: description and values Primary outcome measure: Health and social care costs during first year after onset of stroke; reported under-costs; Secondary outcome measure: Quality of life adjusted years (QALY) of unpaid carers based on EQ-5D: No significant difference in QALY values IG vs CG at baseline (0.94 SD 0.10 vs 0.94 SD 0.14) and at one year (0.91 SD 0.11 vs 0.90 SD 0.14) The authors note that it was likely that the EQ-5D was insensitive towards carers' quality of life rather than that there were no effects 2 Costs: description and values Resource use: health and social care services over 1 year after onset of stroke; hospital use for 3 months period before stroke	The authors state that it was not necessary to calculate incremental cost-effectiveness ratios because the intervention was the dominant option in terms of costs and outcomes	Applicability: Sufficiently applicable (+) Quality: Overall good quality study with minor limitations (++) Prices: UK pounds sterling, in 2001/12 prices Discounting: Not applicable Summary: Findings suggested that training to carers of stroke patient after

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		hospital discharge retrospectively – at 12, 26, 52 weeks; therapist recorded data on hospital use and therapy input; hospital and social care data from both sources verified against records of service providers Source of unit cost data: Local sources including charges rather than costs; national statistics; opportunity cost method to value unpaid care with minimum wage Sensitivity analysis: (1) Unit costs of unpaid care were altered applying higher replacement cost of a home care worker; (2) Length of hospital stay was increased by 10%, 15%, 20%.	No significant difference in resource use between IG and CG at baseline Significant reduction in hospital stay in IG: mean difference -12.4 days, 95% CI -19.5 to -5.6 Significant reduction in physiotherapy in IG (probably because of shorter stay in hospital): -30.2 units, -51.8 to -8.9 Significant reduction in occupational therapy in IG (probably because of shorter stay in hospital): -3.2 units, -4.8 to -1.6 Significant reduction in day care in IG: -2.8 visits, -5.1 to -0.5 Significant reduction in total annual costs in IG ($p<0.001$), due to shorter hospital stay (rather than reduced costs in the 12 months after stroke) No sigificant differences in personal care, domestic help or unpaid care Costs of unpaid care: IG £884 (SD £1,482) and CG £933 (SD £1,283)		hospital discharge led to better outcomes and reduced costs (due to shorter hospital stay) than standard care; findings can be used to inform recommendations but need to be interpreted in the context of the particular care setting of a stroke rehabilitation unit
Acronyms: IG=intervention group, CG=comparison group, N=number of participants in whole study population, EQ-5D =EuroQoL 5-dimensional questionnaire which is a standard health measure that allows the calculation of quality-adjusted life years (QALYs), CI=confidence interval as a measure of reliability of an estimate, p-value = measure that helps to determine statistical significance, usually values under 0.05 or 0.01 are used to confirm that a finding was significant, SD=standard deviation as a measure used to describe variation from the mean					