National Institute for Health and Care Excellence

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Consultation

Chapter 9 Community nursing

Emergency and acute medical care in over 16s: service delivery and organisation

NICE guideline <number>

July 2017

Draft for consultation

Developed by the National Guideline Centre, hosted by the Royal College of Physicians

1

Chapter 9 Community nursing

Contents

Nurse-led community care 5

9.1 Introduction 5

9.2 Review question: Does community matron or nurse-led care improve outcomes compared to usual care? 5

9.3 Clinical evidence 6

9.4 Economic evidence 47

9.5 Evidence statements 49

9.6 Recommendations and link to evidence 50

Extended access to community nursing 53

9.7 Review question: Is extended access to community nursing/district nursing more clinically and cost effective than standard access? 53

9.8 Clinical evidence 53

9.9 Economic evidence 53

9.10 Evidence statements 54

9.11 Recommendations and link to evidence 55

Appendices 69

Appendix A: Review protocols 69

Appendix B: Clinical study selection 72

Appendix C: Forest plots 74

Appendix D: Clinical evidence tables 79

Appendix E: Health economic evidence tables 150

Appendix F: GRADE tables 155

Appendix G: Excluded clinical studies 158

Appendix H: Excluded health economic studies 161

1

Nurse-led community care

9.1 Introduction

In this chapter we examine the clinical and cost effectiveness of nurse-led community care and whether extended access to these services is appropriate.

"Community nursing encompasses a diverse range of nurses and support workers who work in the community including district nurses, intermediate care nurses, community matrons and hospital at home nurses"[105]. Within this chapter community matrons and community specialist nurses will be referred to as well as community/district nurses.

This chapter firstly evaluates the clinical and cost effectiveness of nurse-led community care including evidence of community matrons as well as community specialist nurses.

A community matron has been described as a "highly experienced senior nurse who works closely with patients (mainly those with serious long term conditions or complex range of conditions) in a community setting to directly provide, plan and organise their care[107]. Community Matrons were introduced in 2004 in response to a growing awareness that "Care of patients with multiple long-term conditions has been uncoordinated historically, ad hoc, reactive care with little preventive intervention in the absence of one specific healthcare professional responsible for overall health and social care needs"[41].

A community specialist nurse is a senior nurse with specific knowledge and experience in one condition often Heart Failure, COPD, Multiple Sclerosis, Parkinson 's disease, Diabetes. They may be based in and employed by acute or community trusts and will provide support to GP's and the district nursing teams in the management of symptoms and exacerbations. Specialist nurses will hold individual caseloads and often visit patients in hospital or at home and write admission avoidance plans with patients. They will often have strong links with the teams in the acute sector.

The increasing incidence of people living with multiple long-term conditions and increasing care costs resulted in government legislation[39,40,42,43]. *The National Service Framework for Long-Term Conditions*[43] provided a framework that advocated person-centred care in a service that is efficient, supportive and appropriate at every stage from diagnosis to end of life".[99]

In this chapter we also examined whether extended access to community nursing/district nursing is more clinically and cost effective than standard access. This focuses on extending and standardising the current provision of the existing services, specifically district nurse teams in light of the move towards a comprehensive 7 day service across the NHS.

The current challenges facing the NHS are well known, and community nursing in all forms could be part of the solution for achieving the goals set out in the Five year forward View: enabling people with increasingly complex levels of health and social care requirements to be able to receive care close to home, have timely and appropriate discharge from hospital and have reduced need for unplanned care.

9.2 Review question: Does community matron or nurse-led care improve outcomes compared to usual care?

For full details see review protocol in Appendix A.

Table 1: PICO characteristics of review question

Population	Adults and young people (16 years and over) with a suspected or confirmed AME or

	patients at risk of an AME.
Intervention	Community matron or nurse-led care.
Comparison	Usual care.
Outcomes	• Mortality during study period (CRITICAL) • Quality of life during study period (CRITICAL) • Readmission up to 30 days • Number of admissions to hospital after 28 days of first admission • Avoidable adverse events during study period (CRITICAL) • Number of presentations to Emergency Department during study period • Number of GP presentations during study period • Length of hospital stay during study period • Patient and/or carer satisfaction during study period (CRITICAL)
Study design	Systematic reviews (SRs) of RCTs, RCTs, observational studies only to be included if no relevant SRs or RCTs are identified.

9.3 Clinical evidence

We searched for systematic reviews and randomised trials comparing the effectiveness of community matron/nurse-led interventions with usual care to improve outcomes for patients.

We identified 2 Cochrane reviews evaluating nurse-led interventions compared to usual care.[133,142] The reviews were assessed for relevance to the review protocol and methodology and were adapted and updated as part of this systematic review. Data for the studies presented in the Cochrane reviews has been included in the analysis. We have updated the Cochrane reviews with additional randomised controlled trials found from the search.

The Cochrane review [133] included RCTs comparing disease management interventions specifically directed at patients with chronic heart failure (CHF) to usual care. The review had 3 interventions: 1) case-management interventions, where patients were intensively monitored by telephone calls and home visits, usually by a specialist nurse; 2) clinic interventions involving follow up in a specialist CHF clinic; 3) multidisciplinary interventions (a holistic approach bridging the gap between hospital admission and discharge home delivered by a team). Only the case-management intervention by a specialist nurse matched our protocol criteria and studies from the other two interventions were excluded. The Cochrane review [143] included RCTs evaluating respiratory health care worker programmes for COPD patients. Only those studies from the Cochrane reviews meeting our protocol criteria were included in our evidence review. The Cochrane reviews included only CHF and COPD patients so additional RCTs were included in other populations. Also, RCTs published after the Cochrane reviews were included.

Fifty three studies were included in the review (2 of which were Cochrane reviews); these are summarised in Table 2 below. Evidence from these studies is summarised in the clinical evidence summary below (Table 3). See also the study selection flow chart in Appendix B, study evidence tables in Appendix D, forest plots in Appendix C, GRADE tables in Appendix F and excluded studies list in Appendix G.

Table 2: Summary of studies included in the review

Study	Intervention and comparison	Population	Outcomes	Comments

Study	Intervention and comparison	Population	Outcomes	Comments
Cochrane reviews				
Takeda 2012[133]	Clinical service organisation for heart failure. Randomised controlled trials (RCTs) with at least 6 months follow up, comparing disease management interventions specifically. directed at patients with chronic heart failure (CHF) to usual care.	Adults with CHF. Interventions were classified by: (1) case management interventions (intense monitoring of patients following discharge often involving telephone follow up and home visits); (2) clinic interventions (follow up in a CHF clinic) and (3) multidisciplinary interventions (holistic approach bridging the gap between hospital admission and discharge home delivered by a team).	Mortality, readmission and admissions.	The components, intensity and duration of the interventions varied, as did the 'usual care' comparator provided in different trials. 19 studies from the Cochrane review included in our review
Wong 2012[142]	Home care by outreach nursing for chronic obstructive pulmonary disease (COPD). Randomised controlled trials (RCTs) evaluating the effectiveness of outreach respiratory health care worker programmes for COPD patients in terms of improving lung function, exercise tolerance and health related quality of life of patient and carer, and reducing mortality and medical service utilisation	Adults with COPD. Interventions involved an outreach nurse visiting patients in their homes, providing support, education, monitoring health and liaising with physicians.	Hospitalisations, disease-specific quality of life, presentations to ED, presentations to GP.	Studies in which the therapeutic intervention under test was physical training were not included. 5 studies from the Cochrane review included in our review
Community nurse-led interventions RCTs				
Aldamiz-Echevarria 2007[4]	Intervention: • Home visits by physicians and nurses, for clinical examination, tests/analyses as required, and adjustment of medication as required (note: this intervention was not HF specific, but was intended to reduce readmissions across a	Patient (n= 279) hospitalised for heart failure. Mean (SD) age: 75.3 (11.1) versus 76.3 (9.4). Percentage male: 38.7 versus 40.1. Ethnicity: not stated.	Mortality, admissions, presentations to ED	In Cochrane review: Clinical service organisation for heart failure. Duration of intervention: 15 days. 6 and 12 months follow-up.

Study	Intervention and comparison	Population	Outcomes	Comments
	range of medical and surgical conditions). • Additional nursing staff home visits 2, 5 and 10 days after discharge for education for patients and relatives about HF (basic facts and management, that is, symptoms, life style, diet and therapy) • Patients received educational manual and a phone number for queries • Comparator: usual care (referral to primary care physician)	Spain.		
Allen 2009 [6]	Intervention: An advanced practice nurse provided care management to patients. • Advanced practice nurse care manager (APN-CM) performed an in-home assessment within 1 week of discharge. • Standard education and intervention protocols for stroke and common post-stroke complications were implemented during the home visit. • Results of home assessment were reviewed by an interdisciplinary post-stroke consultation team. (PSC-team) • PSC-team developed patient care plans specific to each problem identified by the APN-CM. • Periodic phone calls were used to assess patient changes that warranted further intervention. • Additional home visits were made on an as-	People (n=380) diagnosed with ischemic stroke discharged to home from the acute care hospital, or discharge to home within 8 weeks from a short-term skilled nursing facility (SNF). Mean age: 68.5 years. Male percentage: 50%. Ethnicity: African-American 16%. USA.	Mortality, quality of life and hospital length of stay (narratively reported).	

Study	Intervention and comparison	Population	Outcomes	Comments
	needed basis. Comparator: Control group • After discharge the acute stroke unit or short-term rehabilitation, control subjects received usual post-discharge care from their primary care physician. • No assessments by the research team until after 6-month outcomes were measures. • Patients received mailings every 2 months reminding them of their involvement in the study and providing stroke-related patient educational materials.			
Atienza 2004[8]	Intervention: discharge and outpatient management programme. • 1 to 1 single education session for patients and carers prior to discharge and session with primary care physician post discharge to reinforce education. • teaching brochure to reinforce education, covering: diagnosis of HF, information about the disease (pathogenesis etc.), symptoms of HF, symptoms and signs of worsening HF, what to do if condition worsens, lifestyle advice, medication education for carers. • cardiologist outpatient clinic every 3 months, including medication review • patient given specific/tailored self-management plan.	Patients (n=338) with congestive heart failure discharged from cardiology wards of 3 participating hospitals Median age (IQR) 69 (61-74) in intervention group, 67 (58-74) in usual care group Male sex (both groups) 203 (60%), (intervention group 101/164, 62%), (control group 102/174, 59%) Ethnicity: not given Spain	Mortality and admissions.	In Cochrane review: Clinical service organisation for heart failure. Median duration of intervention: 509 days (IQR 365-649). 1 year follow-up.

Study	Intervention and comparison	Population	Outcomes	Comments
	• visit with primary care physician scheduled within 2 weeks of discharge. • tele-monitoring component -a facilitated telephone monitor (SCT) providing a 24 hour mobile phone contact number which patients were encouraged to contact as necessary. Patients could also telephone the HF team for advice during office hours. Comparator: discharge planning according to the routine protocol of the study hospitals.			
Bergner 1988[9]	Intervention 1:Respiratory home care group (n = 99): • Patients in the respiratory home care group received specialised care from trained respiratory nurses at least 1 a month Intervention 2:Standard home care group (n = 102): • Patients in the standard home care group received standard home care from nurses at least once a month Comparator: Control group (n = 100): Patients in the control group continued to receive usual care	Patients with COPD (n=301). Patients had to have a clinical diagnosis of COPD, be homebound (by US Medicare criteria, for use of public transport), be between 40-75 years of age. USA	Mortality	In Cochrane review: Home care by outreach nursing for COPD The outcomes of the interventions were assessed at 6 and 12 months after enrolment The duration of the intervention period was 12 months.
Blue 2001[11,12]	Intervention Group: ”Specialist nurse intervention“ • During index hospitalisation: Patients were seen by a HF nurse prior to discharge. • After discharge: Home visit by HF nurse and within 48 hours of	Patients (n=165) admitted as an emergency to the acute medical admissions unit at 1 hospital with HF due to LV systolic dysfunction. Actual age of study subjects: usual care	Unplanned admissions within 90 days of discharge, length of stay	In Cochrane review: Clinical service organisation for heart failure Duration of intervention: up to 12 months. 12 month follow-

Study	Intervention and comparison	Population	Outcomes	Comments
	discharge. Subsequent visits by HF nurse at 1, 3, and 6 weeks and at 3, 6, 9 and 12 months. Scheduled phone calls at 2 weeks and at 1, 2, 4, 5, 7, 8, 10 and 11 months after discharge. Additional unscheduled home visits and telephone contacts as required. • Home visits covered: patient education about HF and its Rx, self-monitoring and management. Patients were given a booklet about HF which included a list of their drugs, contact details for HF nurses, blood test results and clinic appointment times. • The trained HF nurses used written drug protocols and aimed to optimise patient treatment (drugs, exercise and diet) and HF nurses also provided psychological support to the patient. HF nurses liaised with the cardiology team and other health care and social workers as required. Comparison Group: Usual Care • "Patients in the usual care group were managed as usual by the admitting physician and, subsequently, general practitioner. • They were not seen by the specialist nurses after discharge."	mean 75.6 years (SD 7.9), intervention 74.4 years (SD 8.6). Male sex: 58% Ethnicity: not given. United Kingdom (Scotland)		up. Also looked at: admission rates in the moderate risk subgroup compared to the high risk sub group.
Boter 2004 [13]	Intervention: Nurse-led intervention • Thirteen experienced and comprehensively	People (n=536) with stroke Mean age range:	Presentations to GP services and patient dissatisfaction.	

Study	Intervention and comparison	Population	Outcomes	Comments
	trained stroke nurses applied the outreach care program that consisted of 3 nurse-initiated telephone contacts (1 to 4; 4 to 8; and 18 to 24 weeks after discharge) and a visit to the patients in their homes (10 to 14 weeks after discharge). • During all contacts, the nurses used a standardised checklist on risk factors for stroke, consequences of stroke and unmet needs for stroke services. • Nurses supported patients and carers according to their individual needs (for example, by giving information or reassurance) Comparator: Control group (no details given).	63-66 years. Male percentage: 49%. Ethnicity: not stated. Netherlands.		
Capomolla 2002[21]	Intervention Group: Comprehensive Heart Failure Outpatient Management Program delivered by the day hospital. • During index hospitalisation: cardiac prognostic stratification and prescription of individual tailored therapy following guidelines and evidence. • After discharge: attendance at day hospital staffed by a multidisciplinary team (cardiologist, nurse, physiotherapist, dietician, psychologist and social assistant). Patient access to the day hospital	Patients (n=234) with CHF referred for admission to the Heart Failure Unit at 1 centre or the Heart Transplantation Programme. All had been hospitalised for HF. Actual age of study subjects: mean age 56 years (SD 10). Male sex: 84%. Ethnicity: not given. Italy.	Mortality and admissions	In Cochrane review: Clinical service organisation for heart failure. Duration of intervention: not clear. Follow-up at 12 months.

Study	Intervention and comparison	Population	Outcomes	Comments
	'modulated according to demands of care process'. Care plan developed for each patient. Tailored interventions covering: cardiovascular risk stratification; tailored therapy; tailored physical training; counselling; checking clinical stability; correction of risk factors for haemodynamic instability; and health care education. Patients who deteriorate re-entered the day hospital through an open-access programme. • Day hospital also offered: intravenous therapy; laboratory examinations; and therapeutic changes as required. Comparator: Usual care • During admission: cardiac prognostic stratification and prescription of individual tailored therapy following guidelines and evidence • After discharge: 'The patient returned to the community and was followed up by a primary care physician with the support of a cardiologist'.			
Carroll 2007[23]	Intervention: Collaborative peer advisor/advanced practice nurse intervention plus standard care • APN recruited and trained the peer advisors and assigned them to patients. • APN supported	Older adults (n=247) with a diagnosis of myocardial infarction (MI) or coronary artery bypass surgery (CABS)	Length of hospital stay during study period	Not in Cochrane. Data collection at 6 weeks, 3, 6, and 12 months after MI and CABS. Data reported in paper at 12 months.

Study	Intervention and comparison	Population	Outcomes	Comments
	patients and peer advisors through 24-hour telephone contact. • Intervention lasted 12 weeks. APN made a home visit and called 3x during the intervention. Peer advisor made weekly calls to patient. Comparator: Usual care.	Recruited during hospitalisation before discharge after MI and CABS USA		Four groups: CI+intervention+SC; CAB+intervention+S; CI+SC; CAB+SC More about the effect of the peer advisor than the nurse.
Cline 1998[29,30]	Intervention Group: 'Management programme for heart failure': • During index hospitalisation patients received an education programme from HF nurse consisting of 2 visits. • Two weeks after discharge patients and their families were invited to a 1 hour group education session led by the HF nurse and were also offered a 7 day medication dispenser if deemed appropriate. • Patients were followed up at a nurse directed o/p clinic and there was a single prescheduled visit by the nurse at 8 months after discharge. The HF nurse was available for phone contact during office hours. • Patients were offered cardiology outpatient visits 1 and 4 months after discharge. • The inpatient and outpatient education programme covered: HF pathophysiology, pharmacological and non-pharmacological treatment.	Patients (n=190) hospitalised primarily because of heart failure. Actual age of study subjects: mean 75.6 years (SD 5.3) Male sex: 53% Ethnicity: not given Sweden.	Mortality (at 90 days), admissions, length of stay, quality of life (at 1 year) using The Quality of Life.	In Cochrane review: Clinical service organisation for heart failure. Duration of intervention: 12 months. 1 year follow-up.

Study	Intervention and comparison	Population	Outcomes	Comments
	Comparison Group: usual care • These patients were ”followed up at the outpatient clinic in the department of cardiology by either cardiologists in private practice or by GP”.			
Coultas 2005[31]	Intervention 1: Medical management group (n = 49): • Patients in the medical management group received approximately 8 hours of education about the diagnosis of COPD, the assessment of COPD severity, patient self-management, smoking cessation, follow-up and the formation of an action plan for exacerbations. Intervention 2: Medical and collaborative management group (n = 51). • In addition to medical management, patients in the medical and collaborative management group received approximately 8 additional hours of training in ’collaborative care’, intended to facilitate the adoption of healthy behaviours such as lifestyle and self-management skills. Comparator: Control group (n = 51) • Patients in the control group continued to receive usual care.	Patients (n=217) with COPD who fulfilled 3 criteria: were a current or former smoker with at least a 20-pack-year smoking history, had at least 1 respiratory symptom (for example,. cough, shortness of breath, wheeze) during the past 12 months, and had demonstrable airflow obstruction (FEV1/FVC ratio < 70% and FEV1 < 80% predicted). USA.	Health related quality of life (St George Respiratory Questionnaire, SF-36), presentations to ED, presentations to GP, hospitalisations.	In Cochrane review: Home care by outreach nursing for COPD. The outcomes of the interventions were assessed at the end of the 6 month intervention Period. The duration of the intervention period was 6 months.
Courtney 2009[32]	Intervention: Nurse-led exercise and telephone follow-up programme. • Usual care plus	Adults (n = 128) >65 years, with an acute medical admission and 1 risk factor for	Readmissions, GP presentations, quality of life and length of stay.	Not in Cochrane.

Study	Intervention and comparison	Population	Outcomes	Comments
	registered nurse-led (and physiotherapist) intervention (exercise intervention, nursing intervention while in hospital. • Home visits and telephone calls by nurse, assessment of support, progress monitoring). Comparator: Control group: routine care, discharge planning and rehabilitation advice normally provided.	readmission in Australia.		
De Busk 2004[37]	Intervention: 'specialist nurse intervention': • One hour educational session with a nurse in the patient's medical centre. • Patient received educational materials including methods for self-monitoring symptoms, body weight and medications; a dietary management workbook; food frequency questionnaires. They viewed a video on treatment process, received instructions on how to access emergency care if needed. • 45 min baseline telephone counselling session within 1 week of randomisation by experienced nurse care manager. Subsequent nurse contacts tailored to meet needs of the patient. Follow up phone calls by nurse to patient weekly for 6 weeks, biweekly for 8 weeks, monthly for 3 months, bimonthly for 6 months. • Nurse care managers obtained permission from physicians to	Patients (n=462) hospitalised with a provisional diagnosis of heart failure in study hospitals as indicated by new onset or worsening heart failure. Mean age all = 72 year (SD 11) Ethnicity, n (%): White 195(86) versus 191(82); Black 13(5) versus 14(6); American Indian 9(4) versus 18(8); Hispanic 7(3) versus 7(3); Asian 4(2) versus 4(2). USA.	Mortality, admissions and presentations to ED.	In Cochrane review: Clinical service organisation for heart failure. Duration of intervention: 12 months. Outcomes reported at 1 year.

Study	Intervention and comparison	Population	Outcomes	Comments
	initiate and regulate pharmacologic therapy for HF according to study protocol. Nurses coordinated treatment plan with patients and physicians. Comparator: usual care (no details given).			
Del Sindaco 2007[38]	Intervention: disease management programme (DMP) combining hospital clinic-based and home based care • teams included a cardiologist experienced in geriatrics, specialised nurses and the patient's primary care physician. • programme components: discharge planning, continuing education, therapy optimisation, improved communication with healthcare providers, early attention to signs and symptoms and flexible diuretic regimes. • patients given a written list of recommendations, a weight chart, a contact number available 6h/day, and an education booklet. • follow-up via hospital clinic visits, periodical nurse's phone calls. • patients attended heart failure clinics within 7 to 14 days of discharge and at 1, 3 and 6 months thereafter for optimisation of treatment and education. • primary care physicians assessed adherence to treatment, evaluated adverse effect and co-morbidities, and monitored diet.	Elderly patients (n=184) discharged home after hospitalisation due to heart failure. Age: Control: 77.5 (SD 5.7), Intervention: 77.4 (SD 5.9) Percentage male: Control: 52.8, Intervention: 51.2 Ethnicity: not stated. Italy.	Mortality, admissions and quality of life.	In Cochrane review: Clinical service organisation for heart failure. Duration of intervention: 24 months. Follow-up at 24 months.

Study	Intervention and comparison	Population	Outcomes	Comments
	Control: usual care • Optimised treatment and standard education. All treatments and services ordered by primary care physician and/or cardiologist. Baseline clinical evaluation and therapeutic plan documented.			
Doughty 2002[44,45]	Intervention: 'integrated heart failure management programme' • After discharge: Outpatient review at heart failure clinic within 2/52 of discharge from hospital: clinical status reviewed, pharmacological treatment based on evidence based guidelines, one-to-one education with study nurse, education booklet provided. • Patient diary for daily weights, Rx record & clinical notes provided. Detailed letter faxed to GP and follow up phone call to GP. • Follow up plan aiming at 6 weekly visits alternating between GP and HF clinic. • Group education sessions for patients run by cardiologist and study nurse: 2 sessions offered within 6 weeks of discharge and 1 at 6 months post d/c. • Telephone access to study team for GPs or patients during office hours Group education sessions covered: education about disease; monitoring daily body weight and	Patients (n=197) admitted to general medical wards with a primary diagnosis of heart failure. Actual age of study subjects: mean 73 years (SD 10.8, range 34 to 92 years). Male sex: 60%. Ethnicity: 'NZ European' 79%. New Zealand.	Mortality, admissions, quality of life and length of stay.	In Cochrane review: Clinical service organisation for heart failure. Duration of intervention: 12 months. Outcomes at 12 months.

Study	Intervention and comparison	Population	Outcomes	Comments
	action plans for weight changes; medication; exercise; diet. Comparison: usual care			
Ducharme 2005[47]	Intervention: multi-disciplinary heart failure clinic with phone follow-up from nurses: • evaluation at clinic within 2 weeks of hospital discharge; rapid access to cardiologists, clinician nurses, dieticians and pharmacists, with access to social workers and other medical specialists as required. • follow-up phone call from nurse within 72 hours of hospital discharge and then monthly. • After baseline evaluation, clinic cardiologists individualised treatment plan. • One-on-one education of the patient and family with the study nurse initiated at first clinic visit (disease process, symptoms and signs of HF, fluid and sodium intake restrictions, body weight monitoring, medications and compliance, recommendations regarding exercise and diet. • patient diary (for example, daily weight, medication record, clinical notes) • individualized dietary assessments; pharmacist evaluated medications • monthly visits with both a cardiologist and nurse at the clinic • Patients advised to call clinic nurse if symptoms worsened.	Patients (n=230) seen at the emergency department of or admitted to the Montreal Heart Institute with a primary diagnosis of congestive heart failure. Mean (SD) age: 68 (10)/10 (10) % male: 83 (73)/82 (71) ethnicity: not stated. Canada.	Mortality, admissions, presentations to ED, quality of life and length of stay.	In Cochrane review: Clinical service organisation for heart failure. Duration of intervention: 6 months. Outcomes at 6 months.

Study	Intervention and comparison	Population	Outcomes	Comments
	Comparator: standard care.			
Duffy 2010[48]	Intervention: Home health nurses intervention (telephone and in-home visits over 6 weeks) Control group: 'Usual home visits' Symptom recognition and reporting, education, emotional support	Older adults (n=32) with heart failure in USA. Patients recruited that had been referred to home care following hospitalisation for HF	Admissions (after 28 days), length of hospital stay during study period, quality of life, patient satisfaction	Not in Cochrane. Control group not in hospital and not specified what 'usual home visits' are Excluded from our HaH classification because control not in-patient
Gagnon 1999[52]	Intervention: Nurse case management • Nurse case management consisted of coordination and provision of health care services by nurses, both in and out of hospital, for 10 month period. • Involves access to whole MD team Comparator: Usual care • Variation by healthcare provider and community health centre (hospital and community services provided separately)	Frail older people (n=427) at risk of repeated hospital admissions and discharged from ED in Canada. Patients identified from ED discharge register	Quality of life (SF-36 subscales only), patient satisfaction, admissions, presentations to ED, length of hospital stay during study period	Not in Cochrane.
Hansen 1992[58]	Intervention: Home visits by district nurse • Visit by nurse and GP. Nurse evaluated discharge plan had been put in place, alter service if needed Comparator: Usual care • Social and medical support according to prevailing routines	Older adults (n=404) in Denmark. Recruited on the day of normal discharge	Admissions, mortality	Not in Cochrane. Excluded from our HaH part of the review. Cochrane (HaH early discharge) excluded this study because: study did not evaluate hospital at home, but a model for follow-up visits at home after discharge from hospital

Study	Intervention and comparison	Population	Outcomes	Comments
				Not mentioned in Cochrane 'avoidance' review
Harrison 2002[59]	Intervention: Nurse-led translational care intervention plus usual care • Usual care plus comprehensive programme, adding supports to improve the transfer from hospital home (for example,. counselling and education, phone outreach, support) Comparator: Usual care for hospital-to-home transfer • Completion of medical history, nursing assessment form, MD discharge plan; home nursing care	Adults (n=192) with congestive heart failure in Canada. Recruited from hospital and expected to be discharged with home nursing care	Readmissions (within 28 days), presentations to ED, quality of life, length of hospital stay during study period	Not in Cochrane.
Hermiz 2002[60]	Intervention: Community nurse visits and preventative GP care • Two home visits by a community nurse: detailed assessment of the patient's health status and respiratory function; education on the disease and advised on stopping smoking (if applicable), management of activities of daily living and energy conservation, exercise, understanding and use of drugs, health maintenance, and early recognition of signs that require medical intervention; • Referred patients to other services such as home care; care plan posted to the GP • Patients encouraged to continue to refer to the	Patients aged 30-80 years (n=177) who attended the hospital emergency department or were admitted to the hospitals with chronic obstructive pulmonary disease between September 1999 and July 2000 were identified from their records and invited to participate. Australia	Mortality at 3 months, Quality of life (St George's respiratory questionnaire) at 3 months, length of hospital stay (days) at index admission, presentations to ED at 3 months, admissions to hospital at 3 months, GP presentation at 3 months	In Cochrane review: Home care by outreach nursing for COPD COPD patients did not present with exacerbation

Study	Intervention and comparison	Population	Outcomes	Comments
	education booklet for guidance and to keep in contact with their GP for 4 weeks. Comparator: Usual care • Discharge to GP care with or without specialist follow up; did not include routine nurse or other community follow up. Duration: Not stated			
Hunger 2015 [64]	Intervention: • Nurse-led individualised home-follow up programme with a duration of 1 year • Intervention programme started with an initial session of 1 hour, taking place shortly before hospital discharge, where patients were provided with information about disease, co-morbidities, and medication. • Information was given orally and in written form of a so called 'heart book'. • After discharge, home visits (up to 4) and telephone calls (at least every 3 months) were carried out according to patient need and risk level. (risk level assessed by study nurse during first home visit) Comparator: Control group (usual care)	Older people (n=340) admitted with acute myocardial infarction. Age (mean ± SD): Intervention 75.2±6.0; Control 75.6±6.0. Percentage male: 62% Ethnicity: not stated Germany	Health Assessment Questionnaire Disability Index (HAQ-DI), Barthel Index	
Jaarsma 2000[68,69]	Intervention: 'Supportive educational intervention' • During index	Patients (n=179) admitted to the cardiology unit of 1	Quality of life, presentations to GP, admissions,	In Cochrane review: Clinical service

Study	Intervention and comparison	Population	Outcomes	Comments
	admission: Intensive education by study nurse using standard nursing care plan • After discharge: Study nurse phoned patient within 1 week of discharge to assess potential problems and made appointment for home visit. At home visit education continued. Between discharge and home visit patient could contact study nurse if they encountered problems. • After home visit patient encouraged to contact their cardiologist, GP or emergency heart centre with any problems. Educational component covered: symptoms of worsening failure, sodium restriction, fluid balance and compliance and individuals' problems, and included education and support to patients' family. Comparator: Usual care. • "A nurse or physician, depending on his or her individual insight into the patients' questions, provided these patients with education about medication and lifestyle". • Usual care patients did not receive structured education	hospital with HF symptoms and diagnosis verified with Boston score. Actual age of study subjects: not given for original group, those who remained at 9 months were mean age 72 years (SD 9) at baseline. Male sex: of those who remained at 9 months, 60% Ethnicity: not given Netherlands	mortality (at 9 months)	organisation for heart failure Duration of intervention: up to 10 days after discharge from index admission, on average 1 week* Outcomes reported at 9 months
Jaarsma 2008[70]	Intervention 1: disease management program basic intervention: • During index hospital stay: patient education	Patients (n=1049) admitted to hospital for HF Age: intensive: 70	Mortality, admissions, quality of life	In Cochrane review: Clinical service organisation for heart failure

Study	Intervention and comparison	Population	Outcomes	Comments
	by HF nurse according to protocol and guidelines, behavioural strategies used to improve adherence • Within 2/52 of d/c telephone call to pt from HF nurse • During regular visits to cardiologist at the outpatient clinic (at 2, 6, 12 and 18 months after d/c) additional visits to HF nurse. Additional visits just to the HF nurse at the outpatient clinic at one, 3, 9, & 15 months after d/c. Telephone access to HF nurse Monday to Friday 9am -5 pm, patients (and families) encouraged to contact their nurse if any change in their condition or any questions. Intervention 2: Intensive intervention and basic intervention • Home visit by HF nurse within 10 days of d/c to assess coping, CHF health status general health, and medical, health care and social support. • Second home visit 11 months after discharge, Weekly telephone calls by the HF nurse in the first month after discharge then monthly calls. - Out of hours back up to provide 24 hour telephone coverage. • HF nurse to consults multidisciplinary team at least once during both index admission and once during follow up to optimise her advice for each patient.	(SD 12), basic: 71 (SD 11), control: 72 (SD 11) Percentage male: intensive: 61, basic: 66, control: 60 Ethnicity: Not stated Netherlands		Duration of intervention: 18 months

Study	Intervention and comparison	Population	Outcomes	Comments
	Comparator: Control group - standard management by cardiologist and, subsequently, GP			
Jolly 1998[71]	Intervention: Specialist liaison nurse-led secondary preventative care programme • Intervention sought to bridge the gap between hospital and general practice, provide a structured programme of follow-up care, promote adherence to therapies, and to encourage general practice nurses to provide structured follow-up Comparator: Control group (not details reported)	Adults (n=422) with myocardial infarction and adults (n=175) with a new diagnosis of angina recruited during hospital admission or chest pain clinic in Southampton, UK. 1995 to 1996	Admissions (after 28 days)	Not in Cochrane. RCT but not randomised at the patient level rather GP practices were randomised. Data were first analysed on an individual patient basis.
Kasper 2002[77]	Intervention: Intervention Group: 'multidisciplinary program' • During index hospitalisation: CHF cardiologist designed an individualised treatment plan which included medication, diet and exercise management • After discharge: 'Telephone nurse co-coordinator' phoned patients within 72 hours of discharge and then weekly for 1st month, bi-weekly in 2nd month and then monthly. Monthly follow up with CHF nurses (usually in CHF clinic). • 'Primary care physicians' (66% internal medicine physicians,	Patients (n=200) admitted to 1 of 2 hospitals with a primary diagnosis of CHF Actual age of study subjects at recruitment: median 63.5 years (range 25-88 years) Male sex: 61% Ethnicity: 'white' 64% USA	Admissions (at 6 months), mortality, quality of life,	In Cochrane review: Clinical service organisation for heart failure Duration of intervention: 6 months. Outcomes at 6 month reported

Study	Intervention and comparison	Population	Outcomes	Comments
	29%cardiologists) received regular updates from CHF nurses and were notified of abnormal lab results. All intervention patients received: pill sorter, list correct medications, list of dietary and exercise recommendations, 24 hour telephone contact number and patient educational material. If required and financial resources limited patients also received: 3g sodium 'Meals on • Wheels' diet, weigh scale, medications, transport to the clinic and a phone. CHF cardiologist saw patients at 6 months. Content of CHF nurse follow up: aimed to implement the treatment plan designed by CHF cardiologist which included initiation and titration of drugs, a low sodium diet and exercise recommendations Comparator: Usual care • Usual care by the patients' primary physicians (73% internal medicine physicians, 26% cardiologists). • CHF cardiologist designed treatment plan for each patient "documented in patient's chart without further intervention"			
Kimmelstiel 2004[78]	Intervention: Specialized Primary and Networked Care in HF (SPAN-CHF)	Patients (n=200) were enrolled during an index HF	Admissions (during first 90 days), length of	In Cochrane review: Clinical service

Study	Intervention and comparison	Population	Outcomes	Comments
	• Home visit from nurse-manager within 3 days of discharge, focusing on dietary and medical compliance, daily weights, self-monitoring, and early reporting of changes in weight or clinical status. • Teaching tool 'Patient and Family Handbook' given to patients during home visit, including sections on HF (definition), medications, low-salt diet, importance of daily weight, and clinical signs and symptoms that should prompt a call to the SPAN-CHF • nurse or primary care physician (plus contact phone numbers). • During home visit, nurse performed cardiovascular examination and symptom assessment. Weekly or biweekly phone calls from nurse-manager to patients focused on • identifying changes in clinical condition and education reinforcement. • Patients had 24-hr 7-day telephone access to nurse managers, and were instructed to report changes in clinical status and relevant weight change. Frequent communication between nurse-managers, primary care physicians and HF specialist. Comparator: usual care	hospitalisation or within 2 weeks of discharge. Age: Control: 73.9 (SD 10.7), Intervention 70.3 (SD 12.2) Percentage male: Control: 58.3, Intervention: 57.7 Ethnicity: Not stated USA	stay, admissions (at 1 year)	organisation for heart failure Duration of intervention: 90 days, followed by passive surveillance (nurse-manager available for incoming calls but didn't make scheduled calls) for clinically stable patients or continuation for patients with overt clinical instability (class A)
Kotowycz 2010[80]	Intervention: Early hospital discharge with outpatient follow-up by advanced practice nurse (APN) • Early discharge plus follow-ups by the APN	Adults (n=54) with ST-segment elevation myocardial infarction (STEMI) treated with	Mortality, presentations to ED for cardiac events, cardiac and total admissions,	Not in Cochrane.

Study	Intervention and comparison	Population	Outcomes	Comments
	initially face-to-face, later by telephone, for patient education, medication, facilitation of discharge planning, raising awareness of follow-up appointments and outpatient tests. Comparator: Control group • Discharge planning and follow-up were left to the treating physician and nursing team; no added nursing intervention	primary rescue percutaneous coronary intervention in Canada. Recruited at time of admission	length of hospital stay during study period	
Krumholz 2002[81]	Intervention: 'Education and Support' • After discharge: Initial hour long face to face consultation with experienced cardiac nurse within 2 weeks of discharge using a teaching booklet. • Following this weekly telephone contact for 4 weeks, bi-weekly for 8 weeks then monthly until 1 year. • Initial consultation covered: patient knowledge of illness; the relation between medication and illness; health behaviours and illness; knowledge of early signs and symptoms of decompensation, where and when to obtain assistance. • Follow up phone calls reinforced these domains. However the nurse could recommend that the patient consulted his/her physician when the patient's condition deteriorated sharply or when the patient had problems, in order to help patients to	Patients (n=88) hospitalised for HF; needed to have either admission diagnosis of heart failure or radiological signs of heart failure on admission chest x-ray. Actual age of study subjects: median age 74 years, controls mean age 71.6 (SD 10.3), intervention 75.9 (SD 8.7) Males: 57% Ethnicity: '74% Caucasians' USA	Mortality, admissions, length of stay	In Cochrane review: Clinical service organisation for heart failure 12 month follow-up Duration of intervention: 1 year

Study	Intervention and comparison	Population	Outcomes	Comments
	understand when and how to seek and access care Comparator: usual care. All usual care treatments and services ordered by their physicians			
Kwok 2008[83]	Intervention: Community nurse • Usual follow-up plus home visits by community nurse proving counselling (for example,. drug compliance, dietary advice), checking vital signs, and medications. • Nurse access also via pager. Nurse closely liaised with geriatrician or cardiologist. Comparator: Control group • Usual medical and social care and followed up in hospital outpatient clinics by geriatricians or cardiologists.	Adults (n = 105) >60 years, with chronic heart failure in Hong Kong. Recruited on the day or the day before hospital discharge	Mortality, admissions (after 28 days)	In Cochrane review: Clinical service organisation for heart failure
Kwok 2004[84]	Intervention: Community nurse • Usual follow-up plus home visits by community nurse proving counselling (for example,. drug compliance, dietary advice), checking vital signs, medications. Nurse access also via pager. Nurse closely liaised with geriatrician or respiratory physician. Comparator: Control group • Usual medical and social care and followed up in hospital outpatient clinics by geriatricians or respiratory physician.	Older adults (n=157) with a primary diagnosis of chronic lung disease and at least 1 hospital admission in the previous 6 months were recruited during acute hospitalisation in Hong Kong. Recruited on the day or the day before hospital discharge	Mortality, admissions (after 28 days), presentation to ED, length of hospital stay during study period	In Cochrane review: Home care by outreach nursing for COPD

Study	Intervention and comparison	Population	Outcomes	Comments
Leventhal 2011 [88]	Intervention: • Once patients were discharged to home, the intervention began as an ambulatory care programme. • Patients received 1 home visit by a specialised HF nurse approximately 1 week after returning home after discharge from either hospitalisation or rehabilitation • Followed by 17 telephone calls in decreasing intervals over the next 12 months. • Home visit consisted of a physical, psychosocial and environmental assessment, the provision of educational, behavioural and supportive care to build self-care abilities and individualised patient goal-setting to increase self-efficacy. • Following the home visit an individualised nursing care plan was developed that included the patient-identified goals. • Examined by the study HF-cardiologist who recommended lifestyle modifications to the patients and made suggestions for optimal medical management to the patient's primary care physician. Comparator: • Examined by the study HF-cardiologist who recommended lifestyle modifications to the patients and made suggestions for optimal	People (n=42) with decompensated heart failure (HF) Age (mean ±SD): 77.0±6.5 years Percentage male: 62% Ethnicity: not stated Switzerland	Mortality	

Study	Intervention and comparison	Population	Outcomes	Comments
	medical management to the patient's primary care physician.			
Martin 1994[93]	Intervention: Nurse manager plus assistants • Home treatment team (HTT) comprising of nurse manager and health care assistants. Up to 3x daily visits by HTT worker for up to 6 weeks providing personal care, domestic assistance etc.). • Ward team and nurse manager provided a care plan for each patient. Weekly review of progress. Comparator: Control group • 'appropriate conventional community services'	Elderly patients (n=54) who after acute medical treatment and rehabilitation were still unlikely to be managing at home with the usual community services in the UK	Mortality, admissions (after 28 days)	Not in Cochrane. 12 month trial; clinical assessments at 6 (half sample) and 12 weeks (full sample)
Mejhert 2004[96]; Karlsson 2005[76]	Intervention: "nurse based outpatient management programme" • regular visits to the outpatient clinic and patient encouraged to keep contact with nurse (not clear how regular); nurse checking symptoms and signs of heart failure, blood pressure, heart rate, and weight at each visit • nurses can institute and change medication doses according to standard protocol • patient instructed to check weight regularly and monitor early signs of deterioration. Patients with good compliance instructed to change dosing of diuretics on their own. • dietary advice recommends restricted	Patients (n=208) 60 years of age or older hospitalised with heart failure. Age: Control: 75.7 (SD 6.6), Intervention: 75.9 (SD 7.7) Percentage male: Control: 59, Intervention: 56 Ethnicity: Not stated Sweden	Quality of life (6, 12 and 18 months), admissions (18 months), mortality (18 months)	In Cochrane review: Clinical service organisation for heart failure Duration of intervention: at least 18 months, mean follow up was 1122 (405) days Outcomes reported at 6 and 12 months (QoL) and 18 months for all

Study	Intervention and comparison	Population	Outcomes	Comments
	sodium, fluid, and alcohol intake; information repeated in booklets and computerised educational programmes Comparator: Control group • Treated by GPs according to local health care plan for heart failure. • All patients had clinical examinations and detailed control of medication at 6, 12, and 18 months at the Cardiovascular Research Lab			
Nucifora 2006[106]	Intervention: "HF management programme" • pre discharge intensive education by an experienced cardiovascular research nurse using a teaching booklet, covering causes of HF, recognition of symptoms of worsening • HF, the role of sodium restriction and pharmacological therapy, the importance of fluid and weight control, physical activity and complete abstinence from alcohol and smoking. • phone call from nurse 3-5 days post discharge to assess any problems, promote self-management and check compliance, weight and lifestyle issues. Patients had telephone access from 8.00 to 9.00am, Monday to Friday, and out of hours answering machine. • outpatient visits to doctor at 15 days, 1 and 6 months after discharge, to evaluate test results, physical condition and	Elderly patients (n=200) admitted to internal medicine department with a diagnosis of HF during recruitment period Age: Control: 73 (SD 8), Intervention: 73 (SD 9) Percentage male: Control: 62, Intervention: 62 Ethnicity: Not stated Italy	Mortality, readmissions, length of stay, quality of life	In Cochrane review: Clinical service organisation for heart failure Duration of intervention: 6 months Outcomes reported at 6 months

Study	Intervention and comparison	Population	Outcomes	Comments
	medicine adherence and make any required changes to drug therapy Comparator: Control group • pre-existing routine of post-discharge care; that is, usual care by GP. • Outpatient visit to doctor at 6 months post discharge			
Rea 2004[115]	Intervention: Chronic disease management programme implemented by patient's GP and practice nurse • assessment by respiratory physician and respiratory nurse; patient-specific care plan was negotiated by GP and practice nurse including regular check-ups, setting goals for lifestyle changes, symptom management, education on smoking cessation, medication. • Patients visited the practice nurse monthly and GP 3 monthly. They received home visits by respiratory nurse specialist. Comparator: Conventional care • Underwent assessment procedures but received no care plan, were not seen by respiratory physician, did not have access to respiratory nurse specialist. • GPs had access to COPD management guidelines	Adults (n=135) with moderate to severe chronic obstructive pulmonary disease were identified from hospital admission data and GP records in Australia	Mortality, presentations to ED, admissions (after 28 days), quality of life (SF-36—subscales)	Not in Cochrane.
Sinclair 2005 [120]	Intervention: Home-based intervention • General advice from	People (n=324) aged 65 years or over discharged	Quality of life, length of stay, mortality	

Study	Intervention and comparison	Population	Outcomes	Comments
	ward-based staff, outpatient clinic follow-up as necessary and access to the local cardiac rehabilitation programme offered as per usual practice. • People received at least 2 home visits after hospital discharge by a cardiac support nurse. These were 1-2 and 6-8 weeks after discharge. • Extra visits and telephone contacts were permissible if the nurse identified a specific need and purpose. Comparator: usual care • General advice from ward-based staff, outpatient clinic follow-up as necessary and access to the local cardiac rehabilitation programme offered as per usual practice.	home from hospital after emergency admission for suspected myocardial infarction. Age: not stated Percentage male: not stated Ethnicity: not stated UK		
Smith 1999[122]	1. Intervention group (n = 48): Patients in the intervention group received home-based nursing intervention (HBNI) in addition to usual care from GP and OPD services. Home visits were made at 2-4 week intervals over 12 months 2. Control group (n = 48): Patients in the control group were not visited by a nurse but received care from GP and OPD services	Patients (n=96) with COPD who had to have a principal diagnosis of COPD, greater than 40 years of age, have a FEV1/FVC < 60%, have no other active major comorbidity, be in a stable state, have a carer involved in their management, and be able to speak and read English. Australia	Mortality, hospitalisation, length of stay, presentations to ED, quality of life	In Cochrane review: Home care by outreach nursing for COPD The outcomes of the interventions were assessed at the end of the 12 month intervention
Sridhar 2008 [124]	Intervention: Nurse-led intervention • Initial home visit by a specialist respiratory nurse – participants	People (n=122) with chronic obstructive pulmonary disease (COPD) Age (mean range):	Presentations to GP	Participants in the intervention group received a hospital based-pulmonary rehabilitation

Study	Intervention and comparison	Population	Outcomes	Comments
	given a personalised COPD action plan (including advice on lifestyle, usual medication, antibiotics and steroids. • Had monthly telephone calls from the respiratory nurses and a home visit every 3 months • During each interview and visit, the nurses undertook a structured approach to history taking and during home visits measured pulse and respiratory rate, oxygen saturation and end-tidal carbon monoxide. • Advice was reinforced regarding treatments, smoking cessation if relevant, the need to continue their exercise therapy and discussed and reinforced the self-management education which has been given and offered encouragement for successful self-treatment. Comparator: Control group (usual care) • Usual care from their primary care physician, or secondary care and/or the respiratory nursing service as appropriate. • Use of healthcare monitored by monthly telephone self-report verified by confirmation of the general practice and hospital records.	69.68-69.9 years Percentage male: 49.2% Ethnicity: not stated UK		programme for 4 weeks prior to nurse-led intervention. Rehabilitation programme included general education about their disease at its treatment and underwent an individualised physical training programme.
Stewart 1999[126,127]	Intervention: Usual care plus 'Multidisciplinary, home-based intervention' • After discharge:	Patients (n=200) admitted to tertiary care hospital under cardiologist and	Mortality, admissions, length of stay	In Cochrane review: Clinical service organisation for

Study	Intervention and comparison	Population	Outcomes	Comments
	Comprehensive assessment at home by a cardiac nurse 7-14 days after discharge. • After home visit nurse sent report to primary care physician and cardiologist. Cardiac nurse arranged a flexible diuretic regimen for patient's weight and symptoms if required. • Phone call by cardiac nurse to patient contact at 3 and 6 months. Home visits repeated if a patient had 2 or more unplanned readmissions within 6 months of index admission • Home visit included assessment of clinical status, physical activity, adherence to medication, understanding of disease, psychosocial support and use of community resources. Followed by (as appropriate): 'remedial counselling' to patients and their families, strategies to improve adherence, simple exercise regimen, incremental monitoring by family/carers, urgent referral to 10 care physician. Comparator: Usual care • All study patients could be referred to cardiac rehab nurse, dietician, social worker, pharmacist and community nurse as appropriate. • All patients had	who had at least 1 previous admission for acute heart failure Actual age of study subjects: control group mean 76.1 years (SD9.3), intervention group 75.2 years (SD 7.1) years Male sex: 62% Ethnicity: not given Australia		heart failure Duration of intervention: mainly within 2 weeks of discharge but some phone contact throughout study Outcomes reported at 6 months follow-up

Study	Intervention and comparison	Population	Outcomes	Comments
	appointment with their primary care physician and/or cardiology outpatient service within 2 weeks of discharge. • Regular outpatient review by the cardiologist was undertaken throughout the follow up period			
Stewart 1998[128]	Intervention: Nurse and pharmacist intervention • Post discharge visits by the study nurse and pharmacist delivering remedial counselling, advice and information on medications, incremental monitoring by caregivers, referral to community pharmacist for more regular review thereafter. Study nurse evaluated clinical deterioration or adverse effects of medications and referred to GP where necessary. Comparator: Control group • Usual post discharge care provided by GP or cardiologist (as outpatients). 27% of patients also received regular home support	Elderly patients (n=97) with chronic heart failure hospitalised for infarction or acute ischemia being discharged home but at high risk of unplanned readmission in Australia	Readmissions, mortality	Not in Cochrane.
Stromberg 2003[130]	Intervention: nurse led HF clinic • 1st visit 2-3 weeks after discharge, nurses evaluated status, assessed treatment and provided education about HF and social support. Individualised education based on guidelines: information on HF, treatment, dietary advice, individually adjusted energy intake	Patients (n=106) hospitalised for HF Age: Control: 78 (SD 6), Intervention: 77 (SD 7) Percentage male: Control: 32/54 (59%), Intervention: 33/52 (63%) Ethnicity: Not stated	Mortality, admissions, length of stay	In Cochrane review: Clinical service organisation for heart failure Outcomes reported at 12 months Duration of intervention: not clear

Study	Intervention and comparison	Population	Outcomes	Comments
	advice, lifestyle advice (including exercise), and promoted self-management • nurses contactable by phone during office hours, Monday-Friday, and nurses called patients to provide psychosocial support and evaluate drug changes required • extra appointments to attend HF clinic scheduled for patients unstable with symptoms of worsening heart failure • patients referred back to primary health care once they were stable and well Informed Comparator: Control group • Conventional follow-up in primary health care. • Some patients got a scheduled visit after discharge, but most were encouraged to phone primary health care if they had problems due to heart failure	Sweden		
Thompson 2005[134]	Intervention: "clinic plus home-based intervention" • Appointment with specialist nurse prior to discharge, to receive info on HF and medications • Office-hours contact number for nurse specialist • Home visit with 10 days of hospital discharge, for education on symptom • Management and lifestyle, and clinical examination • Monthly nurse-led outpatient heart failure clinic for 6 months post-discharge, including	Patients (n=106) with acute admission to hospital with a diagnosis of CHF. Age: Control: 72 (SD 12), Intervention: 73 (SD 14) Percentage male: Control: 73, Intervention: 72 Ethnicity: not stated United Kingdom	Mortality, admission	In Cochrane review: Clinical service organisation for heart failure Duration of intervention: 6 months 6 month follow-up

Study	Intervention and comparison	Population	Outcomes	Comments
	education, clinical examination and indices monitoring, and starting of new therapeutic drugs where appropriate Comparator: Control group • Standard care (that is, explanation of condition, prescribed medications by the ward nurse and referral to appropriate post-discharge support as required). • Patients given an outpatient department appointment 6-8 weeks post discharge			
Tsuchihashi-Makaya 2013 [135]	Intervention: Home-based intervention • Home visit by nurses to provide symptom monitoring, education, and counselling and telephone follow-up by nurses in addition to routine follow-up by cardiologists • A home visit was made within 14 days after discharge from hospital. • Home visits were made once every 2 weeks until 2 months after discharge. After the 2 months, nurses then conducted monthly telephone follow-up until 6 months after discharge. • Received comprehensive discharge education by cardiologist, nurse, dietician and pharmacist using a booklet that provided information on pathophysiology, medical treatment, diet, physical activity, lifestyle modification,	People (n=168) hospitalised for heart failure (HF) Age (range): 75.8-76.9 years Male percentage: 35% Ethnicity: not stated Japan	Mortality, admissions (defined as hospitalisation for heart failure)	

Study	Intervention and comparison	Population	Outcomes	Comments
	self-measurement of body weight, self-monitoring of worsening HF, and emergency contact methods. Comparator: Usual care • Received comprehensive discharge education by cardiologist, nurse, dietician and pharmacist using a booklet that provided information on pathophysiology, medical treatment, diet, physical activity, lifestyle modification, self-measurement of body weight, self-monitoring of worsening HF, and emergency contact methods.			
Wong 2008[144]	Intervention: Community nurses home visits • Routine discharge care plus post-discharge home visit intervention. Protocol-driven. • Community nurses made assessments, home visits based on Omaha system (health teaching, counselling, treatment and procedures, case management and surveillance. • Case would be closed if health problems had resolved. Comparator: Routine care: instructions about medications, basic health advice, arrangements for outpatient follow-up	Elderly patients (n=354) admitted for a range of medical conditions (respiratory, cardiac, renal and general symptoms) who had more than 1 admission in the 28 days preceding this admission. In Hong Kong	Satisfaction with care, readmission (within 28 days)	Not in Cochrane.
Yeung	Intervention: Holistic and	Adults (n=108)	Readmission	Not in Cochrane.

Study	Intervention and comparison	Population	Outcomes	Comments
2012[147]	translational care programme implemented by experienced community health nurses • Prerequisite and training of holistic case managers (community health nurses), • Application of the Omaha system as nursing documentation • Family meeting guided by motivational interviewing, • Home visit, telephone follow-up and health and community care referral system Comparator: Usual post-discharge stroke care supplied by the hospital	recovering from a stroke in Hong Kong	(within 28 days), presentations to ED	Thesis that includes this RCT Perhaps better in rehabilitation part of the review?
Young 2003A[148]	Intervention: Cardiac disease management programme delivered by home health nurses • Home visits by a cardiac-trained nurse, a standardised nurses' checklist, referral criteria for specialty care, communication with family physician, patient education Comparator: Usual care • Referral to non-invasive cardiac laboratory for diagnostic testing, followed up by cardiologist, received information on cardiac teaching class and rehabilitation. If referred to home care received the currently practiced home care (not specified what that entails)	Patients (n=146) admitted to hospital with elevated cardiac enzymes in Canada.	Mortality, admissions (after 28 days), presentations to ED, presentations to GP	Not in Cochrane.

1

Table 3: Clinical evidence profile: Matron/nurse-led care versus usual care

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Control	Risk difference with All interventions (95% CI)
All-cause mortality	7380 (34 studies) 6 weeks - 2 years	⊕⊕⊕⊖ MODERATE[a] due to risk of bias	RR 0.88 (0.8 to 0.98)	179 per 1000	21 fewer per 1000 (from 4 fewer to 36 fewer)
Length of stay (days)	2295 (12 studies) 6 weeks - 1 year	⊕⊕⊕⊖ MODERATE[c] due to inconsistency	-	-	The mean length of stay (days) in the intervention groups was 0.51 lower (1.33 to 0.31 lower)
Quality of life (high score is good) - Barthel Index	251 (1 study) 1 year	⊕⊖⊖⊖ VERY LOW[a,b] due to risk of bias, imprecision	-	-	The mean quality of life (high score is good) - Barthel Index in the intervention groups was 3.99 higher (0.97 to 7.01 higher)
Quality of life (high score is good) - QoL Myocardial Infarction Questionnaire	267 (1 study) 100 days	⊕⊕⊕⊖ MODERATE[a] due to risk of bias	-	-	The mean quality of life (high score is good) – QoL myocardial infarction questionnaire in the intervention groups was 8.40 higher (0.08 lower to 16.88 higher)
Quality of life (high score is good) - SF-36 Physical component	279 (2 studies) 12-24 weeks	⊕⊖⊖⊖ VERY LOW [a,b,c] due to risk of bias, inconsistency, imprecision	-	-	The mean quality of life (high score is good) - sf-36 physical component in the intervention groups was 10.78 higher (3 lower to 24.56 higher)
Quality of life (high score is good) - SF-36 Mental component	284 (2 studies) 12-24	⊕⊖⊖⊖ VERY LOW [a,b,c] due to risk of bias, inconsistency,	-	-	The mean quality of life (high score is good) - sf-36 mental component in the intervention groups was 7.15 higher

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Control	Risk difference with All interventions (95% CI)
	weeks	imprecision			(0.88 lower to 15.17 higher)
Quality of life (high score is bad)	1534 (9 studies) 60 days - 2 years	⨁⨁⊖⊖ LOW [a,c] due to risk of bias, inconsistency	-	-	The mean quality of life (high score is bad) in the intervention groups was 3.09 lower (5.43 to 0.75 lower)
Admission (>30 days)	1273 (6 studies) 3-12 months	⨁⨁⨁⨁ HIGH	-	-	The mean admission (>30 days; continuous data) in the intervention groups was 0.04 higher (0.06 lower to 0.14 higher)
Admission (>30 days)	6022 (28 studies) 6 weeks - 2 years	⨁⨁⊖⊖ LOW [a,c] due to risk of bias, inconsistency	RR 0.90 (0.82 to 1)	465 per 1000	47 fewer per 1000 (from 84 fewer to 0 more)
Re-admission	440 (2 studies) 30 days - 1 year	⨁⨁⊖⊖ LOW[a,b] due to risk of bias, imprecision	RR 0.89 (0.67 to 1.17)	318 per 1000	35 fewer per 1000 (from 105 fewer to 54 more)
GP visits (continuous data)	297 (2 studies) 6-12 months	⨁⨁⨁⊖ MODERATE[a] due to risk of bias	-	-	The mean GP visits (continuous data) in the intervention groups was 0 higher (1.05 lower to 1.04 higher)
GP visits (dichotomous data)	1015 (5 studies) 3-24 months	⨁⊖⊖⊖ VERY LOW [a,b,c] due to risk of bias, inconsistency, imprecision	RR 0.88 (0.75 to 1.03)	764 per 1000	92 fewer per 1000 (from 191 fewer to 23 more)
Emergency department admissions (continuous data)	873 (4 studies) 6-12	⨁⨁⨁⊖ MODERATE[c] due to	-	-	The mean emergency department admissions (continuous data) in the intervention groups was 0.05 lower

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Control	Risk difference with All interventions (95% CI)
	months	inconsistency			(0.38 lower to 0.28 higher)
Emergency department admissions (dichotomous data)	1055 (8 studies) 4 weeks - 12 months	⨁⊖⊖⊖ VERY LOW [a,b,c] due to risk of bias, inconsistency, imprecision	RR 0.74 (0.51 to 1.06)	321 per 1000	83 fewer per 1000 (from 157 fewer to 19 more)
Patient satisfaction (high score is good)	459 (2 studies) 60 days - 10 months	⨁⨁⨁⨁ HIGH	-	-	The mean patient satisfaction (high score is good) in the intervention groups was 1.26 higher (0.24 to 2.27 higher)
Patient satisfaction (high score is bad)	332 (1 study) 30 days	⨁⨁⊖⊖ LOW [a,b,] due to risk of bias, imprecision	-	-	The mean patient satisfaction (high score is bad) in the intervention groups was 0.2 lower (0.33 to 0.07 lower)
Patient dissatisfaction; dichotomous data	470 (1 study) 6 months	⨁⊖⊖⊖ VERY LOW [a,b] due to risk of bias, imprecision	RR 1.07 (0.89 to 1.28)	482 per 1000	34 more per 1000 (from 53 fewer to 135 more)

(a) Downgraded by 1 increment if the majority of the evidence was at high risk of bias, and downgraded by 2 increments if the majority of the evidence was at very high risk of bias.

(b) Downgraded by 1 increment if the confidence interval crossed 1 MID or by 2 increments if the confidence interval crossed both MIDs.

(c) Heterogeneity, I^2=50%, p=0.04, unexplained by subgroup analysis.

Narrative findings

Length of stay

Allen 2009[6] reported the average hospital days for the intervention group (post discharge care management) and control group (stroke unit care only). The study reported a decrease in average hospital days for the control group (post discharge care management: 1.6 days; stroke unit care only: 1.4 days). This study also reported a value for difference in intervention minus control and difference in SD units, 0.2 (0.04).

Latour 2006[86] reported duration (length of stay) of all emergency readmissions as 11 days (range: 4-59) for the control group and 10.5 (range: 2-68) days for the case management intervention group, but this difference was not statistically significant (95% CI: -13 to 6.0 days).

Martin 1994[93] reported a median of 0 inpatient days (range 0-14) and 25 inpatient days (range 0-75) for the home treatment group and the control group respectively at 12 weeks follow-up.

In Jaarsma 2008[70] the median duration of admissions to the hospital because of heart failure in both intervention arms (basic support group: 8.0 days, IQR 4.0-14.0; intensive support group: 9.5 days, IQR 5.0-17.0) was shorter compared with the control group (12.0 days, IQR 5.0-19.5; basic support group versus control, p=0.01; and intensive support versus control, p=0.29).

Quality of life (Minnesota Living with Heart Failure scale)

Allen 2009[6] reported the average quality of life score for the intervention group (post discharge care management) and control group (stroke unit care only). Stroke Specific-QOL was used as the quality of life measure, the measure has a sum of 49 items with a score range from 49-245; a higher score is better. The study reported a better average quality of life score for the control group (post discharge care management: 196; stroke unit care only: 199). This study also reported a value for difference in intervention minus control and difference in SD units, -2 (-0.07).

Using the Minnesota scale, Doughty 2002[44] found that the scores at baseline showed markedly impaired quality of life; mean baseline functioning score was 25.6 (SD 12.4) and emotional score 10.0 (SD 7.8). There was a significant improvement in physical functioning from baseline to 12 months between the intervention and control groups (-11.1 and -5.8 respectively, p=0.015).There was no significant change in the emotional score between the 2 groups from baseline to 12 months (-3.3 and -3.3 respectively, p=0.97).

Kasper 2002[77] found that overall quality of life improved for both groups, but patients in the nurse-led intervention group improved more (change from baseline: mean= -28.3, median -28.0) than the usual care group (change from baseline: mean= -15.7, median -15.0; p=0.001).

9.4 Economic evidence

Published literature

Three economic evaluations were identified with the relevant comparison and have been included in this review[55,112,136]. These are summarised in the economic evidence profile below (Table 4) and detailed in the economic evidence tables in Appendix E.

Four economic evaluations relating to this review question were identified but were excluded due to a combination of limited applicability and methodological limitations, and the availability of more applicable evidence[50,51,57,85]. These are listed in Appendix H, with reasons for exclusion given.

The economic article selection protocol and flow chart for the whole guideline can found in the guideline's Appendix 41A and Appendix 41B.

Table 4: Economic evidence profile: Community nurse-led care

Study	Applicability	Limitations	Other comments	Incremental cost	Incremental effects	Cost effectiveness	Uncertainty
Graves 2009[55]	Partially applicable[(a)]	Minor limitations[(b)]	**Study design:** decision analytic model **Intervention:** Extended access to nurse and physio care as per the 'Older Hospitalised Patients' Discharge Planning and In-home Follow-up Protocol (OHP-DP)' versus usual care **Treatment duration:** 24 weeks	-£147	0.118 QALYs	Extended access to nurse and physio care dominated usual care	100% probability the intervention generated health benefits and a 64% chance it saved costs. 95% chance it is cost effective at a £20,000 per QALY threshold.
Ploeg 2010 [112]	Partially applicable[(a)]	Minor limitations[(d)]	**Study design:** RCT **Intervention:** Experienced home care nurse-led intervention versus usual care **Treatment duration:** 12 months	-£165	0.0475 QALYs	Experienced home care nurse-led intervention dominates.	No sensitivity analysis reported.
Turner 2008 [136]	Directly applicable	Minor limitations[(e)]	**Study design:** Cluster RCT **Intervention:** Specialist nurse-led disease management programme versus usual care[(f)] **Treatment duration:** 12 months	£447	0.03 QALYs	£14,900 per QALY gained	Probability specialist nurse-led disease management cost-effective (£20K/30K threshold): 80%/90%

Abbreviations: QALY: quality-adjusted life years; RCT: randomised controlled trial.

(a) Australian healthcare system may not accurately portray the UK NHS.UK tariff not used to measure EQ-5D.

(b) RCT-based analysis so from 1 study by definition therefore not reflecting all evidence in area. However, these limitations are unlikely to change the conclusions about cost-effectiveness.

(c) Some uncertainty regarding the applicability of resource use and unit costs from Canada to the current NHS context. QALYs obtained through HUI3 rather than preferred EQ-5D. Usual care undefined.

(d) RCT-based analysis so from 1 study by definition therefore not reflecting all evidence in area. Local unit costs used may not be representative of national costs. No sensitivity analysis reported. However, these limitations are unlikely to change the conclusions about cost-effectiveness.

(e) RCT-based analysis so from 1 study by definition therefore not reflecting all evidence in area. 12 month time horizon may not be sufficient.

(f) Standard general practitioner and practice nurse care.

9.5 Evidence statements

Clinical

- Seventy-one studies evaluated the role of nurse-led care for improving outcomes compared to usual care provided in the community in adults and young people at risk of an AME, or with a suspected or confirmed AME. The evidence suggested that community matron or nurse-led care may provide a benefit in reduced mortality (34 studies, moderate quality), improved quality of life (5 different scores, very low to moderate quality), reduced length of stay (12 studies, moderate quality), improved patient and/or carer satisfaction in studies in which a high score indicated a higher satisfaction (2 studies, high quality) and reduced re-admission (2 studies, low quality). However, the evidence suggested there was no effect for patient and/or carer satisfaction in studies when a low score indicated higher satisfaction (1 study, low quality) and when employing a dissatisfaction score (1 study, very low quality). Dichotomous data suggested a benefit for admission (28 studies, low quality), GP visits (5 studies, very low quality) and ED admissions (8 studies, very low quality) whereas continuous data suggested no difference for admission (6 studies, high quality), GP visits (2 studies, moderate quality) and ED admissions (4 studies, moderate quality).

Economic

- Two cost-utility analyses found that for adults at risk of an AME, community nurse-led care was dominant (less costly and more effective) compared to usual care in the community. Both studies were assessed as partially applicable with minor limitations.
- One cost-utility analysis found that for adults at risk of an AME, community nurse-led care was cost-effective (ICER: £14,900 per QALY gained) compared to usual care in the community. This study was assessed as directly applicable with minor limitations.

9.6 Recommendations and link to evidence

Recommendations	3. Provide nurse-led support in the community for people at increased risk of hospital admission or readmission. The nursing team should work with the team providing specialist care.
Relative values of different outcomes	The Guideline committee considered mortality, avoidable adverse events, patient and/or carer satisfaction and quality of life as critical outcomes for decision making for this review. Other outcomes identified as important for decision making included number of readmissions, number of admissions to hospital after 28 days of first admission, length of hospital stay, number of presentations to the Emergency Department and number of presentations to the GP.
Trade-off between benefits and harms	In assessing the available literature, the committee noted the diversity of models of nurse-led community care, encompassing community nurses, district nurses, specialist nurses, community matrons and hospital-at-home. While 'nurse-led care' focuses particularly on interventions delivered before hospital admission or after discharge, it also includes the in-hospital phase (for example, specialist nursing of heart failure patients) and integration of care along the patient pathway. Seventy one studies were included in the review (including studies from 2 Cochrane reviews) comparing nurse-led interventions to usual care. All evaluated the role of nurse-led care for improving outcomes compared to usual care provided in the community for adults at risk of an AME, or with a suspected or confirmed AME. The evidence suggested that nurse-led care may provide a benefit in reduced mortality, improved quality of life, reduced length of stay, improved patient satisfaction (in studies in which a high score indicated higher satisfaction), and reduced re-admission. However, the evidence suggested there was no effect for patient satisfaction in studies when a low score indicated higher satisfaction, or those employing a dissatisfaction score. Dichotomous data suggested a benefit for admission, GP visits and ED admissions whereas continuous data suggested no difference for these outcomes. The committee noted that the evidence included in the review was taken mainly from settings requiring specialist nurse input, for example, CHF and COPD patients, and a benefit was demonstrated in these populations. It was highlighted that all patients with a chronic disease are at risk of AMEs. However, no RCTs were found for other chronic diseases such as nurse-led management of diabetes. As there was sufficient RCT evidence for heart failure, COPD and stroke, no observational studies were included in this review. The committee discussed the generalisability of the evidence and concluded that nurse-led care may be considered beneficial in other clinical conditions. The committee therefore chose to develop a recommendation supporting nurse led care in the community for patients who are at risk of hospital admission or readmission.
Trade-off between net effects and costs	As noted above, the cost of providing nurse-led support in the community will be at least partially offset by hospital cost savings through the prevention of admissions and readmissions. Three economic evaluations were included. They showed that community nurse-led care is cost effective compared to usual care (either dominant (2 studies) or has an incremental cost effectiveness ratio (ICER) less than £20,000 per QALY gained). It is not clear whether these interventions will be cost saving or cost increasing overall and this might depend on the patient cohort as well as the service structure. The committee noted that community nurse specialists, matrons and case managers have condition-specific clinical knowledge as well as knowledge of the individual patient that enables them to provide personalised and effective care. This translates to better outcomes, as is evident from the clinical review. The committee noted that in the evidence reviewed the nurses usually had access to an appropriate specialist physician for advice and support to maximise benefit. Nurse-led care is likely to be

Recommendations	3. Provide nurse-led support in the community for people at increased risk of hospital admission or readmission. The nursing team should work with the team providing specialist care.
	provided by a team of nurses with a mixture of levels of experience and grade, as required.
Quality of evidence	The evidence ranged in quality from high to very low due to risk of bias, inconsistency and imprecision. One economic evaluation was assessed as directly applicable with only minor limitations. The other two also had only minor limitations but they were rated as partially applicable because they were set in Australia and Canada respectively and one of them did not use the EQ-5D.
Other considerations	Nurse-led care can refer to a range of different individuals and tasks, including case managers, community nurses, district nurses, community matrons, hospital-at-home nurses, rapid response nurses and condition-specific community specialist nurses. The roles of these various practitioners are described in the chapter to which this LETR relates. The feature which unites them is their ability to provide patients in the community with interventions which are primarily supportive and educational, focused on increasing independence and enhancing self-management, maintaining optimal function, and thereby reducing the need for hospital admission. Therapeutic interventions include pressure ulcer care, administration of insulin, intravenous antimicrobials, monitoring chronic disease progression and palliative care. Nurses with complementary skill sets work together to support patients with multimorbidity, district and other community nurses provide a direct link to GPs, while condition-specific specialist nurses will provide direct links to hospital specialists and services. While the evidence review highlighted the benefits mostly in established well-defined chronic conditions such as COPD or heart failure, there was some evidence in undifferentiated groups such as frailty, and the committee was of the view that when nurse-led services are well organised, the benefits are likely to apply to people with multimorbidity at risk of, or recovering from, a medical emergency. While all papers included in this review were classified as 'nurse-led' care, it was noted that a number of papers that utilised nurse-led care provided it within the context of a multidisciplinary team.[21,31,38,44] It is very unlikely for the care to be delivered in isolation by a community nurse; rather care would be delivered as part of multidisciplinary team. The committee noted that there was a substantial overlap between the different models of community care many of which focus on educational and supportive interventions rather than the delivery of clinical care. The committee noted that nurse led care is likely to be most effective when integrated with other services and supported when necessary by specialist nurses (or physicians) with competencies in managing specific conditions. Support should include timely access to physicians and to ancillary services in hospital and in the community such as rehabilitation and occupational therapy, as well as social services. The nurses involved must acquire competencies relevant to this area of practice and have an appropriate professional support structure. Nurse led care should be delivered as part of a strategic and integrated approach to health services along the continuum of social, primary and secondary care.[36,61,107,113] Primary care services should include nurse-led care in their development plans to ensure optimal access and use. Regional geography such as rural or urban populations will have an impact on how care is delivered and structured, and may also affect recruitment and retention of appropriately trained staff. The use of electronic communication and remote clinical

Recommendations	3. Provide nurse-led support in the community for people at increased risk of hospital admission or readmission. The nursing team should work with the team providing specialist care.
	decision support are likely to be of increasing importance. Ongoing education and development is crucial for retention and recruitment of staff and as higher acuity conditions are likely to be discharged earlier from hospital. As community nurses will usually be working as single individuals, it is important that the ethos of a team is fostered and that each member has the opportunity for group case discussion, observed practice, training and professional development, and reflective learning within a supportive system which enhances retention and recruitment, as reflected in NHS England's Framework for Commissioning Community Nursing.[105] This framework which was published in October 2015 provides a good foundation to inform stakeholders who are responsible for delivery of care in the community.

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Extended access to community nursing

9.7 Review question: Is extended access to community nursing/district nursing more clinically and cost effective than standard access?

For full details see review protocol in Appendix A.

Table 5: PICO characteristics of review question

Is extended access to community nursing/district nursing more clinically and cost effective than standard access?	
Population	Adults and young people (16 years and over) with a suspected or confirmed AME.
Intervention	Extended access (evenings, weekends) to community nursing (that is, staff trained as nurses working in the community such as, district nurses, community tissue viability nurses).
Comparison	Standard access (as defined by the study for example, weekday 9am-5pm) to community nursing.
Outcomes	Mortality (CRITICAL) Avoidable adverse events (for example, sepsis) (CRITICAL) Quality of life (CRITICAL) Patient and carer satisfaction/carer burden (CRITICAL) Presentation to ED (CRITICAL) Length of stay (IMPORTANT) Unplanned hospital admission (ambulatory care conditions) (IMPORTANT) Delayed discharge (IMPORTANT) Staff satisfaction (IMPORTANT)
Exclusion	Not looking at chronic disease-specific nurse practitioner (undifferentiated nurses; Specialist nurses for example, COPD specialty nurses), community matron.
Search criteria	The databases to be searched are: Date limits for search: post 2005 – same search as intermediate care (relevance). Language: English only, UK only – same as intermediate care (other healthcare systems very different).
The review strategy	Systematic reviews (SRs) of RCTs, RCTs, observational studies only to be included if no relevant SRs or RCTs are identified.

9.8 Clinical evidence

No relevant clinical studies were identified.

9.9 Economic evidence

Published literature

No relevant economic evaluations were identified.

The economic article selection protocol and flow chart for the whole guideline can found in the guideline's Appendix 41A and Appendix 41B.

9.10 Evidence statements

Clinical

No clinical evidence was identified.

Economic

No relevant economic evaluations were identified.

9.11 Recommendations and link to evidence

Recommendation	-
Research recommendations	**RR6. What is the clinical and cost effectiveness of providing extended access to community nursing, for example during evenings and weekends?**
Relative values of different outcomes	The committee considered mortality, avoidable adverse events (for example, sepsis), quality of life, patient and/or carer satisfaction and presentation to ED as the critical outcomes for decision making. Other important outcomes included length of stay, unplanned hospital admission (ambulatory care conditions), delayed discharge and staff satisfaction.
Trade-off between benefits and harms	No evidence evaluating the effectiveness of extended access to community nursing/district nursing compared with standard access was found. The committee noted that the provision of extended access to community nursing/district nursing may prevent presentation to the ED in certain populations (for example, palliative care), who are likely to have urgent care needs which can be appropriately managed by a community/district nurse. The district nursing educational and career framework published by NHSE in 2015[105] outlines the expectation that community nurses will enable early detection of deterioration and prompt escalation to avoid hospital admission. The community nurse is well placed to recognise a change in condition for patients with long tern conditions at risk of AME. It was also considered that the provision of extended access to community nursing/district nursing would be unlikely to prevent presentation to the ED among other populations (for example, those with chest pain). However, there was no research evidence to support or contradict either of these considerations. Therefore, the committee chose not to develop a recommendation given the lack of evidence available. The committee considered the complex range of care delivered by community nurses to patients with a long term condition who are at risk of an AME, and also support provided for post-operative patients (e.g. wound care) and that enhanced access could prevent ED presentation and admissions 7 days week. As there was no evidence to support a positive or negative recommendation, the committee decided to make a research recommendation.
Trade-off between net effects and costs	No economic evaluations were included. In the absence of evidence, the unit costs of a community nurse and ED visit were presented (Chapter 41 Appendix I). The committee noted that a community nurse visit is substantially cheaper than an ED visit. Extended access to a community nurse might be cost effective or even cost saving if it were to prevent ED presentations without a negative effect on clinical outcomes. However, this needs to be researched.
Quality of evidence	No RCT, observational or economic evidence was identified for this question.
Other considerations	The committee noted the complex roles of community nurses in the NHS. The RCN has identified the three care domains for the effective delivery of district nursing services such as: • acute care at home • complex care at home • end of life care at home These services dovetail with the priorities of UK health policy imperatives which are: • Closer to home care

	• Self-management • Long-term conditions management • Appropriate use of telehealth The community nurse is pivotal to providing such services as often they provide the face to face access to the patient. The NHSE Framework for commissioning community nursing (2015)[105] recognised that community nurses not only have a core knowledge of assessing and treating people in their homes but have also developed additional skills to meet the changing needs of their patient population including recognising and supporting patients who have exacerbations of serious illness . Standard access to community nursing/district nursing is variable across the country but mostly covers Monday to Friday usually 08:00 – 18:30h. During evenings and weekends staffing is reduced, so the service aims to accommodate the more urgent needs such as facilitating hospital discharge, dressings that require changing daily, support with insulin administration or palliative care. In the event of an urgent care requirement during the evenings and weekends, there is usually an out of hours' telephone number to call. The committee considered how providing extended access to community nursing/district nursing would change current practice. Standard access to community nursing/district nursing is variable across the UK; therefore, the impact of implementation would differ according to region. In the context of 7 day services in the hospital the likelihood is that access to community/district nursing at weekends becomes more important as there would be an expectation that more patients may be discharged at weekends. It was also highlighted that despite the distinction between patients with urgent care needs that could be appropriately managed by a community/district nurse and those with acute medical emergencies who are likely to require other forms of care, for the average patient, every urgent health problem is an acute medical emergency. Those with less social support are more likely to need extended working as they may not have access to other support networks Enhanced access would mean that patients could be seen by their regular district nurse in response to their clinical needs as opposed to the skeleton service which operates at weekends for only the highest priority patients. This may lead to: • Earlier detection and initiation of treatment of infection/sepsis from surgical wound infection, cellulitis from leg ulcer, UTI from catheter, infection from ulcers and complications from PEG feeding • better access to palliative care symptom control • the potential for earlier discharge following AME, as in reality patients can wait until Monday for the district nurse to take over care. Further research would be helpful to assess the impact of this and to measure the cost effectiveness. Research would need to take into account baseline differences, case mix and measures of social deprivation or affluence, and the extent of integration between secondary, primary and social care.

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Appendices

Appendix A: Review protocols

Table 6: Review protocol: Matron/nurse-led care versus usual care from EVIBASE

Review question	Alternatives to acute care in hospital
Guideline condition and its definition	Acute Medical Emergencies. Definition: A medical emergency can arise in anyone, for example, in people: without a previously diagnosed medical condition, with an acute exacerbation of underlying chronic illness, after surgery, after trauma.
Objectives	To determine if wider provision of community-based intermediate care prevents people from staying in hospitals longer than necessary while not impacting on patient and carer outcomes.
Review population	Adults and young people (16 years and over) with a suspected or confirmed AME or patients at risk of AME.
	Adults (17 years and above). Young people (aged 16-17 years).
	Line of therapy not an inclusion criterion.
Interventions and comparators: generic/class; specific/drug (All interventions will be compared with each other, unless otherwise stated)	Community matron or Nurse-led care. Hospital-based care/services. Usual Care.
Outcomes	- Quality of life at during study period (Continuous) CRITICAL - Length of hospital stay at during study period (Continuous) - Mortality at during study period (Dichotomous) CRITICAL - Avoidable adverse events at during study period (Dichotomous) CRITICAL - Patient and/or carer satisfaction at during study period (Dichotomous) CRITICAL - Number of presentations to Emergency Department at during study period (Dichotomous) - Number of admissions to hospital at After 28 days of first admission (Dichotomous) - Number of GP presentations at during study period (Dichotomous) - Readmission up to 30 days (Dichotomous)
Study design	Systematic reviews (SRs) of RCTs, RCTs, observational studies only to be included if no relevant SRs or RCTs are identified.
Unit of randomisation	Patient.
Crossover study	Permitted.
Minimum duration of study	Not defined.
Population stratification	Early discharge. Admission avoidance.
Reasons for stratification	Each of them targets a separate outcome: early discharge would be primarily aimed at reducing length of stay, while admission avoidance would be primarily aimed at reducing hospital admission. Also, the population would be different as the admission avoidance group could be managed at home for the whole

Review question	Alternatives to acute care in hospital
	episode of care (they could be cared for at home from the start) while the early discharge group needs to be "stabilised" at hospital first then discharged.
Subgroup analyses if there is heterogeneity	- Frail elderly (frail elderly; not frail elderly); Different from younger population.
Search criteria	Databases: Medline, Embase, the Cochrane Library, CINAHL. Date limits for search: No date limits. Language: English only.

Table 7: Review protocol: Is enhanced community nursing/district nursing more clinically and cost effective than standard access?

Is extended access to community nursing/district nursing more clinically and cost effective than standard access?	
Objective	To determine if enhanced access (evenings and weekends) to community nursing improves outcomes.
Rationale	What services would be provided? We have covered community nursing so what extra would they be doing? Extending the access – their presence. This is service availability, access to. Can't be discharged until seen by nurse for example, on Saturday.
Topic code	T3-1C.
Population	Adults and young people (16 years and over) with a suspected or confirmed AME.
Intervention	Extended access (evenings, weekends) to community nursing (that is, staff trained as nurses working in the community such as, district nurses or community tissue viability nurses).
Comparison	Standard access (as defined by the study for example, weekday 9am-5pm) to community nursing.
Outcomes	Patient outcomes; Mortality (CRITICAL) Avoidable adverse events (for example, sepsis) (CRITICAL) Quality of life (CRITICAL) Patient and carer satisfaction/carer burden (CRITICAL) Presentation to ED (CRITICAL) Length of stay (IMPORTANT) Unplanned hospital admission (ambulatory care conditions) (IMPORTANT) Delayed discharge (IMPORTANT) Staff satisfaction (IMPORTANT)
Exclusion	Not looking at chronic disease-specific nurse practitioner (undifferentiated nurses; specialist nurses for example, COPD specialty nurses), community matron. Non-UK studies – same as intermediate care (other healthcare systems very different).
Search criteria	The databases to be searched are: Medline, Embase, the Cochrane Library, CINAHL. Date limits for search: post. Language: English only.
The review strategy	Systematic reviews (SRs) of RCTs, RCTs, observational studies only to be included if no relevant SRs or RCTs are identified.
Analysis	Data synthesis of RCT data. Meta-analysis where appropriate will be conducted.

Is extended access to community nursing/district nursing more clinically and cost effective than standard access?	
	Studies in the following subgroup populations will be included: Frail elderly. Rural versus urban. In addition, if studies have pre-specified in their protocols that results for any of these subgroup populations will be analysed separately, then they will be included. The methodological quality of each study will be assessed using the Evibase checklist and GRADE.

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Appendix B: Clinical study selection

Figure 1: Flow chart of clinical article selection for the review of community matron/nurse-led interventions

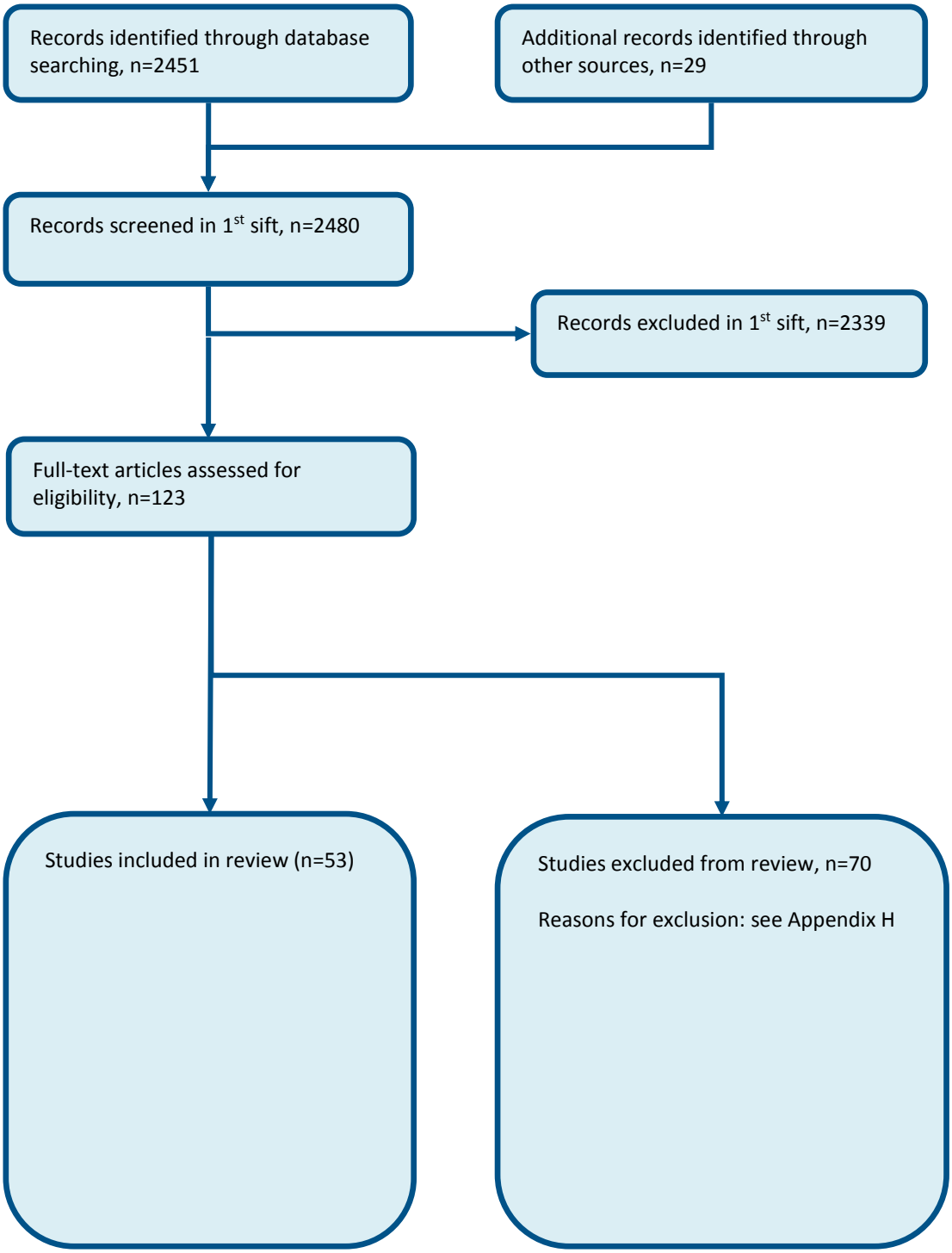
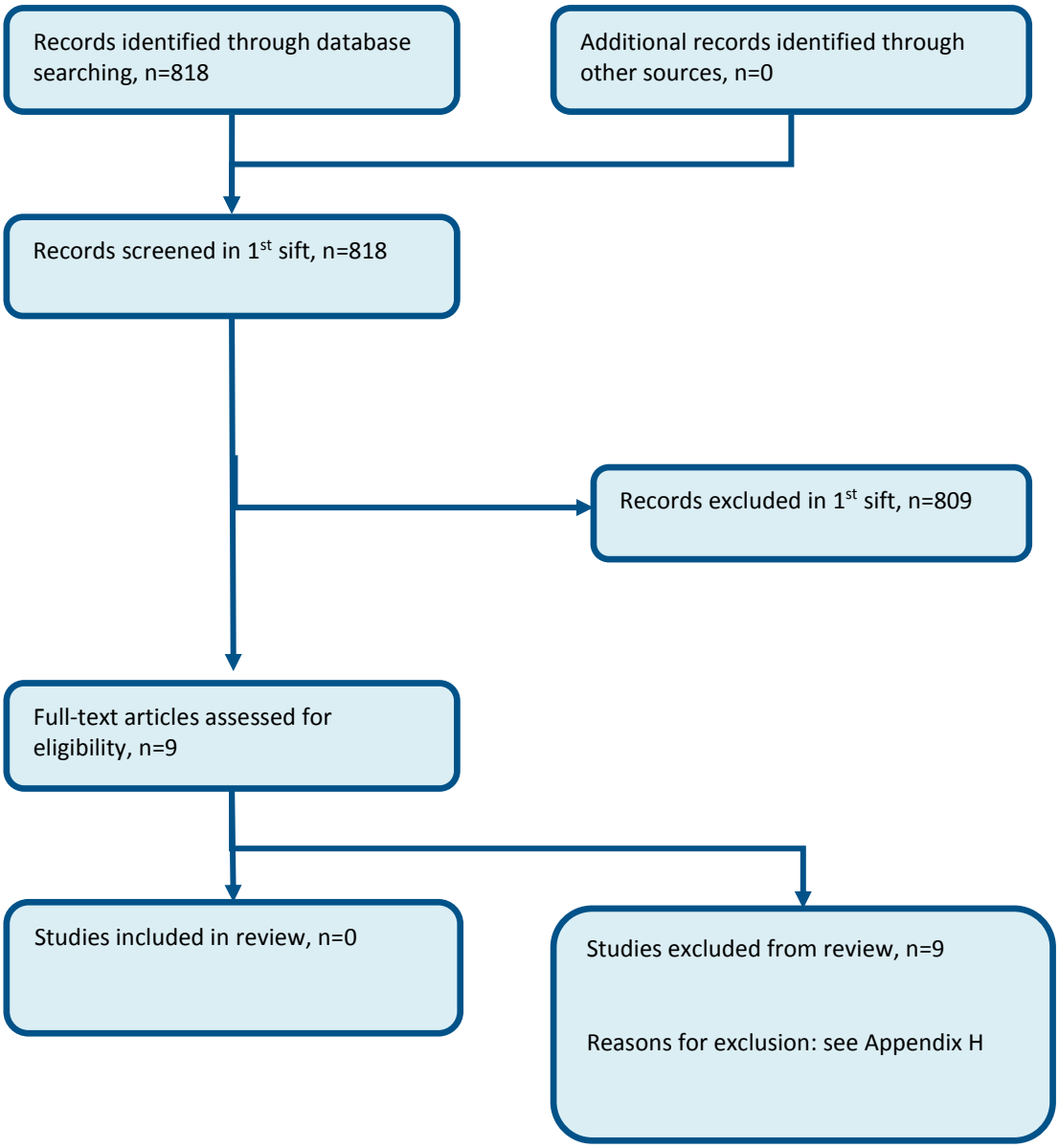


Figure 2: Flow chart of clinical article selection for the review of: Is enhanced community nursing/district nursing more clinically and cost effective than standard access?



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Appendix C: Forest plots

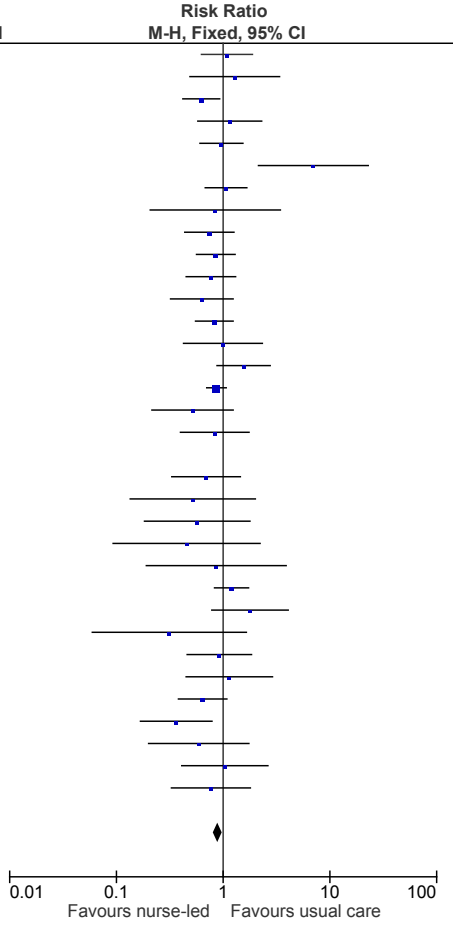
C.1 Matron or nurse led care

C.1.1 Matron or nurse-led interventions versus usual care

Figure 3: Matron/nurse-led care versus usual care: mortality

Study or Subgroup	Nurse-led Events	Nurse-led Total	Usual care Events	Usual care Total	Weight	Risk Ratio M-H, Fixed, 95% CI
Aldamiz-Echevarria 2007	22	137	21	142	3.2%	1.09 [0.63, 1.88]
Allen 2009	9	190	7	190	1.1%	1.29 [0.49, 3.38]
Atienza 2004	30	164	51	174	7.6%	0.62 [0.42, 0.93]
Bergner 1988	15	100	13	100	2.0%	1.15 [0.58, 2.30]
Blue 2001	25	84	25	81	3.9%	0.96 [0.61, 1.53]
Capomolla 2002	21	122	3	122	0.5%	7.00 [2.14, 22.86]
Cline 1998	24	80	31	110	4.0%	1.06 [0.68, 1.67]
Coultas 2005	5	144	3	73	0.6%	0.84 [0.21, 3.44]
De Busk 2004	21	228	29	234	4.4%	0.74 [0.44, 1.26]
Del Sindaco 2007	27	86	32	87	4.9%	0.85 [0.56, 1.29]
Doughty 2002	19	100	24	97	3.7%	0.77 [0.45, 1.31]
Ducharme 2005	12	115	19	115	2.9%	0.63 [0.32, 1.24]
Hansen 1992	32	163	43	181	6.2%	0.83 [0.55, 1.24]
Hermiz 2002	9	84	10	93	1.5%	1.00 [0.43, 2.33]
Jaarsma 1999	22	84	16	95	2.3%	1.56 [0.88, 2.76]
Jaarsma 2008	173	684	99	339	20.3%	0.87 [0.70, 1.07]
Kasper 2002	7	102	13	98	2.0%	0.52 [0.22, 1.24]
Kimmelstiel 2004 (1)	11	97	14	103	2.1%	0.83 [0.40, 1.75]
Kotowycz 2010	0	27	0	27		Not estimable
Krumholz 2002	9	44	13	44	2.0%	0.69 [0.33, 1.45]
Kwok 2004	3	77	6	80	0.9%	0.52 [0.13, 2.00]
Kwok 2008	4	49	8	56	1.1%	0.57 [0.18, 1.78]
Leventhal 2011	2	22	4	20	0.6%	0.45 [0.09, 2.22]
Martin 1994	3	29	3	25	0.5%	0.86 [0.19, 3.90]
Mejhert 2004	40	103	34	105	5.2%	1.20 [0.83, 1.73]
Nucifora 2006	14	99	8	101	1.2%	1.79 [0.78, 4.07]
Rea 2004	2	83	4	52	0.8%	0.31 [0.06, 1.65]
Sinclair 2005	14	163	15	161	2.3%	0.92 [0.46, 1.85]
Smith 1999	8	48	7	48	1.1%	1.14 [0.45, 2.90]
Stewart 1999a	18	100	28	100	4.3%	0.64 [0.38, 1.08]
Stromberg 2003	7	52	20	54	3.0%	0.36 [0.17, 0.79]
Thompson 2005	5	58	7	48	1.2%	0.59 [0.20, 1.74]
Tsuchihashi-Makaya 2013	8	79	8	82	1.2%	1.04 [0.41, 2.63]
Young 2003A	8	71	11	75	1.6%	0.77 [0.33, 1.80]
Total (95% CI)		**3868**		**3512**	**100.0%**	**0.88 [0.80, 0.98]**
Total events	629		629			

Heterogeneity: Chi² = 41.02, df = 32 (P = 0.13); I² = 22%
Test for overall effect: Z = 2.44 (P = 0.01)



Footnotes
(1) 1 year data

Figure 4: Matron/nurse-led care versus usual care: length of stay (days)

Study or Subgroup	Nurse-led Mean	Nurse-led SD	Nurse-led Total	Usual care Mean	Usual care SD	Usual care Total	Weight	Mean Difference IV, Random, 95% CI
Blue 2001	10.3	19	84	16.7	24.1	81	1.4%	-6.40 [-13.04, 0.24]
Carroll 2007	9.45	4.5	121	10.1	5.9	126	12.7%	-0.65 [-1.96, 0.66]
Courtney 2009	4.6	2.7	64	4.7	3.3	64	14.3%	-0.10 [-1.14, 0.94]
Duffy 2010	28.6	10.11	15	26.76	9.58	17	1.3%	1.84 [-5.01, 8.69]
Gagnon 1999	13	20.7	212	11.9	13.1	215	4.7%	1.10 [-2.19, 4.39]
Harrison 2002	7.59	8.36	92	7.67	7.99	100	7.5%	-0.08 [-2.40, 2.24]
Hermiz 2002	7.1	6.2	84	6.2	5.3	93	10.3%	0.90 [-0.81, 2.61]
Kimmelstiel 2004	10.6	6.89	97	11.5	7.1	103	9.2%	-0.90 [-2.84, 1.04]
Kotowycz 2010	2.51	0.854371	27	2.57	0.854371	27	17.7%	-0.06 [-0.52, 0.40]
Kwok 2004	20.3	25.3	70	19.2	25.6	79	1.0%	1.10 [-7.09, 9.29]
Nucifora 2006	15	15	99	20	24	101	2.0%	-5.00 [-10.54, 0.54]
Sinclair 2005	2.9	1.2	163	4.6	2.2	161	17.9%	-1.70 [-2.09, -1.31]
Total (95% CI)			**1128**			**1167**	**100.0%**	**-0.51 [-1.33, 0.31]**

Heterogeneity: Tau² = 0.94; Chi² = 43.62, df = 11 (P < 0.00001); I² = 75%
Test for overall effect: Z = 1.22 (P = 0.22)

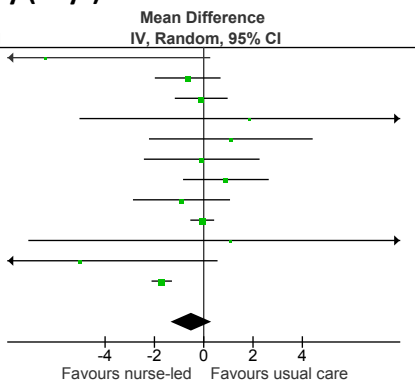


Figure 5: Matron/nurse led care versus usual care: quality of life (high score is good)

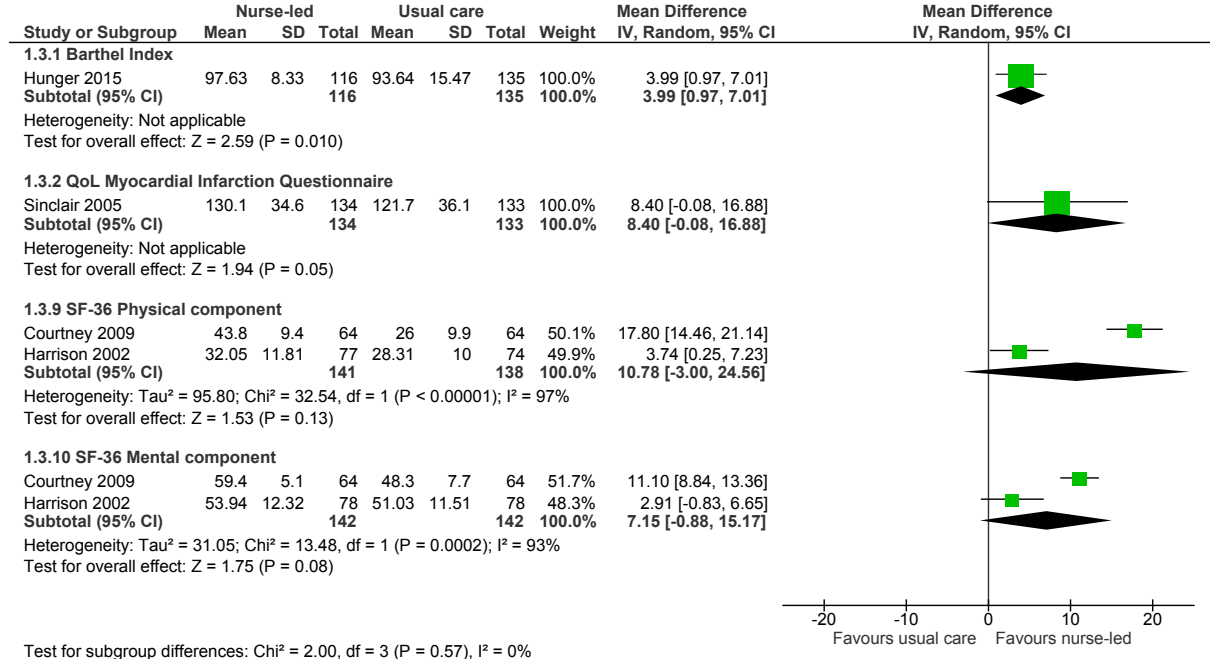


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Figure 6: Matron/nurse led care versus usual care: quality of life (high score is bad)

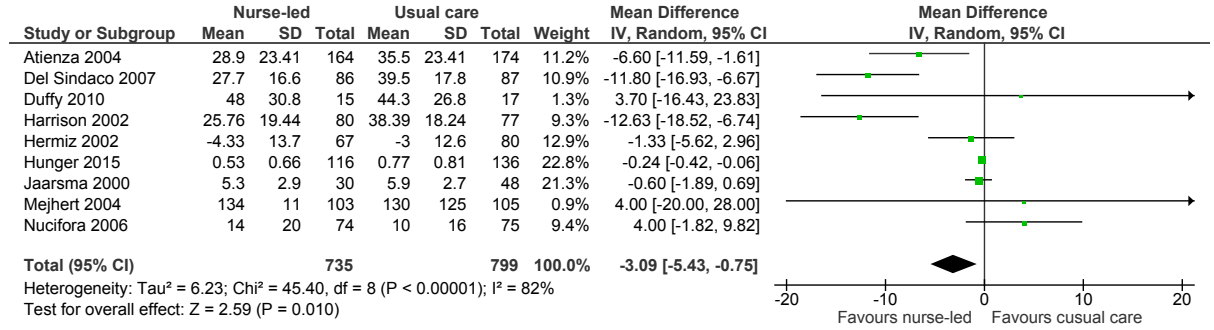

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Figure 7: Matron/nurse led care versus usual care: Admissions > 30 days (continuous data)

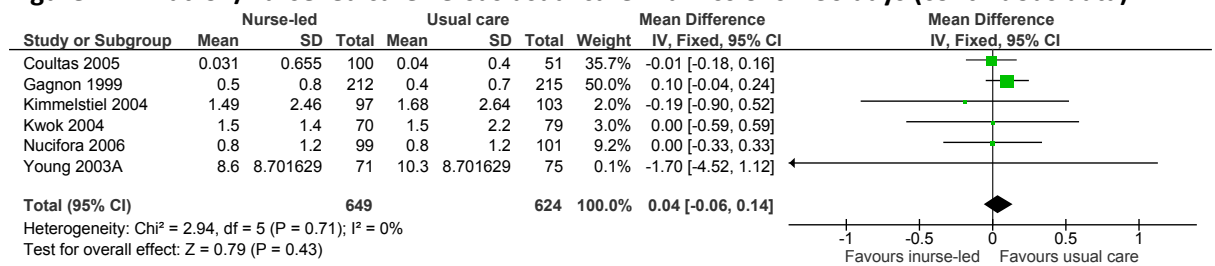

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Figure 8: Matron/nurse led care versus usual care: Admissions > 30 days (dichotomous data)

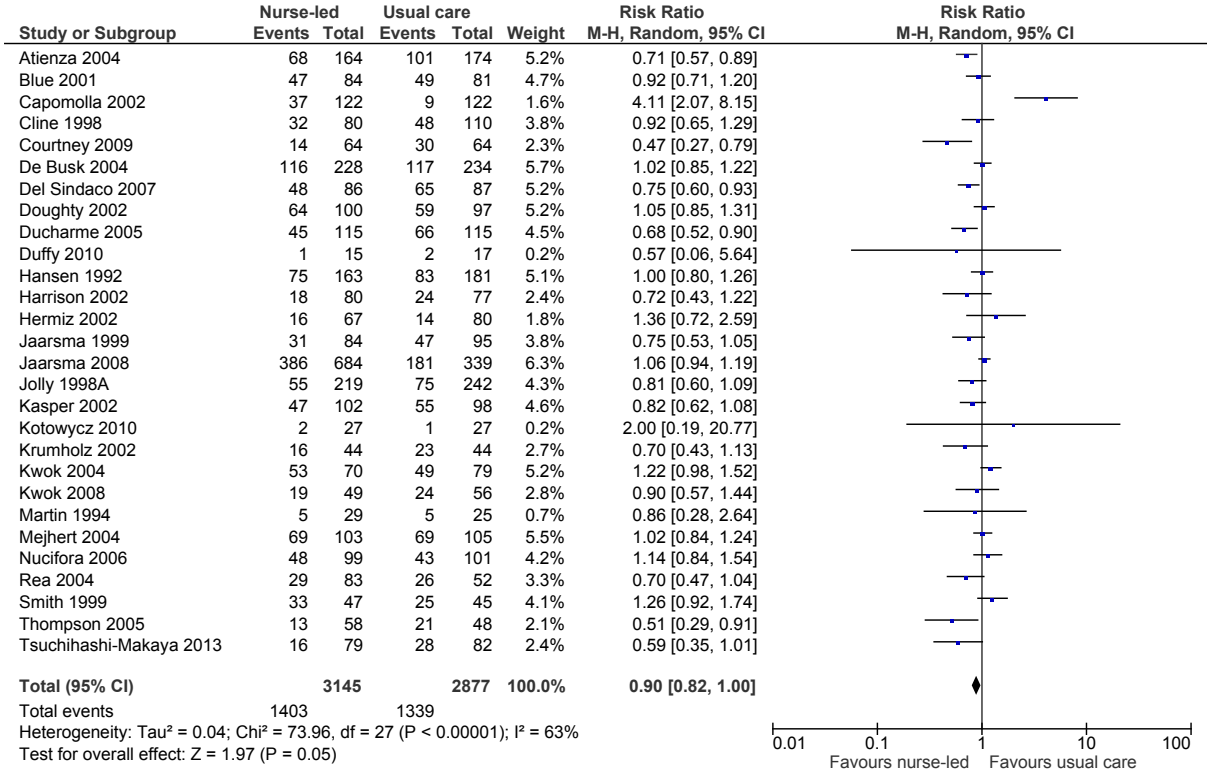

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Figure 9: Matron/nurse led care versus usual care: Re-admissions - 7 – 30 days (continuous data)

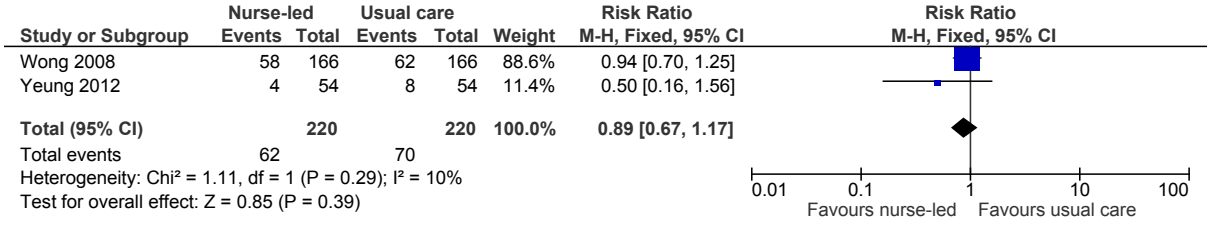

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Figure 10: Matron/nurse led care versus usual care: GP visits (continuous data)

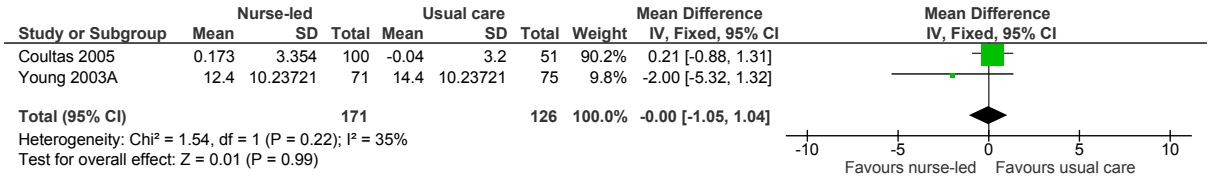

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Figure 11: Matron/nurse led care versus usual care: GP visits (dichotomous data)

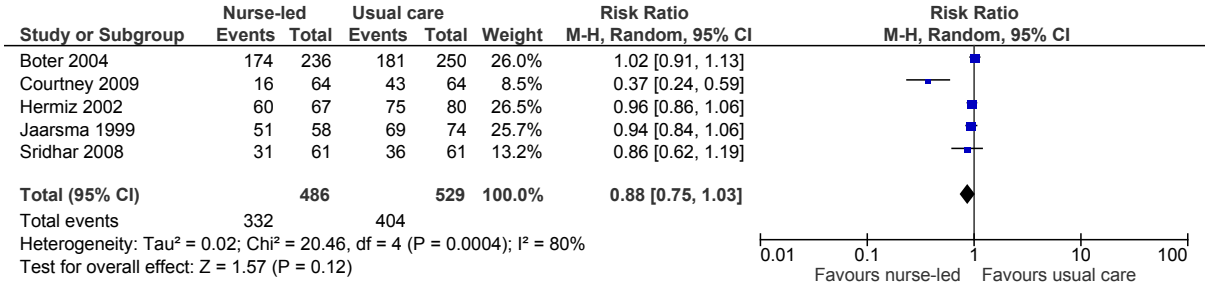

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Figure 12: Matron/nurse led care versus usual care: Emergency department admissions (continuous data)

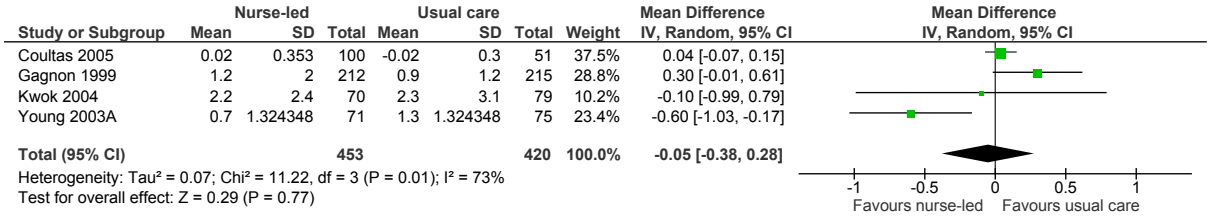

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Figure 13: Matron/nurse led care versus usual care: Emergency department admissions (dichotomous data)

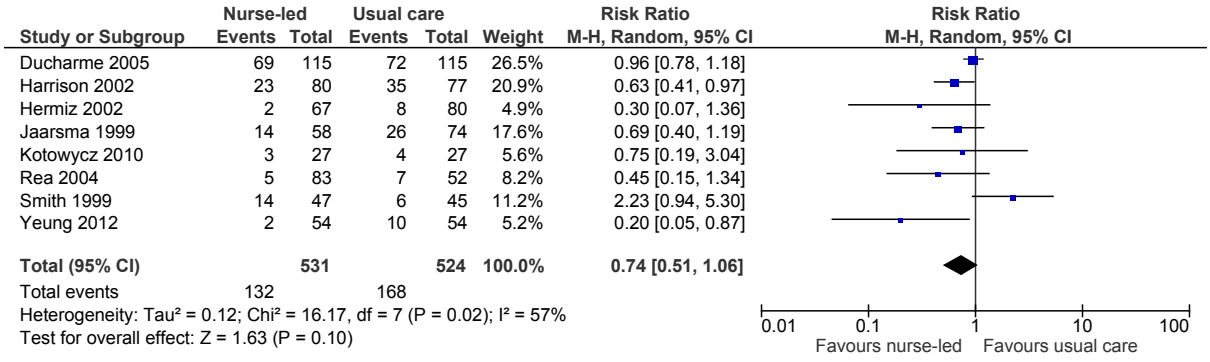

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Figure 14: Matron/nurse led care versus usual care: patient satisfaction (high score is good)

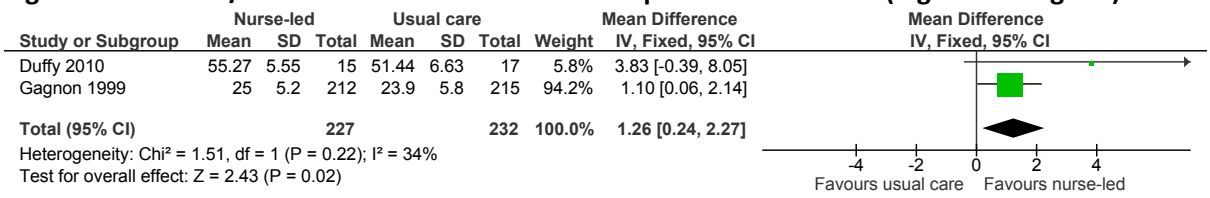

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Figure 15: Matron/nurse led care versus usual care: patient satisfaction (low score is good)

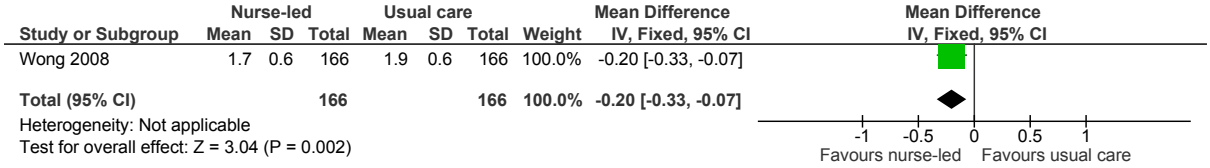

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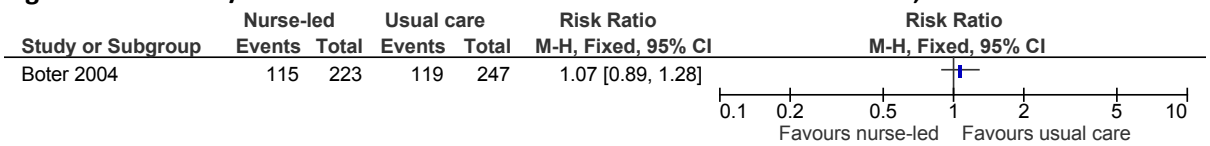
Figure 16: Matron/nurse led care versus usual care: Patient dissatisfaction; dichotomous



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3 C.2 Extended access to community nursing

4 No relevant clinical evidence was retrieved.

Appendix D: Clinical evidence tables

D.1 Matron or nurse-led care

Cochrane reviews

Study	Takeda 2012[133]
Study type	Systematic review – Clinical service organisation for heart failure
Number of studies (number of participants)	25 RCTs (n=5,942 participants)
Countries and setting	Conducted in Spain, Italy, Sweden, the Netherlands, the United Kingdom, China (Hong Kong), Canada, USA, New Zealand and Australia
Duration of study	Databases were searched through to January 2009 (update to search done in 2005)
Stratum	Overall
Subgroup analysis within study	-
Inclusion criteria	This review focused on adults aged 18 and over who had at least 1 admission to secondary care with a diagnosis of heart failure. In the original review the authors included randomised controlled trials (RCTs) reporting any follow up period, for this update they only included randomised controlled trials with a minimum of 6 months follow-up.
Exclusion criteria	Studies dealing principally with patients with cardiac disorders other than heart failure, or with heart failure arising from congenital heart disease and/or valvular heart disease, were excluded.
Recruitment/selection of patients	This review focused on adults aged 18 and over who had at least 1 admission to secondary care with a diagnosis of heart failure. In the original review the authors included randomised controlled trials (RCTs) reporting any follow up period, for this update they only included randomised controlled trials with a minimum of 6 months follow-up. Studies dealing principally with patients with cardiac disorders other than heart failure, or with heart failure arising from congenital heart disease and/or valvular heart disease, were excluded. The interventions were classified into 3 models: 1) case-management interventions, where patients were intensively monitored by telephone calls and home visits, usually by a specialist nurse; 2) clinic interventions involving follow up in a specialist CHF clinic; 3) multidisciplinary interventions (a holistic approach bridging the gap between hospital admission and discharge home delivered by a team).

Study	Takeda 2012[133]
Age, gender and ethnicity	For the majority of the included studies, the mean/median age of patients was between approximately 67 and 80 years old. The mean/median ages of patients in 12 of the studies were in the late 60s or early 70s, 8 of the studies had patients whose mean/median ages were in their mid 70s (Aldamiz-Echevarria 2007; Blue 2001; Cline 1998; Holland 2007; Krumholz 2002; Lopez 2006, Mejhert 2004, Naylor 2004), and 3 studies had patients whose mean or median age was 77 or more (Del Sindaco 2007, Kwok 2008; Stromberg 2003). Two studies had considerably younger patients, with a median of 63.5 (range 25-88) in the study by Kasper 2002 and a mean of 56 (SD = 10) in the Capomolla 2002 study.
Further population details	NR
Extra comments	-
Indirectness of population	No indirectness
Interventions	Clinical service interventions (defined as inpatient, outpatient or community based interventions or packages of care) directed specifically at patients with heart failure were included. This excluded the simple prescription or administration of a pharmaceutical agent(s) to patients with heart failure. Interventions could include or exclude patients' relatives or carers. These interventions included: • Case management, defined as "the active management of high-risk people with complex needs, with case managers (usually nurses) taking responsibility for caseloads working in an integrated care system" (DoH 2004) • Clinical interventions such as enhanced or novel service provision (for example the introduction of a specialist nurse led heart failure clinic) • Multidisciplinary interventions such as disease management interventions, defined as "a system of coordinated healthcare interventions and communications for populations with long-term conditions in which patient self-care is significant" (Royal College of Physicians 2004) The following types of interventions were not included in this review: • Interventions that were primarily educational in focus • Interventions that only consisted of exercise programmes • Interventions described as cardiac rehabilitation programmes. Cardiac rehabilitation was defined as a structured programme offered to individuals after a cardiac event to aid recovery and prevent further cardiac illness. Cardiac rehabilitation programmes typically achieve this through exercise, education, behaviour change, counselling and support and strategies that are aimed at targeting traditional risk factors for cardiovascular disease (Taylor 2010). • "Generic" interventions, not exclusively aimed at patients with heart failure, directed at reducing readmission or morbidity in populations of older people with a variety of long term conditions.
Funding	Not stated

Summary of included studies	Study	Intervention and comparison	Population	Outcomes	Comments
	Aldamiz-Echevarria 2007[4]	Intervention: • Home visits by physicians and nurses, for clinical examination, tests/analyses as required, and adjustment of medication as required (note this intervention was not HF specific, but was intended to reduce readmissions across a range of medical and surgical conditions). • Additional nursing staff home visits 2, 5 and 10 days after discharge for education for patients and relatives about HF (basic facts and management, that is, symptoms, life style, diet and therapy) • Patients received educational manual and a phone number for queries Comparator: usual care (referral to primary care physician)	Patient (n= 279) hospitalised for heart failure Mean (SD) age: 75.3 (11.1) versus 76.3 (9.4) Percentage male: 38.7 versus 40.1 Ethnicity: not stated Spain	Mortality, admissions, presentations to ED Risk of bias (assessed in Cochrane review) Risk of bias: Selection – Low, selective reporting - Low, other-low	In Cochrane review: Clinical service organisation for heart failure Duration of intervention: 15 days 6 and 12 months follow-up
	Atienza 2004[8]	Intervention: discharge and outpatient management programme • 1 to 1 single education session for patients and carers prior to discharge and session with primary care physician post discharge to reinforce education • teaching brochure to reinforce education, covering: diagnosis of HF, information about the disease (pathogenesis etc.), symptoms of HF, symptoms and signs of worsening HF, what to do if condition worsens, lifestyle advice, medication education for carers • cardiologist outpatient clinic every 3 months,	Patients (n=338) with congestive heart failure discharged from cardiology wards of 3 participating hospitals Median age (IQR) 69 (61-74) in intervention group, 67 (58-74) in usual care group Male sex (both groups) 203 (60%), (intervention group	Mortality, admissions Risk of bias (assessed in Cochrane review) Risk of bias: Selection – Low risk, selective reporting - Low, other-unclear risk	In Cochrane review: Clinical service organisation for heart failure Median duration of intervention: 509 days (IQR 365-649) 1 year follow-up

Summary of included studies	Study	Intervention and comparison	Population	Outcomes	Comments
		including medication review • patient given specific/tailored self-management plan • visit with primary care physician scheduled within 2 weeks of discharge • tele-monitoring component -a facilitated telephone monitor (SCT) providing a 24 hour mobile phone contact number which patients were encouraged to contact as necessary. Patients could also telephone the HF team for advice during office hours Comparator: discharge planning according to the routine protocol of the study hospitals	101/164, 62%), (control group 102/174, 59%) Ethnicity: not given Spain		
	Blue 2001[11,12]	Intervention Group: ”Specialist nurse intervention“ During index hospitalisation: Patients were seen by a HF nurse prior to discharge. After discharge: Home visit by HF nurse and within 48 hours of discharge. Subsequent visits by HF nurse at 1, 3, and 6 weeks and at 3, 6, 9 and 12 months. Scheduled phone calls at 2 weeks and at 1, 2, 4, 5, 7, 8, 10 and 11 months after discharge. Additional unscheduled home visits and telephone contacts as required Home visits covered: Patient education about HF and its Rx, self-monitoring and management. Patients were given a booklet about HF which included a list of their drugs, contact details for HF nurses, blood	Patients (n=165) admitted as an emergency to the acute medical admissions unit at 1 hospital with HF due to LV systolic dysfunction. Actual age of study subjects: usual care mean 75.6 years (SD 7.9), intervention 74.4 years (SD 8.6). Male sex: 58% Ethnicity: not given. United Kingdom (Scotland)	Unplanned admissions within 90 days of discharge, length of stay Risk of bias (assessed in Cochrane review) Risk of bias: Selection – Low , selective reporting - Low, other-unclear risk	In Cochrane review: Clinical service organisation for heart failure Duration of intervention: up to 12 months 12 month follow-up Also looked at: admission rates in the moderate risk subgroup compared to the high risk sub group

Summary of included studies	Study	Intervention and comparison	Population	Outcomes	Comments
		test results and clinic appointment times. The trained HF nurses used written drug protocols and aimed to optimise patient treatment (drugs, exercise and diet) and HF nurses also provided psychological support to the patient. HF nurses liaised with the cardiology team and other health care and social workers as required Comparison Group: usual care "Patients in the usual care group were managed as usual by the admitting physician and, subsequently, general practitioner. They were not seen by the specialist nurses after discharge."			
	Capomolla 2002[21]	Intervention Group: Comprehensive Heart Failure Outpatient Management Program delivered by the day hospital. During index hospitalisation: cardiac prognostic stratification and prescription of individual tailored therapy following guidelines and evidence After discharge: Attendance at day hospital staffed by a multidisciplinary team(cardiologist, nurse, physiotherapist, dietician, psychologist and social assistant). Patient access to the day hospital 'modulated according to demands of care process'. Care plan developed for each patient. Tailored interventions covering: cardiovascular risk stratification; tailored therapy; tailored physical training; counselling; checking clinical stability; correction of risk factors for haemodynamic instability; and health care	Patients (n=234) with CHF referred for admission to the Heart Failure Unit at 1 centre or the Heart Transplantation Programme. All had been hospitalised for HF. Actual age of study subjects: mean age 56 years (SD 10) Male sex: 84% Ethnicity: not given. Italy	Mortality, admissions Risk of bias (assessed in Cochrane review) Risk of bias: Selection – unclear risk , selective reporting - Low, other-unclear risk	In Cochrane review: Clinical service organisation for heart failure Duration of intervention: not clear. Follow-up at 12 months

Summary of included studies	Study	Intervention and comparison	Population	Outcomes	Comments
		education. Patients who deteriorate re-entered the day hospital through an open-access programme. Day hospital also offered: intravenous therapy; laboratory examinations; and therapeutic changes as required Comparison Group: usual care During admission: cardiac prognostic stratification and prescription of individual tailored therapy following guidelines and evidence After discharge: 'The patient returned to the community and was followed up by a primary care physician with the support of a cardiologist'			
	Cline 1998[29,30]	Intervention Group: "Management programme for heart failure" During index hospitalisation patients received an education programme from HF nurse consisting of 2 visits. Two weeks after discharge patients and their families were invited to a 1 hour group education session led by the HF nurse and were also offered a 7 day medication dispenser if deemed appropriate. Patients were followed up at a nurse directed o/p clinic and there was a single prescheduled visit by the nurse at 8 months after discharge. The HF nurse was available for phone contact during office hours. Patients were offered cardiology outpatient visits 1 and 4 months after discharge. The inpatient and	Patients (n=190) hospitalised primarily because of heart failure. Actual age of study subjects: mean 75.6 years (SD 5.3) Male sex: 53% Ethnicity: not given Sweden	Mortality (at 90 days), admissions, length of stay, quality of life (at 1 year) using The Quality of Life Risk of bias (assessed in Cochrane review) Risk of bias: Selection – low, selective reporting - unclear risk, other-unclear risk	In Cochrane review: Clinical service organisation for heart failure Duration of intervention: 12 months 1 year follow-up

Summary of included studies	Study	Intervention and comparison	Population	Outcomes	Comments
		outpatient education programme covered: HF pathophysiology, pharmacological and non-pharmacological treatment. Comparison Group: usual care These patients were ”followed up at the outpatient clinic in the department of cardiology by either cardiologists in private practice or by GP”			
	De Busk 2004[37]	Intervention: ”specialist nurse intervention“ • I hour educational session with a nurse in the patient’s medical centre • Patient received educational materials including methods for self-monitoring symptoms, body weight and medications; a dietary management workbook; food frequency questionnaires. They viewed a video on treatment process, received instructions on how to access emergency care if needed. • 45 min baseline telephone counselling session within 1 week of randomisation by experienced nurse care manager. Subsequent nurse contacts tailored to meet needs of the patient. Follow up phone calls by nurse to patient weekly for 6 weeks, biweekly for 8 weeks, monthly for 3 months, bimonthly for 6 months • Nurse care managers obtained permission from physicians to initiate and regulate pharmacologic therapy for HF according to study protocol. Nurses coordinated treatment plan with patients and physicians	Patients (n=462) hospitalised with a provisional diagnosis of heart failure in study hospitals as indicated by new onset or worsening heart failure. Mean age all = 72 year (SD 11) Ethnicity, n(%): White 195(86) versus 191(82); Black 13(5) versus 14(6); American Indian 9(4) versus 18(8); Hispanic 7(3) versus 7(3); Asian 4(2) versus 4(2)	Mortality, admissions, presentations to ED Risk of bias (assessed in Cochrane review) Risk of bias: Selection – Low, selective reporting - Low, other-low	In Cochrane review: Clinical service organisation for heart failure Duration of intervention: 12 months Outcomes reported at 1 year

Summary of included studies	Study	Intervention and comparison	Population	Outcomes	Comments
		Comparator: usual care (no details given)	USA		
	Del Sindaco 2007[38]	Intervention: disease management programme (DMP) combining hospital clinic-based and home based care • teams included a cardiologist experienced in geriatrics, specialised nurses and the patient's primary care physician • programme components: discharge planning, continuing education, therapy optimisation, improved communication with healthcare providers, early attention to signs and symptoms and flexible diuretic regimes. • patients given a written list of recommendations, a weight chart, a contact number available 6h/day, and an education booklet • follow-up via hospital clinic visits, periodical nurse's phone calls • patients attended heart failure clinics within 7 to 14 days of discharge and at 1, 3 and 6 months thereafter for optimisation of treatment and education • primary care physicians assessed adherence to treatment, evaluated adverse effect and co-morbidities, and monitored diet Control: usual care Optimised treatment and standard education. All treatments and services ordered by primary care physician and/or cardiologist. Baseline clinical	Elderly patients (n=184) discharged home after hospitalisation due to heart failure Age: Control: 77.5 (SD 5.7), Intervention: 77.4 (SD 5.9) Percentage male: Control: 52.8, Intervention: 51.2 Ethnicity: not stated Italy	Mortality, admissions, quality of life	In Cochrane review: Clinical service organisation for heart failure Duration of intervention: 24 months Follow-up at 24 months

Summary of included studies	Study	Intervention and comparison	Population	Outcomes	Comments
		evaluation and therapeutic plan documented			
	Doughty 2002[44,45]	Intervention: 'integrated heart failure management programme' After discharge: Outpatient review at heart failure clinic within 2/52 of discharge from hospital: clinical status reviewed, pharmacological treatment based on evidence based guidelines, one-to-one education with study nurse, education booklet provided. Patient diary for daily weights, Rx record & clinical notes provided. Detailed letter faxed to GP and follow up phone call to GP. Follow up plan aiming at 6 weekly visits alternating between GP and HF clinic. Group education sessions for patients run by cardiologist and study nurse: 2 sessions offered within 6 weeks of discharge and one at 6 months post d/c. Telephone access to study team for GPs or patients during office hours Group education sessions covered: education about disease; monitoring daily body weight and action plans for weight changes; medication; exercise; diet. Comparison: usual care	Patients (n=197) admitted to general medical wards with a primary diagnosis of heart failure. Actual age of study subjects: mean 73 years (SD 10.8, range 34 to 92 years). Male sex: 60% Ethnicity: 'NZ European' 79% New Zealand	Mortality, admissions, quality of life, length of stay Risk of bias (assessed in Cochrane review) Risk of bias: Selection – high, selective reporting - Low, other-low	In Cochrane review: Clinical service organisation for heart failure Duration of intervention: 12 months Outcomes at 12 months
	Ducharme 2005[47]	Intervention: multi-disciplinary heart failure clinic with phone follow-up from nurses • evaluation at clinic within 2 weeks of hospital discharge; rapid access to cardiologists, clinician nurses, dieticians and pharmacists, with access to social workers and other medical specialists as required • follow-up phone call from nurse within 72	Patients (n=230) seen at the emergency department of or admitted to the Montreal Heart Institute with a primary diagnosis of congestive heart	Mortality, admissions, presentations to ED, quality of life, length of stay Risk of bias (assessed in Cochrane review) Risk of bias: Selection	In Cochrane review: Clinical service organisation for heart failure Duration of intervention: 6 months

Summary of included studies	Study	Intervention and comparison	Population	Outcomes	Comments
		hours of hospital discharge and then monthly • After baseline evaluation, clinic cardiologists individualized treatment plan • One-on-one education of the patient and family with the study nurse initiated at first clinic visit (disease process, symptoms and signs of HF, fluid and sodium intake restrictions, body weight monitoring, medications and compliance, recommendations regarding exercise and diet. • patient diary (for example,. daily weight, medication record, clinical notes) • individualized dietary assessments; pharmacist evaluated medications • monthly visits with both a cardiologist and nurse at the clinic • Patients advised to call clinic nurse if symptoms worsened. Comparator: standard care	failure Mean (SD) age: 68 (10)/10 (10) % male: 83 (73)/82 (71) ethnicity: not stated Canada	– Low, selective reporting - Low, other-low	Outcomes at 6 months
	Jaarsma 2000[68,69]	Intervention: 'Supportive educational intervention' During index admission: Intensive education by study nurse using standard nursing care plan After discharge: Study nurse phoned patient within 1 week of discharge to assess potential problems and made appointment for home visit. At home visit education continued. Between discharge and home visit patient could contact study nurse if	Patients (n=179) admitted to the cardiology unit of 1 hospital with HF symptoms and diagnosis verified with Boston score. Actual age of study subjects: not given for original group, those	Quality of life, presentations to GP, admissions, mortality (at 9 months) Risk of bias (assessed in Cochrane review) Risk of bias: Selection – Low , selective reporting - Low, other-unclear risk	In Cochrane review: Clinical service organisation for heart failure Duration of intervention: up to 10 days after discharge from index admission, on average

Summary of included studies	Study	Intervention and comparison	Population	Outcomes	Comments
		they encountered problems. After home visit patient encouraged to contact their cardiologist, GP or emergency heart centre with any problems. Educational component covered: symptoms of worsening failure, sodium restriction, fluid balance and compliance and individuals' problems, and included education and support to patients' family. Comparison: usual care. "A nurse or physician, depending on his or her individual insight into the patients' questions, provided these patients with education about medication and lifestyle". Usual care patients did not receive structured education	who remained at 9 months were mean age 72 years (SD 9) at baseline. Male sex: of those who remained at 9 months, 60% Ethnicity: not given Netherlands		1 week* Outcomes reported at 9 months
	Jaarsma 2008[70]	Intervention: disease management program basic intervention: • During index hospital stay: patient education by HF nurse according to protocol and guidelines, behavioural strategies used to improve adherence • Within 2/52 of d/c telephone call to patient from HF nurse • During regular visits to cardiologist at the outpatient clinic (at 2, 6, 12 and 18 months after d/c) additional visits to HF nurse. Additional visits just to the HF nurse at the outpatient clinic at one, 3, 9, & 15 months after d/c. Telephone access to HF nurse Monday to Friday 9am -5 pm, patients (and families) encouraged to contact their nurse if any change in their condition or any questions.	Patients (n=1049) admitted to hospital for HF Age: intensive: 70 (SD 12), basic: 71 (SD 11), control: 72 (SD 11) Percentage male: intensive: 61, basic: 66, control: 60 Ethnicity: Not stated Netherlands	Mortality, admissions, quality of life Risk of bias (assessed in Cochrane review) Risk of bias: Selection – Low, selective reporting - Low, other-low	In Cochrane review: Clinical service organisation for heart failure Duration of intervention: 18 months

Summary of included studies	Study	Intervention and comparison	Population	Outcomes	Comments
		Intensive intervention: basic intervention plus: Home visit by HF nurse within 10 days of d/c to assess coping, CHF health status general health, and medical, health care and social support. Second home visit 11 months after discharge, Weekly telephone calls by the HF nurse in the first month after discharge then monthly calls. - Out of hours back up to provide 24 hour telephone coverage. - HF nurse to consults multidisciplinary team at least once during both index admission and once during follow up to optimise her advice for each patient. Control: standard management by cardiologist and, subsequently, GP			
	Kasper 2002[77]	Intervention Group: 'multidisciplinary program' During index hospitalisation: CHF cardiologist designed an individualised treatment plan which included medication, diet and exercise management After discharge: 'Telephone nurse co-coordinator' phoned patients within 72 hours of discharge and then weekly for 1st month, bi-weekly in 2nd month and then monthly. Monthly follow up with CHF nurses (usually in CHF clinic). 'Primary care physicians' (66% internal medicine physicians, 29%cardiologists) received regular updates from CHF nurses and were notified of abnormal lab results. All intervention patients	Patients (n=200) admitted to 1 of 2 hospitals with a primary diagnosis of CHF Actual age of study subjects at recruitment: median 63.5 years (range 25-88 years) Male sex: 61% Ethnicity: 'white' 64%	Admissions (at 6 months), mortality, quality of life, Risk of bias (assessed in Cochrane review) Risk of bias: Selection – Low, selective reporting - Low, other-low	In Cochrane review: Clinical service organisation for heart failure Duration of intervention: 6 months. Outcomes at 6 month reported

Summary of included studies	Study	Intervention and comparison	Population	Outcomes	Comments
		received: pill sorter, list correct medications, list of dietary and exercise recommendations, 24 hour telephone contact number and patient educational material. If required and financial resources limited patients also received: 3g sodium 'Meals on Wheels' diet, weigh scale, medications, transport to the clinic and a phone. CHF cardiologist saw patients at 6 months. Content of CHF nurse follow up: aimed to implement the treatment plan designed by CHF cardiologist which included initiation and titration of drugs, a low sodium diet and exercise recommendations Comparison group: Usual care. This was care by the patients' primary physicians (73% internal medicine physicians, 26% cardiologists). CHF cardiologist designed treatment plan for each patient "documented in patient's chart without further intervention"	USA		
	Kimmelstiel 2004[78]	Intervention: Specialized Primary and Networked Care in HF (SPAN-CHF) • Home visit from nurse-manager within 3 days of discharge, focusing on dietary and medical compliance, daily weights, self-monitoring, and early reporting of changes in weight or clinical status. • Teaching tool 'Patient and Family Handbook' given to patients during home visit, including sections on HF (definition), medications, low-salt diet, importance of daily weight, and clinical signs and symptoms that should	Patients (n=200) were enrolled during an index HF hospitalisation or within 2 weeks of discharge. Age: Control: 73.9 (SD 10.7), Intervention 70.3 (SD 12.2) Percentage male: Control: 58.3,	Admissions (during first 90 days), length of stay, admissions (at 1 year) Risk of bias (assessed in Cochrane review) Risk of bias: Selection – low, selective reporting - unclear risk, other-low	In Cochrane review: Clinical service organisation for heart failure Duration of intervention: 90 days, followed by passive surveillance (nurse-manager available for incoming calls but

Summary of included studies	Study	Intervention and comparison	Population	Outcomes	Comments
		prompt a call to the SPAN-CHF • nurse or primary care physician (plus contact phone numbers). • During home visit, nurse performed cardiovascular examination and symptom assessment. Weekly or biweekly phone calls from nurse-manager to patients focused on • identifying changes in clinical condition and education reinforcement. • Patients had 24-hr 7-day telephone access to nurse managers, and were instructed to report changes in clinical status and relevant weight change. Frequent communication between nurse-managers, primary care physicians and HF specialist. Comparator: usual care	Intervention: 57.7 Ethnicity: Not stated USA		didn't make scheduled calls) for clinically stable patients or continuation for patients with overt clinical instability (class A)
	Krumholz 2002[81]	Intervention: 'Education and Support' After discharge: Initial hour long face to face consultation with experienced cardiac nurse within 2 weeks of discharge using a teaching booklet. Following this weekly telephone contact for 4 weeks, bi-weekly for 8 weeks then monthly until 1 year. Initial consultation covered: patient knowledge of illness; the relation between medication and illness; health behaviours and illness; knowledge of early signs and symptoms of decompensation, where and when to obtain assistance. Follow up phone calls reinforced these domains. However the nurse could recommend that the patient consulted his/her physician when the patient's	Patients (n=88) hospitalised for HF; needed to have either admission diagnosis of heart failure or radiological signs of heart failure on admission chest x-ray. Actual age of study subjects: median age 74 years, controls mean age 71.6 (SD 10.3), intervention 75.9 (SD	Mortality, admissions, length of stay Risk of bias (assessed in Cochrane review) Risk of bias: Selection – Low, selective reporting - Low, other-low	In Cochrane review: Clinical service organisation for heart failure 12 month follow-up Duration of intervention: 1 year

Summary of included studies	Study	Intervention and comparison	Population	Outcomes	Comments
		condition deteriorated sharply or when the patient had problems, in order to help patients to understand when and how to seek and access care Comparison: usual care. All usual care treatments and services ordered by their physicians	8.7) Males: 57% Ethnicity: '74% Caucasians' USA		
	Kwok 2008[83]	Community nurse Versus Usual follow-up Intervention: usual follow-up plus home visits by community nurse proving counselling (for example, drug compliance, dietary advice), checking vital signs, medications. Nurse access also via pager. Nurse closely liaised with geriatrician or cardiologist. Control group: usual medical and social care and followed up in hospital outpatient clinics by geriatricians or cardiologists.	Adults (n = 105) >60 years, with chronic heart failure in Hong Kong. Recruited on the day or the day before hospital discharge	Mortality, admissions (after 28 days) Risk of bias (assessed in Cochrane review) Risk of bias: Selection – Low , selective reporting - Low, other-low	In Cochrane review: Clinical service organisation for heart failure
	Mejhert 2004[96]	Intervention: "nurse based outpatient management programme" • regular visits to the outpatient clinic and patient encouraged to keep contact with nurse (not clear how regular); nurse checking symptoms and signs of heart failure, blood pressure, heart rate, and weight at each visit • nurses can institute and change medication doses according to standard protocol	Patients (n=208) 60 years of age or older hospitalised with heart failure. Age: Control: 75.7 (SD 6.6), Intervention: 75.9 (SD 7.7) Percentage male:	Quality of life (6, 12 and 18 months), admissions (18 months), mortality (18 months) Risk of bias (assessed in Cochrane review) Risk of bias: Selection –unclear risk,	In Cochrane review: Clinical service organisation for heart failure Duration of intervention: at least 18 months, mean follow up was 1122

Summary of included studies	Study	Intervention and comparison	Population	Outcomes	Comments
		• patient instructed to check weight regularly and monitor early signs of deterioration. Patients with good compliance instructed to change dosing of diuretics on their own. • dietary advice recommends restricted sodium, fluid, and alcohol intake; information repeated in booklets and computerised educational programmes Control group: treated by GPs according to local health care plan for heart failure. All patients had clinical examinations and detailed control of medication at 6, 12, and 18 months at the Cardiovascular Research Lab	Control: 59, Intervention: 56 Ethnicity: Not stated Sweden	selective reporting - unclear risk, other-low	(405) days Outcomes reported at 6 an d12 months (QoL) and 18 months for all
	Nucifora 2006[106]	Intervention: "HF management programme" • pre discharge intensive education by an experienced cardiovascular research nurse using a teaching booklet, covering causes of HF, recognition of symptoms of worsening • HF, the role of sodium restriction and pharmacological therapy, the importance of fluid and weight control, physical activity and complete abstinence from alcohol and smoking. • phone call from nurse 3-5 days post discharge to assess any problems, promote self-management and check compliance, weight and lifestyle issues. Patients had telephone access from 8.00 to 9.00am, Monday to Friday, and out of hour's answering machine. • outpatient visits to doctor at 15 days, 1 and 6 months after discharge, to evaluate test	Elderly patients (n=200) admitted to internal medicine department with a diagnosis of HF during recruitment period Age: Control: 73 (SD 8), Intervention: 73 (SD 9) Percentage male: Control: 62, Intervention: 62 Ethnicity: Not stated Italy	Mortality, readmissions, length of stay, quality of life Risk of bias (assessed in Cochrane review) Risk of bias: Selection – unclear risk, selective reporting - Low, other-unclear risk	In Cochrane review: Clinical service organisation for heart failure Duration of intervention: 6 months Outcomes reported at 6 months

Summary of included studies	Study	Intervention and comparison	Population	Outcomes	Comments
		results, physical condition and medicine adherence and make any required changes to drug therapy Control: pre-existing routine of post-discharge care; that is, usual care by GP. Outpatient visit to doctor at 6 months post discharge			
	Stewart 1999[126,127]	Intervention Group: Usual care plus 'Multidisciplinary, home-based intervention' After discharge: Comprehensive assessment at home by a cardiac nurse 7-14 days after discharge. After home visit nurse sent report to primary care physician and cardiologist. Cardiac nurse arranged a flexible diuretic regimen for patient's weight and symptoms if required. Phone call by cardiac nurse to patient contact at 3 and 6 months. Home visits repeated if a patient had 2 or more unplanned readmissions within 6 months of index admission Home visit included assessment of clinical status, physical activity, adherence to medication, understanding of disease, psychosocial support and use of community resources. Followed by (as appropriate): 'remedial counselling' to patients and their families, strategies to improve adherence, simple exercise regimen, incremental monitoring by family/carers, urgent referral to 10 care physician. Comparison Group: usual care	Patients (n=200) admitted to tertiary care hospital under cardiologist and who had at least 1 previous admission for acute heart failure Actual age of study subjects: control group mean 76.1 years (SD9.3), intervention group 75.2 years (SD 7.1) years Male sex: 62% Ethnicity: not given Australia	Mortality, admissions, length of stay Risk of bias (assessed in Cochrane review) Risk of bias: Selection – Low, selective reporting - Low, other-unclear risk	In Cochrane review: Clinical service organisation for heart failure Duration of intervention: mainly within 2 weeks of discharge but some phone contact throughout study Outcomes reported at 6 months follow-up

Summary of included studies	Study	Intervention and comparison	Population	Outcomes	Comments
		All study patients could be referred to cardiac rehab nurse, dietician, social worker, pharmacist and community nurse as appropriate. All patients had appointment with their primary care physician and/or cardiology outpatient service within 2 weeks of discharge. Regular outpatient review by the cardiologist was undertaken throughout the follow up period			
	Stromberg 2003[130]	Intervention: nurse led HF clinic • 1st visit 2-3 weeks after discharge, nurses evaluated status, assessed treatment and provided education about HF and social support. Individualised education based on guidelines: information on HF, treatment, dietary advice, individually adjusted energy intake advice, lifestyle advice (including exercise), and promoted self-management • nurses contactable by phone during office hours, Monday-Friday, and nurses called patients to provide psychosocial support and evaluate drug changes required • extra appointments to attend HF clinic scheduled for patients unstable with symptoms of worsening heart failure • patients referred back to primary health care once they were stable and well Informed Control: conventional follow-up in primary health care. Some patients got a scheduled visit after discharge, but most were encouraged to phone primary health care if they had problems due to heart failure	Patients (n=106) hospitalised for HF Age: Control: 78 (SD 6), Intervention: 77 (SD 7) Percentage male: Control: 32/54 (59%), Intervention: 33/52 (63%) Ethnicity: Not stated Sweden	Mortality, admissions, length of stay Risk of bias (assessed in Cochrane review) Risk of bias: Selection – Low, selective reporting - Low, other-unclear risk	In Cochrane review: Clinical service organisation for heart failure Outcomes reported at 12 months Duration of intervention: not clear

Summary of included studies	Study	Intervention and comparison	Population	Outcomes	Comments
	Thompson 2005[134]	Intervention: "clinic plus home-based intervention" • appointment with specialist nurse prior to discharge, to receive info on HF and medications • office-hours contact number for nurse specialist • home visit with 10 days of hospital discharge, for education on symptom • management and lifestyle, and clinical examination • monthly nurse-led outpatient heart failure clinic for 6 months post-discharge, including education, clinical examination and indices monitoring, and starting of new therapeutic drugs where appropriate Control group: standard care (that is, explanation of condition, prescribed medications by the ward nurse and referral to appropriate post-discharge support as required). Patients given an outpatient department appointment 6-8 weeks post discharge	Patients (n=106) with acute admission to hospital with a diagnosis of CHF. Age: Control: 72 (SD 12), Intervention: 73 (SD 14) Percentage male: Control: 73, Intervention: 72 Ethnicity: not stated United Kingdom	Mortality, admission Risk of bias (assessed in Cochrane review) Risk of bias: Selection – Low, selective reporting - Low, other-low	In Cochrane review: Clinical service organisation for heart failure Duration of intervention: 6 months 6 month follow-up

Study	Wong 2012B[142]
Study type	Systematic review – Home care by outreach nursing for chronic obstructive pulmonary disease
Number of studies (number of participants)	9 RCTs (n=1498 participants)
Countries and setting	Conducted in the United Kingdom, Canada, USA and Australia
Duration of study	Databases were searched through to November 2011

Study	Wong 2012B[142]
Stratum	Overall
Subgroup analysis within study	-
Inclusion criteria	The authors included only randomised controlled trials in which the home visits were provided by a respiratory nurse or similar respiratory health worker to patients with COPD. Only participants with chronic obstructive pulmonary disease, as defined according to pulmonary function test findings, consistent with British Thoracic Society criteria (BTS 1997) were included. Included were interventions that comprised home visits by a respiratory nurse or similar respiratory health worker, to facilitate health care, provide education, provide social support, identify respiratory deteriorations promptly and reinforce correct technique with inhaler therapy. Eligible control groups were patients who received routine care, without respiratory nurse/health worker input. Studies with co-interventions, with subgroup analysis as necessary, were considered. Only trials with at least 3 months of follow-up were included as this was considered an appropriate minimum duration of follow-up to observe any clinically significant benefits of the intervention.
Exclusion criteria	Forty-eight papers were excluded for the following reasons: predominantly concerned with physical rehabilitation or exercise (n=19), not supervised by a nurse at home (n=15), not a RCT (n=11), data previously reported (n=2) and the intervention was of too short a duration (n=1).
Recruitment/selection of patients	The authors included only randomised controlled trials in which the home visits were provided by a respiratory nurse or similar respiratory health worker to patients with COPD. Only participants with chronic obstructive pulmonary disease, as defined according to pulmonary function test findings, consistent with British Thoracic Society criteria (BTS 1997) were included. Included were interventions that comprised home visits by a respiratory nurse or similar respiratory health worker, to facilitate health care, provide education, provide social support, identify respiratory deteriorations promptly and reinforce correct technique with inhaler therapy. Eligible control groups were patients who received routine care, without respiratory nurse/health worker input. Studies with co-interventions, with subgroup analysis as necessary, were considered. Only trials with at least 3 months of follow-up were included as this was considered an appropriate minimum duration of follow-up to observe any clinically significant benefits of the intervention.
Age, gender and ethnicity	Adult patients with COPD.
Further population details	No specific details provided for sample overall
Extra comments	
Indirectness of population	No indirectness
Interventions	Included were interventions that comprised home visits by a respiratory nurse or similar respiratory health worker, to facilitate health care, provide education, provide social support, identify respiratory deteriorations promptly and reinforce correct technique with inhaler therapy. Eligible control groups were patients who received routine care, without respiratory nurse/health worker input. Studies with co-interventions, with subgroup analysis as necessary, were considered. Only trials with at least 3 months of follow-up were included as this was considered an appropriate minimum duration of follow-up to observe any clinically significant benefits of the intervention.

Study	Wong 2012B[142]
	In brief, all studies investigated the effects of a supervised, home-based intervention in patients with COPD using a parallel group RCT design. The home-based intervention represented a respiratory nurse providing care, education and support in a patient's home. The effects of this was assessed via a variety of outcomes, including patient based outcomes (lung function, exercise testing, HRQL and mortality), health system based outcomes (medical service utilisation), and carer based outcomes (HRQL, satisfaction).
Funding	Not stated

Summary of included studies	Study	Intervention and comparison	Population	Outcomes	Comments
	Bergner 1988[9]	1. Respiratory home care group (n = 99): Patients in the respiratory home care group received specialised care from trained respiratory nurses at least 1 a month 2. Standard home care group (n = 102): Patients in the standard home care group received standard home care from nurses at least once a month 3: Control group (n = 100): Patients in the control group continued to receive usual care The duration of the intervention period was 12 months.	Patients with COPD (n=301). Patients had to have a clinical diagnosis of COPD, a FEV1 and FEV1/FVCratio <60% predicted, be homebound (by US Medicare criteria, for use of public transport), be between 40-75 years of age, be able to administer aerosolised metaproterenol, be a local resident, be capable of co-operating with the study. USA	Mortality Risk of bias (assessed in Cochrane review) Risk of bias : Selection - unclear, Blinding - high, Incomplete outcome data - Low, Outcome reporting - unclear, other-low	In Cochrane review: Home care by outreach nursing for COPD The outcomes of the interventions were assessed at 6 and 12 months after enrolment
	Coultas 2005[31]	1. Medical management group (n = 49): Patients in the medical management group received approximately 8 hours of education about the diagnosis of COPD, the assessment of COPD severity, patient self-management, smoking cessation, follow-up and the formation of an action plan for exacerbations	Patients (n=217) with COPD who fulfilled 3 criteria: were a current or former smoker with at least a 20-pack-year smoking history, had at least 1 respiratory	Health related quality of life (St George Respiratory Questionnaire, SF-36), presentations to ED, presentations to GP, hospitalisations	In Cochrane review: Home care by outreach nursing for COPD The outcomes of the

Summary of included studies	Study	Intervention and comparison	Population	Outcomes	Comments
		2. Medical and collaborative management group (n = 51): In addition to medical management, patients in the medical and collaborative management group received approximately 8 additional hours of training in 'collaborative care', intended to facilitate the adoption of healthy behaviours such as lifestyle and self-management skills 3. Control group (n = 51): Patients in the control group continued to receive usual care The duration of the intervention period was 6 months.	symptom (for example,. cough, shortness of breath, wheeze) during the past 12 months, and had demonstrable airflow obstruction (FEV1/FVC ratio < 70% and FEV1 < 80% predicted) USA	Risk of bias (assessed in Cochrane review) Risk of bias : Selection - Low, Blinding - high, Incomplete outcome data - Low, Outcome reporting -low, other-low	interventions were assessed at the end of the 6 month intervention period
	Hermiz 2002[60]	Community nurse visits and preventative GP care Versus Usual care Intervention group: 2 home visits by a community nurse: detailed assessment of the patient's health status and respiratory function; education on the disease and advised on stopping smoking (if applicable), management of activities of daily living and energy conservation, exercise, understanding and use of drugs, health maintenance, and early recognition of signs that require medical intervention; referred patients to other services such as home care; care plan posted to the GP; Patients encouraged to continue to refer to the education booklet for guidance and to keep in	Patients aged 30-80 years (n=177) who attended the hospital emergency department or were admitted to the hospitals with chronic obstructive pulmonary disease between September 1999 and July 2000 were identified from their records and invited to participate. Australia	Mortality at 3 months, Quality of life (St George's respiratory questionnaire) at 3 months, length of hospital stay (days) at index admission, presentations to ED at 3 months, admissions to hospital at 3 months, GP presentation at 3 months Risk of bias (assessed in Cochrane review) Risk of bias :	In Cochrane review: Home care by outreach nursing for COPD COPD patients did not present with exacerbation

Summary of included studies	Study	Intervention and comparison	Population	Outcomes	Comments
		contact with their GP. For 4 weeks. Usual care: discharge to GP care with or without specialist follow up; did not include routine nurse or other community follow up. Duration: Not stated		Selection - low, Blinding - high, Incomplete outcome data - Low, Outcome reporting - unclear, other-low	
	Kwok 2004[84]	Community nurse Versus Usual follow-up Intervention: usual follow-up plus home visits by community nurse proving counselling (for example,. drug compliance, dietary advice), checking vital signs, medications. Nurse access also via pager. Nurse closely liaised with geriatrician or respiratory physician. Control group: usual medical and social care and followed up in hospital outpatient clinics by geriatricians or respiratory physician.	Older adults (n=157) with a primary diagnosis of chronic lung disease and at least 1 hospital admission in the previous 6 months were recruited during acute hospitalisation in Hong Kong. Recruited on the day or the day before hospital discharge	Mortality, admissions (after 28 days), presentation to ED, length of hospital stay during study period Risk of bias (assessed in Cochrane review) Risk of bias : Selection - high, Blinding - high, Incomplete outcome data - Low, Outcome reporting - unclear, other-low	In Cochrane review: Home care by outreach nursing for COPD
	Smith 1999[122]	1. Intervention group (n = 48): Patients in the intervention group received home-based nursing intervention (HBNI) in addition to usual care from GP and OPD services. Home visits were made at 2-4 week intervals over 12 months 2. Control group (n = 48): Patients in the control group were not visited by a nurse but	Patients (n=96) with COPD who had to have a principal diagnosis of COPD, greater than 40 years of age, have a FEV1/FVC < 60%, have no other active major comorbidity, be in a stable	Mortality, hospitalisation, length of stay, presentations to ED, quality of life Risk of bias (assessed in Cochrane review)	In Cochrane review: Home care by outreach nursing for COPD The outcomes of the interventions were assessed at the end

Summary of included studies	Study	Intervention and comparison	Population	Outcomes	Comments
		received care from GP and OPD services	state, have a carer involved in their management, and be able to speak and read English. Australia	Risk of bias : Selection - Low, Blinding - high, Incomplete outcome data - Low, Outcome reporting - high, other-low	of the 12 month intervention

Individual studies (not reported in Cochrane reviews)

Study	Allen 2009[6]
Study type	RCT (Patient randomised; Parallel)
Number of studies (number of participants)	1 (n=380)
Countries and setting	Conducted in USA; Setting: Summa Health System, a 963-bed community teaching hospital in Akron, Ohio
Line of therapy	Not applicable
Duration of study	Intervention time: 6 months
Method of assessment of guideline condition	Adequate method of assessment/diagnosis
Stratum	Overall
Subgroup analysis within study	Not applicable
Inclusion criteria	Diagnosis of ischemic stroke, NIH Stroke Scale score ≥1, discharged to home from the acute care hospital, or discharged to home within 8 weeks from a short-term skilled nursing facility (SNF) or acute rehabilitation facility, live within 25 miles, have no other illness that would dominate post-stroke care, speak English, do not have an endarterectomy planned.
Exclusion criteria	Not stated

Study	Allen 2009[6]
Recruitment/selection of patients	Patients were recruited from the acute stroke unit (SU) at Summa Health System, a 963-bed community teaching hospital in Akron, Ohio. On average, the stroke unit treats 560 stroke patients per year and the unit includes a separate neurological intensive care unit. Subjects were enrolled in the study upon confirmation of ischemic stroke from August 2002-January 2006
Age, gender and ethnicity	Age - Mean (range): 68-69. Gender (M:F): 1:1. Ethnicity: 16% African-American
Further population details	1. Frail elderly: Not applicable/Not stated/Unclear
Extra comments	N/A
Indirectness of population	No indirectness
Interventions	(n=190) Intervention 1: Community matron or Nurse-led care. Recommendations from the National Stroke Association, the American Heart Association, and the National Clinical Guidelines for Stroke from the Royal College of Physicians into its interventions. For the intervention group an Advanced Practice Nurse provided care management to patients. The (Advanced Practice Nurse care manager) APN-CM performed an in-home assessment within 1 week of discharge. Standard education and intervention protocols for stroke and common post-stroke complications were implemented during the home visit. Results of the home assessment were reviewed by an interdisciplinary post-stroke consultation team (PSC-Team). The core PSC-Team included a geriatrician, community-based general internist, stroke Clinical Nurse Specialist, APN-CM, and physical therapist. Extended team members who were available as-needed included a neurologist, psychologist, pharmacist, physiatrist, social worker, physical therapist, speech therapist, occupational therapist, and dietician. The PSC-Team developed patient care plans specific to each problem identified by the APN-CM.. Duration 6 months. Concurrent medication/care: Organized Stroke Unit (SU) care - the SU provides patient-centred care through an interdisciplinary team approach. Team members evaluate each patient's physical and psychosocial needs using standardized assessment tools. The team then develops an individualized evidence-based care plan. Thus, by discharge, all patients should have had all recommended tests performed, an optimized medication regimen in place, and a thorough discharge plan. Enhanced discharge planning - the patient's primary care physician (PCP) received a written patient summary generated by the research nurse that summarized all inpatient findings, the patient's risk factor profile, discharge plans, discharge medications, and all of the baseline assessment data obtained by the research nurse. (n=190) Intervention 2: Usual care. After discharge from the acute stroke unit or short-term rehabilitation, control subjects received usual post-discharge care from their primary care physician. There were no assessments by the research team until after 6-month outcomes were measured. PCPs were sent a problem list, risk factor profile, discharge plan of care, and discharge medication list at the time of their patients' discharge from the acute care hospital to home. Control patients also received mailings every 2 months reminding them of their involvement in the study and providing stroke-related patient educational materials.. Duration 6 months. Concurrent medication/care: g

Study	Allen 2009[6]
Funding	Academic or government funding (Supported by a grant from the National Institute of Neurological Disorders and Stroke and Summer Hospitals Foundation)
RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: NURSE-LED POST DISCHARGE CARE versus USUAL CARE FROM PRIMARY CARE PHYSICIAN Protocol outcome 1: Quality of life at during study period - Actual outcome: Quality of life (SSQOL) - Group 1: 196; Group 2: 199 reported at 6 months; Risk of bias: All domain - Very high, Selection - High, Blinding - high, Incomplete outcome data - Low, Outcome reporting - High, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness Protocol outcome 2: Length of hospital stay at during study period - Actual outcome: Hospital days (average) - Group 1: 1.6 days (No SD); Group2: 1.4 days; Risk of bias: All domain - Very high, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - High, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness Protocol outcome 3: Mortality at during study period - Actual outcome: Mortality at 6 months; Group 1: 9/190, Group 2: 7/190; Risk of bias: All domain - Very high, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - High, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness	
Protocol outcomes not reported by the study	Patient and/or carer satisfaction at during study period; Number of presentations to Emergency Department at during study period; Number of admissions to hospital at After 28 days of first admission; Number of GP presentations at during study period; Readmission up to 30 days; Avoidable adverse events at during study period

1

Study	Boter 2004[13]
Study type	RCT (Patient randomised; Parallel)
Number of studies (number of participants)	1 (n=536)
Countries and setting	Conducted in Netherlands; Setting: 12 hospitals in the Netherlands
Line of therapy	Not applicable
Duration of study	Intervention time: 5 months
Method of assessment of guideline condition	Adequate method of assessment/diagnosis
Stratum	Overall
Subgroup analysis within study	Not applicable
Inclusion criteria	Dutch-speaking patients were eligible if they met the following criteria: (1) ≥18 years of age; (2) first admission for a stroke (transient ischemic attack [TIA] or ischemic stroke, primary intracerebral haemorrhage, or subarachnoid

Study	Boter 2004[13]
	haemorrhage [SAH]); (3) hospitalization within 72 hours after onset of symptoms; (4) life expectancy of >1 year; (5) independent or partly dependent on discharge (Rankin grade 0 to 3); (6) discharged home; and (7) residence within 40 km of the catchment areas served by the hospitals.
Exclusion criteria	Not stated.
Recruitment/selection of patients	Patients were recruited in 2 university hospitals and 10 general hospitals (including 2 non-academic teaching hospitals) in the districts of Amsterdam and Utrecht, the Netherlands
Age, gender and ethnicity	Age - Median (range): 63-66. Gender (M:F): 1/1. Ethnicity:
Further population details	1. Frail elderly: Not applicable/Not stated/Unclear
Extra comments	Type of stroke - Ischemic stroke: Intervention group 71%, Control group 71%; Hemorrphagic stroke: Intervention group 10%, Control group 9%; SAH: Intervention group - 19%, Control group 19%. Median total length of stay in days: 13 days for both groups
Indirectness of population	No indirectness
Interventions	(n=263) Intervention 1: Community matron or Nurse-led care. Thirteen experienced and comprehensively trained stroke nurses applied the outreach care program that consisted of 3 nurse-initiated telephone contacts (1 to 4; 4 to 8; and 18 to 24 weeks after discharge) and a visit to the patients in their homes (10 to 14 weeks after discharge). During all contacts, the nurses used a standardized checklist on risk factors for stroke, consequences of stroke, and unmet needs for stroke services. We developed for carers a similar checklist, with special attention to the consequences the stroke had on the carers' well-being. Nurses supported patients and carers according to their individual needs (for example, by giving information or reassurance) or, when the presented problem required additional care or exceeded the nurses' expertise, advised patients or carers to contact the general practitioner. . Duration 5 months. Concurrent medication/care: N/A (n=273) Intervention 2: Usual care. No details provided for standard care. Duration 5 months. Concurrent medication/care: N/A
Funding	Other (Grant from the Netherlands Heart Foundation)

RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: OUTREACH CARE PROGRAM versus STANDARD CARE ONLY

Protocol outcome 1: Patient and/or carer satisfaction at during study period
- Actual outcome: Dissatisfaction with care (home subscale). Theoretical scores range from 0-33 (11 items); arbitrarily, a score <22 is considered to indicate dissatisfaction with stroke care after discharge. at 6 months; Group 1: 115/223, Group 2: 119/247; Risk of bias: All domain - Very high, Selection - High, Blinding - High,

Study	Boter 2004[13]
Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ; Group 1 Number missing: 40, Reason: death, declined follow-up; Group 2 Number missing: 26, Reason: death, declined follow-up Protocol outcome 2: Number of GP presentations at during study period - Actual outcome: Use of general practitioner services at 6 months; Group 1: 174/236, Group 2: 181/250; Risk of bias: All domain - Very high, Selection - High, Blinding - High, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ; Group 1 Number missing: 27, Reason: death, declined follow-up; Group 2 Number missing: 23, Reason: death, declined follow-up	
Protocol outcomes not reported by the study	Quality of life at during study period; Mortality at during study period; Avoidable adverse events at during study period; Number of presentations to Emergency Department at during study period; Number of admissions to hospital at After 28 days of first admission; Readmission up to 30 days; Length of hospital stay at during study period

1

Study	Carroll 2007[23]
Study type	RCT (Patient randomised; Parallel)
Number of studies (number of participants)	1 (n=247)
Countries and setting	Conducted in USA; Setting: Secondary care
Line of therapy	Unclear
Duration of study	Intervention + follow up: Intervention 12 weeks + follow up to 1 year
Method of assessment of guideline condition	Method of assessment/diagnosis not stated: Myocardial infarction (MI) or coronary artery bypass surgery (CABS)
Stratum	Admission avoidance
Subgroup analysis within study	Not applicable
Inclusion criteria	Diagnosis of MI or coronary artery bypass surgery (CABS); older than 65 years; un-partnered (single, widowed, divorced); able to speak and read English, access to a telephone
Exclusion criteria	Not stated
Recruitment/selection of patients	Admitted to the cardiac service of 5 academic medical centres on the east and west coast of America
Age, gender and ethnicity	Age - Mean (SD): 76.3 (6.3) years. Gender (M:F): 84:163. Ethnicity: 20/247 (8%) minority
Further population details	1. Frail elderly: Not applicable/Not stated/Unclear
Extra comments	Unclear if patients having coronary artery bypass surgery were elective or emergency admissions

Study	Carroll 2007[23]
Indirectness of population	--
Interventions	(n=121) Intervention 1: Community based rehabilitative care. Social support and self-efficacy enhancement interventions to improve the physical and mental health of un-partnered older cardiac adults. Community-based collaborative intervention. Advanced practice nurse made a home visit and contacted patients over the telephone at least 3 times during the intervention; peer advisor (recruited from cardiac rehabilitation programmes; older than 60 years; history of MI and/or CABS on average 4 years previously; successful completion of cardiac rehabilitation programme; actively participating in a healthy lifestyle) made weekly calls for 12 weeks. The advanced practice nurse supported subjects and peer advisors. Duration 12 weeks. Concurrent medication/care: In addition to usual care (n=126) Intervention 2: Usual Care. No further details. Duration 12 weeks. Concurrent medication/care: Not stated
Funding	Academic or government funding (National Institute of Nursing Research)
RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: COMMUNITY BASED REHABILITATIVE CARE versus USUAL CARE Protocol outcome 1: Length of hospital stay at during study period - Actual outcome for Admission avoidance: Length of stay at Initial admission; Group 1: mean 9.45 Days (SD 4.5); n=121, Group 2: mean 10.1 Days (SD 5.9); n=126; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness	
Protocol outcomes not reported by the study	Quality of life at during study period; Avoidable adverse events at during study period; Patient and/or carer satisfaction at during study period; Number of presentations to Emergency Department at during study period; Number of admissions to hospital at After 28 days of first admission; Number of GP presentations at during study period; Readmission up to 30 days; Length of stay in programme at during study period; Mortality at during study period

1

Study	COURTNEY 2009[32]
Study type	RCT (Patient randomised; Parallel)
Number of participants	Intervention group = 64 Control group = 64 (n = 128)
Countries and setting	Tertiary metropolitan hospital in Australia.
Duration of study	Recruitment August 2004 – December 2006. Follow up for 24 weeks.

Study	COURTNEY 2009[32]
Stratum	Overall
Subgroup analysis within study	Quality of Life measure according to the 4 major admission diagnoses (cardiac, respiratory, gastrointestinal and falls).
Inclusion criteria	Inclusion criteria were chosen based on previously published research identifying risk factors for readmission. 65 years or older and admitted with a medical condition At least 1 risk factor for readmission (aged >75, multiple admissions in previous 6 months, multiple comorbidities, lived alone, lacked social support, poor self-rated health, moderate to severe functional impairment, and history of depression).
Exclusion criteria	Patients' ability to participate in the planned intervention (for example,. patients who were unable to walk independently or suffered a cognitive deficit would not be able to safely manage the intervention exercise programme)
Recruitment/selection of patients	A sample of 128 participants was recruited within 72 hours of admission to medical wards at a tertiary hospital in Brisbane, Australia. An information package on the study was provided and explained to potential participants, and signed consent was obtained from all participants. Baseline data were collected before randomisation and were thus blinded. After collection of baseline data, the research nurse at the clinical site contacted the project coordinator, who was blinded to baseline data and randomly allocated participants using a computerised randomisation program to the control or intervention group.
Age, gender and ethnicity	Age Mean: 78.8 Gender (% of F): 62.3% (76/122) Ethnicity: not stated.
Further population details	NR
Extra comments	-
Indirectness of population	No indirectness
Interventions	Intervention Group: In addition to usual care, they received an intervention following the 'Older Hospitalised Patients' Discharge Planning and In-home Follow-up Protocol (OHP-DP)', developed by the authors. The protocol commenced within 72 hours of admission and continued within 72 hours of admission and continued throughout hospitalisation, after transfer to home and in home for 6 months. The intervention was modified to the population of older patients who are at known risk of readmission yet still relatively healthy and potentially able to live independently, because it was felt that this group would particularly benefits from a relatively low resource intensive preventative intervention. Within 72 hours of admission, a registered nurse and physiotherapist undertook a comprehensive patient and developed a goal-directed, individualised care plan in consultation with the patient, health professionals, family and caregivers. The care plan included exercise intervention, nursing intervention while participant in the hospital, intervention after discharge. The latter included a nurse home visit

Study	COURTNEY 2009[32]
	within 48 hours of discharge to assess access availability of support, address transitional concerns, provide advice and support and ensure that the exercise program could be safely undertaken at home. Extra home visits were provided if required. Weekly follow-up telephone calls were provided for 4 weeks, followed by monthly follow up for a further 5 months. The nurse was also available for contact between 9am and 5pm weekdays. Control Group: Participants in the control received the routine care, discharge planning and rehabilitation advice normally provided. If in-home follow-up was necessary, it was organised in the routine manner (for example,. referral to community health services).
Funding	Australian Research Council Discovery Project Grant
RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: HOSPITAL AT HOME (PRIMARY CARE) versus INPATIENT HOSPITAL CARE Protocol outcome 1: Length of stay - Actual outcome: Length of stay; Intervention group: Mean (SD): 4.6 (+/-2.7);Control group: Mean (SD): 4.7 (+/-3.3); Risk of bias: Low; Indirectness of outcome: none. Protocol outcome 2: Readmissions - Actual outcome: Emergency hospital readmissions; Intervention group: 22.0% (21 readmissions);Control group: 46.7% (49 readmissions);Risk of bias: Low; Indirectness of outcome: none. Protocol outcome 3: GP presentations - Actual outcome: Emergency GP visits; Intervention group: 25.0% (13 emergency GP visits);Control group: 67.3% (86 emergency GP visits); Risk of bias: Low; Indirectness of outcome: None Protocol outcome 4: Quality of Life - Actual outcome: Health-related Quality of Life: Physical Component and Mental Component summary score; Intervention group: Physical: Mean (SD): 43.8 (+/-9.4); Mental: Mean (SD): 59.4 (+/-5.1); Control group: Physical: Mean (SD): 26.0 (+/-9.9); Mental: Mean (SD): 48.3 (+/-7.7); Risk of bias: High; Indirectness of outcome: None.	
Protocol outcomes not reported by the study	Mortality, avoidable adverse events, patient and/or carer satisfaction, length of stay, number of avoidable admissions

1

Study	Duffy 2010[48]
Study type	RCT (Patient randomised; Parallel)
Number of studies (number of participants)	1 (n=32)
Countries and setting	Conducted in USA; Setting: Community
Line of therapy	Unclear
Duration of study	Intervention + follow up: Intervention 6 weeks + follow up to 60 days
Method of assessment of guideline condition	Method of assessment/diagnosis not stated
Stratum	Overall

Study	Duffy 2010[48]
Subgroup analysis within study	Not applicable
Inclusion criteria	-
Exclusion criteria	-
Recruitment/selection of patients	3 accredited home health agencies in suburban Maryland
Age, gender and ethnicity	Age - Mean (SD): 81.0 (7.2) years. Gender (M:F): Define. Ethnicity: >35% minority groups
Further population details	1. Frail elderly: Frail elderly (>65 referred to home health agencies).
Indirectness of population	No indirectness
Interventions	(n=15) Intervention 1: Community matron or Nurse-led care. Home health nurses; combination of telephone and in-home visits based on patient's need for nursing services; same nurse assigned during the episode of care (60 days) to cultivate and sustain the caring patient-nurse relationship. Mutually agreeable schedule of telephone interactions established; patient provided with weight scale and symptom log. Nurse used structured telephone script focused on symptom recognition and reporting, education and emotional support to guide telephone interactions. More nursing time spent in first 2 weeks, then gradually decreasing nursing time.. Duration 6 weeks. Concurrent medication/care: Not stated (n=17) Intervention 2: Usual Care. Home health nurses providing usual care (no further details). Duration 6 weeks. Concurrent medication/care: Not stated
Funding	Academic or government funding (NINR and the Catholic University of America)

RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: COMMUNITY MATRON OR NURSE-LED CARE versus USUAL CARE

Protocol outcome 1: Quality of life at during study period
- Actual outcome: Quality of life (Living with Heart Failure Questionnaire) at 60 days; Group 1: mean 48 Not stated (SD 30.8); n=15, Group 2: mean 44.3 Not stated (SD 26.8); n=17; Living with Heart Failure Questionnaire Not stated Top=High is poor outcome; Risk of bias: All domain - Very high, Selection - High, Blinding - High, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness ; Group 1 Number missing: ; Group 2 Number missing:

Protocol outcome 2: Length of hospital stay at during study period
- Actual outcome: Length of stay at 60 days; Group 1: mean 28.6 Days (SD 10.11); n=15, Group 2: mean 26.76 Days (SD 9.58); n=17; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness ; Group 1 Number missing: ; Group 2 Number missing:

Study	Duffy 2010[48]
Protocol outcome 3: Patient and/or carer satisfaction at during study period - Actual outcome: Patient satisfaction at 60 days; Group 1: mean 55.27 None (SD 5.55); n=15, Group 2: mean 51.44 None (SD 6.63); n=17; Home Care Client Satisfaction Instrument-Revised Not stated Top=High is good outcome; Risk of bias: All domain - Very high, Selection - High, Blinding - High, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness ; Protocol outcome 4: Number of admissions to hospital at After 28 days of first admission - Actual outcome: Readmission within 60 days at 60 days; Group 1: 1/15, Group 2: 2/17; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness ;	
Protocol outcomes not reported by the study	Avoidable adverse events at during study period; Number of presentations to Emergency Department at during study period; Number of GP presentations at during study period; Readmission up to 30 days; Length of stay in programme at during study period; Mortality at during study period

Study	Gagnon 1999[52]
Study type	RCT (Patient randomised; Parallel)
Number of studies (number of participants)	1 (n=427)
Countries and setting	Conducted in Canada; Setting: Secondary care
Line of therapy	Unclear
Duration of study	Intervention time: 10 months
Method of assessment of guideline condition	Method of assessment/diagnosis not stated
Stratum	Admission avoidance
Subgroup analysis within study	Not applicable
Inclusion criteria	≥70yr, discharged home form hospital ED; living in catchment area of the Cote des Neiges or Rene Cassin community health centres; speaking English or French; passing the Abbreviated Mini-Mental State Exam; requiring assistance with at least 1 activity of daily living or 2 instrumental activities of daily living; probability of 40% or more of admission to hospital defined by Boult assessment tool; frail
Exclusion criteria	Admission to ED from long-term care facility or nursing home; participation in other research studies; currently followed by geriatric team of the hospital; unavailable for 2 or more months during the period of the study; having a partner already participating; hospitalisation at time of contact
Recruitment/selection of patients	Recruited from June to August 1996 at the Sir Mortimer B. Davis - Jewish General Hospital: Older adults discharged from emergency department in previous 12 months invited.

Study	Gagnon 1999[52]
Age, gender and ethnicity	Age - Mean (SD): Intervention: 81.4 (6.2); control 81.8 (6.7) years. Gender (M:F): 179:248. Ethnicity: Not stated
Further population details	1. Frail elderly: Frail elderly (Frail elderly).
Extra comments	Boult assessment tool measures self-rated health, admission to hospital in previous 12 months, physician or clinic visit in previous 12 months, ever history of cardiac disease and current availability of caregiver
Indirectness of population	No indirectness
Interventions	(n=212) Intervention 1: Community matron or Nurse-led care. Nurse case managers expected to integrate care from a health maintenance and promotion perspective; included supporting patient and caregiver during transition related to health status, environmental change and changes in resource needs; coordinated all healthcare providers involved in care; during hospitalisation, patients placed on Promotion of Autonomy Intervention Framework (structured assessments and interventions); baseline data collected during early visits; responding to the strengths and coping abilities of the older person and encouraging maximal autonomy; monthly phone call and home visit every 6 weeks as a minimum; nurses on call to manage issues over the phone and link person with required services. Case managers met with investigative team members in hospital on a weekly basis to discuss complicated cases and ensure uniformity across case managers; medical consultation available from designated hospital geriatrician, geriatricians from community health centres, patient's family physician and staff physicians during hospitalisations. Case managers also members of existing multidisciplinary teams in their respective community health centres, including community-based family physicians, psycho-geriatricians or psychologists, social workers, occupational therapists, physiotherapists and dieticians. Duration 10 months. Concurrent medication/care: Not stated (n=215) Intervention 2: Usual Care. Hospital and community services provided separately and varied by different hospital staff involved; whether person known to health centre and varying definitions of "frail" by centre.. Duration 10 months. Concurrent medication/care: Not stated
Funding	Funding not stated
RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: COMMUNITY MATRON OR NURSE-LED CARE versus USUAL CARE Protocol outcome 1: Quality of life at during study period - Actual outcome: SF-36 Physical functioning at 10 months; Group 1: mean 46.7 % (SD 29.8); n=153, Group 2: mean 44.1 % (SD 29.9); n=163; SF-36 0-100 Top=High is good outcome; Risk of bias: All domain - Very high, Selection - Low, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness ; Group 1 Number missing: 59; Group 2 Number missing: 52 - Actual outcome: SF-36 Role physical at 10 months; Group 1: mean 49 % (SD 44.1); n=151, Group 2: mean 49.1 % (SD 44.3); n=163; SF-36 0-100 Top=High is good outcome; Risk of bias: All domain - Very high, Selection - Low, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness ; Group 1 Number missing: 61; Group 2 Number missing: 52	

Study	Gagnon 1999[52]
- Actual outcome: SF-36 Bodily pain at 10 months; Group 1: mean 56.2 % (SD 33.1); n=153, Group 2: mean 56.4 % (SD 33.8); n=163; SF-36 0-100 Top=High is good outcome; Risk of bias: All domain - Very high, Selection - Low, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness ; Group 1 Number missing: 59; Group 2 Number missing: 52 - Actual outcome: SF-36 General health at 10 months; Group 1: mean 46.2 % (SD 21.6); n=150, Group 2: mean 48.1 % (SD 20); n=161; SF-36 0-100 Top=High is good outcome; Risk of bias: All domain - Very high, Selection - Low, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness ; Group 1 Number missing: 62; Group 2 Number missing: 54 - Actual outcome: SF-36 Vitality at 10 months; Group 1: mean 42.9 % (SD 25.7); n=153, Group 2: mean 42.5 % (SD 25); n=162; SF-36 0-100 Top=High is good outcome; Risk of bias: All domain - Very high, Selection - Low, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness ; Group 1 Number missing: 59; Group 2 Number missing: 53 - Actual outcome: SF-36 Social functioning at 10 months; Group 1: mean 69.8 % (SD 33.5); n=148, Group 2: mean 68.9 % (SD 34.8); n=159; SF-36 0-100 Top=High is good outcome; Risk of bias: All domain - Very high, Selection - Low, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness ; Group 1 Number missing: 64; Group 2 Number missing: 56 - Actual outcome: SF-36 Role emotional at 10 months; Group 1: mean 68.2 % (SD 44); n=153, Group 2: mean 62.1 % (SD 46); n=160; SF-36 0-100 Top=High is good outcome; Risk of bias: All domain - Very high, Selection - Low, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness ; Group 1 Number missing: 59; Group 2 Number missing: 55 - Actual outcome: SF-36 Mental health domain at 10 months; Group 1: mean 60 % (SD 24); n=153, Group 2: mean 59.7 % (SD 23.2); n=161; SF-36 0-100 Top=High is good outcome; Risk of bias: All domain - Very high, Selection - Low, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness ; Group 1 Number missing: 59; Group 2 Number missing: 54 Protocol outcome 2: Length of hospital stay at during study period - Actual outcome: Hospital length of stay at 10 months; Group 1: mean 13 Days (SD 20.7); n=212, Group 2: mean 11.9 Days (SD 13.1); n=215; Risk of bias: All domain - Low, Selection - Low, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness ; Protocol outcome 3: Patient and/or carer satisfaction at during study period - Actual outcome: Satisfaction at 10 months; Group 1: mean 25 Not stated (SD 5.2); n=212, Group 2: mean 23.9 Not stated (SD 5.8); n=215; Client Satisfaction Questionnaire (CSQ-8) 8-32 Top=High is good outcome; Risk of bias: All domain - High, Selection - Low, Blinding - High, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness Protocol outcome 4: Number of presentations to Emergency Department at during study period - Actual outcome: Emergency department admissions at 10 months; Group 1: mean 1.2 (SD 2); n=212, Group 2: mean 0.9 (SD 1.2); n=215; Risk of bias: All domain - Low, Selection - Low, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness ; Protocol outcome 5: Number of admissions to hospital at After 28 days of first admission - Actual outcome: Hospitalisations at 10 months; Group 1: mean 0.5 (SD 0.8); n=212, Group 2: mean 0.4 (SD 0.7); n=215; Risk of bias: All domain - Low, Selection - Low, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness ;:
Protocol outcomes not reported by the study	Avoidable adverse events at during study period; Number of GP presentations at during study period; up to 30 days;

Study	Gagnon 1999[52]
	Length of stay in programme at during study period; Mortality at during study period

1

Study	Community nurse follow-up trial: Hansen 1992[58]
Study type	RCT (Patient randomised; Parallel)
Number of studies (number of participants)	1 (n=404)
Countries and setting	Conducted in Denmark; Setting: Study jointly carried out by personnel of County hospital, community nursing services and the 37 attached general practitioners of Roskilde, Denmark during the period 1st May 1987 to 15th June 1988
Line of therapy	1st line
Duration of study	Intervention + follow up: 1 year follow-up
Method of assessment of guideline condition	Adequate method of assessment/diagnosis
Stratum	Overall
Subgroup analysis within study	Not applicable
Inclusion criteria	Patients aged 75 or more, admitted to the County hospital that are residents within the municipality
Exclusion criteria	not mentioned
Recruitment/selection of patients	Patients aged 75 or more, admitted to the County hospital that are residents within the municipality were identified through the hospital's ordinary computer system. Patients born on an uneven date were randomised to the intervention, those born on an even date to the control group. Allocation took place on the day of discharge.
Age, gender and ethnicity	Age - Other: 45% aged 75-79; 31% aged 80-84; 24% aged 85 or more. Gender (M:F): 2/1. Ethnicity: not mentioned
Further population details	1. Frail elderly: Frail elderly
Indirectness of population	No indirectness
Interventions	(n=199) Intervention 1: Community matron or Nurse-led care. Patients in the intervention group were visited on the day after the discharge by 1 of the district nurses. 2 weeks later patients were seen by their GP. At her visit the nurse evaluated whether the discharge plan had been initiated. She identified and solved problems; altered services if required. The GPs visit was a follow-up of the treatment instituted during hospitalisation. The GP also made socio-medical evaluation of the patient and contacted the hospital or community nursing services if needed.. Duration 1 year follow-up (from day of discharge). Concurrent medication/care: control group received usual care (n=205) Intervention 2: Usual Care. After their discharge, the patients were allocated social and medical support according to prevailing criteria. In order to avoid contamination from the intervention group, written information and

Study	Community nurse follow-up trial: Hansen 1992[58]
	invitation to participate were not given until after the discharge. . Duration 1 year follow-up (from day of discharge). Concurrent medication/care: not specifically mentioned
Funding	Academic or government funding
RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: COMMUNITY MATRON OR NURSE-LED CARE versus USUAL CARE Protocol outcome 1: Mortality at during study period - Actual outcome: Mortality at 1 year; Group 1: 32/163, Group 2: 43/181; Risk of bias: All domain - High, Selection - High, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness; Baseline details: not many details given; Group 1 Number missing: 36, Reason: patients refusing participation, not being visited, or readmission within 14 days; Group 2 Number missing: 24, Reason: patients refusing participation, or readmission within 14 days Protocol outcome 2: Number of admissions to hospital at After 28 days of first admission - Actual outcome: Readmissions during the year after first discharge (but admissions according to our definition) at 1 year; Group 1: 75/163, Group 2: 83/181; Risk of bias: All domain - High, Selection - High, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: Serious indirectness, Comments: this outcome contains both readmissions and admissions according to our definitions; Baseline details: not many details given; Group 1 Number missing: 36, Reason: patients refusing participation, not being visited, or readmission within 14 days; Group 2 Number missing: 24, Reason: patients refusing participation, or readmission within 14 days	
Protocol outcomes not reported by the study	Quality of life at during study period; Avoidable adverse events at during study period; Patient and/or carer satisfaction at during study period; Number of presentations to Emergency Department at during study period; Number of GP presentations at during study period; Readmission up to 30 days; Length of stay in programme at during study period; Length of hospital stay at during study period

Study	Harrison 2002[59]
Study type	RCT (Patient randomised; Parallel)
Number of studies (number of participants)	1 (n=192)
Countries and setting	Conducted in Canada; Setting: Secondary care
Line of therapy	Unclear
Duration of study	Intervention + follow up: Intervention 2 weeks + follow up to 12 weeks
Method of assessment of guideline condition	Method of assessment/diagnosis not stated: Congestive heart failure

Study	Harrison 2002[59]
Stratum	Overall
Subgroup analysis within study	Not applicable
Inclusion criteria	Residing in the regional home care radius (60km); expected to be discharged with home nursing care; English or French speaking; admitted for >24 hours to the nursing units; not cognitively impaired (score <8 on Short Portable Mental Status Exam)
Exclusion criteria	Not stated
Recruitment/selection of patients	Patients admitted to 2 general medical units of a large urban teaching hospital in Ottawa, Ontario, Canada with a diagnosis of congestive heart failure between June 1996 and January 1998
Age, gender and ethnicity	Age - Mean (range): 76 (33-93) years. Gender (M:F): 105:87. Ethnicity: Not stated
Further population details	1. Frail elderly: Frail elderly (Mean 3.76 comorbidities and 6.36 medications daily).
Indirectness of population	No indirectness
Interventions	(n=100) Intervention 1: Usual Care. During hospitalisation, staff physicians established the medical regimen; other usual providers included hospital and community primary nurses and home care coordinators. Optimal usual care; timing and number of home nurse visits scheduled to match those received by intervention group (to control for effect of attention alone). Usual care for hospital to home transfer involves completion of medical history, nursing assessment form and, in ideal circumstances within 24 hours of hospital admission, a multidisciplinary discharge plan. Weekly discharge planning meetings identify patient needs. Regional home care coordinator consults with hospital team as required and may meet directly with patients and families. Immediately before discharge, physician completes referral for home care and necessary services and supplies are communicated to the home nursing agency. Usual home nursing care for patients with CHF includes assessment and monitoring, health teaching, provision of direct care (for example,. administration of medication) and managing equipment and treatments. Minimum 2 visits in first 2 weeks after discharge. Duration 2 weeks. Concurrent medication/care: Not stated (n=92) Intervention 2: Community matron or Nurse-led care. On admission, patients' chart flagged for primary nurse to follow checklist of activities for Transitional Care (intervention); protocol covered admission to 2 weeks after discharge, after which patient received usual care by community nurses. Standard discharge planning and care + comprehensive programme adding supports to improve transfer from hospital to home (outreach from hospital + in reach from community) to address 3 aspects of transition: 1) supportive care for self-management; 2) linkages between hospital and home nurses and patients and 3) balance of care between patient and family and professional providers. Use of a structured, comprehensive, evidence-based protocol for counselling and education for heart failure self-management plus additional and planned linkages to support individuals in taking charge of aspects of their care. Education-counselling protocol entitled Partners in Care for Congestive Heart Failure (PCCHF) developed in

Study	Harrison 2002[59]
	response to AHCPR guideline recommendations and comprising 2 clinical components: 1) patient workbook and 2) education map that provided the overall education plan, serving as patient-held documentation tool. . Duration 2 weeks. Concurrent medication/care: Workbook = structured approach for patient education covering the basics of heart function and self-monitoring; what CHF means, management of medications, diet, exercise, stress, support systems, community resources. Pocket for inserting patient-specific information (for example,. medication, dietary handouts). Linkages, additional to usual practice, created among providers and patients including nursing transfer letter to home care nurse detailing clinical status and self-management needs; telephone outreach from hospital nurse within 24 hours of discharge; notification to home care of hospital primary nurse for follow up consul if necessary; patient-held documentation tool.
Funding	Academic or government funding (Health Canada, National Health Research and Development Program)

RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: COMMUNITY MATRON OR NURSE-LED CARE versus USUAL CARE

Protocol outcome 1: Quality of life at during study period
- Actual outcome: Minnesota Living with Heart Failure Questionnaire (MLHFQ) at 12 weeks; Group 1: mean 25.76 Not stated (SD 19.44); n=80, Group 2: mean 38.39 Not stated (SD 18.24); n=77; Minnesota Living with Heart Failure Questionnaire 0-105 Top=High is poor outcome; Risk of bias: All domain - Very high, Selection - Low, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness ; Group 1 Number missing: 12, Reason: Died/too ill/withdrew/lost to follow up; Group 2 Number missing: 23, Reason: Died/too ill/withdrew/lost to follow up- Actual outcome: SF-36 Physical component at 12 weeks; Group 1: mean 32.05 None (SD 11.81); n=77, Group 2: mean 28.31 None (SD 10); n=74; SF-36 0-100 Top=High is good outcome; Risk of bias: All domain - Very high, Selection - Low, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness ; Group 1 Number missing: 15, Reason: Died/too ill/withdrew/lost to follow up; Group 2 Number missing: 26, Reason: Died/too ill/withdrew/lost to follow up
- Actual outcome: SF-36 Mental component at 12 weeks; Group 1: mean 53.94 None (SD 12.32); n=78, Group 2: mean 51.03 None (SD 11.51); n=78; SF-36 0-100 Top=High is good outcome; Risk of bias: All domain - Very high, Selection - Low, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness ; Group 1 Number missing: 14, Reason: Died/too ill/withdrew/lost to follow up; Group 2 Number missing: 22, Reason: Died/too ill/withdrew/lost to follow up
Protocol outcome 2: Length of hospital stay at during study period
- Actual outcome: Length of hospital stay at 12 weeks; Group 1: mean 7.59 Days (SD 8.36); n=92, Group 2: mean 7.67 Days (SD 7.99); n=100; Risk of bias: All domain - Low, Selection - Low, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness

Protocol outcome 3: Number of presentations to Emergency Department at during study period
- Actual outcome: At least 1 emergency room visit at 12 weeks; Group 1: 23/80, Group 2: 35/77; Risk of bias: All domain - High, Selection - Low, Blinding - Low, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness ; Group 1

Study	Harrison 2002[59]
Number missing: 12, Reason: Died/too ill/withdrew/lost to follow up; Group 2 Number missing: 23, Reason: Died/too ill/withdrew/lost to follow up Protocol outcome 4: Readmission up to 30 days - Actual outcome: Admitted to hospital at 12 weeks; Group 1: 18/80, Group 2: 24/77; Risk of bias: All domain - High, Selection - Low, Blinding - Low, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness ; Group 1 Number missing: 12, Reason: Died/too ill/withdrew/lost to follow up; Group 2 Number missing: 23, Reason: Died/too ill/withdrew/lost to follow up	
Protocol outcomes not reported by the study	Avoidable adverse events at during study period; Patient and/or carer satisfaction at during study period; Number of admissions to hospital at After 28 days of first admission; Number of GP presentations at during study period; Length of stay in programme at during study period; Mortality at during study period

Study	Hermiz 2002[60]
Study type	RCT (Patient randomised; Parallel)
Number of participants	177
Countries and setting	Liverpool Health Service and Macarthur Health Service in outer metropolitan Sydney, Australia
Duration of study	3 months
Stratum	
Subgroup analysis within study	None
Inclusion criteria	Patients aged 30-80 years who attended the hospital emergency department or were admitted to the hospitals with chronic obstructive pulmonary disease between September 1999 and July 2000
Exclusion criteria	Resided outside the region, had insufficient English speaking skills, resident in a nursing home or confused or demented
Recruitment/selection of patients	All patients aged 30-80 years who attended the hospital emergency department or were admitted to the hospitals with chronic obstructive pulmonary disease between September 1999 and July 2000 identified from records
Age, gender and ethnicity	Mean age: intervention: 67.1, control: 66.7 years; men/women: intervention: 41 (48.8%)/43 (51.2%), control:43 (46.2%)/50 (53.8%); ethnicity not stated
Further population details	-
Extra comments	-
Indirectness of population	No indirectness
Interventions	(n=84) Intervention group: 2 home visits by a community nurse. The first, within a week of discharge, included a detailed assessment of

Study	Hermiz 2002[60]
	the patient's health status and respiratory function. Nurses provided verbal and written education on the disease and advised on stopping smoking (if applicable), management of activities of daily living and energy conservation, exercise, understanding and use of drugs, health maintenance, and early recognition of signs that require medical intervention. The nurses also identified problem areas and, if indicated, referred patients to other services such as home care. After the visit, a care plan documenting problem areas, education provided, and referral to other services was posted to the GP, and if appropriate the GP was contacted by phone. At the second home visit, 1 month later (at 4 weeks after discharge), the nurses reviewed the patient's progress and need for further follow up. Patients were encouraged to continue to refer to the education booklet for guidance and to keep in contact with their GP. Concurrent medication/care: Not stated Duration: 4 weeks (n=93) Usual care: discharge to GP care with or without specialist follow up; did not include routine nurse or other community follow up. Concurrent medication/care: Not stated Duration: Not stated
Funding	Academic or government funding (General Practice Evaluation Program, Commonwealth Department of Health and Aged Care)

RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: Nurse visits versus usual care

Protocol outcome 1: Mortality at End of follow-up
- Actual outcome for Adults: Mortality at 3 months; Intervention: 9/84 (11%), usual care: 10/93 (11%); Risk of bias: All domain - Low, Selection - Low, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - high, other-low

Protocol outcome 2: Quality of life at End of follow up
- Actual outcome for Adults: St George's respiratory questionnaire (disease-specific quality of life; range 0-100; higher score = worse quality of life) change from baseline (95% CI) in total score at 3 months; Intervention: 4.33 (1.05 to 7.61) (n=67), usual care: 3.00 (0.24 to 5.77) (n=80); Risk of bias: All domain - Low, Selection - Low, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - high, other-low

Protocol outcome 3: Length of stay at index admission
- Actual outcome for Adults: Length of stay (days) at index admission; Intervention: 7.1 (6.2) (n=84), usual care: 6.2 (5.3) (n=93); Risk of bias: All domain - Low, Selection - Low, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - high, other-low

Protocol outcome 4: Presentations to ED at End of follow-up
- Actual outcome for Adults: Presentations to ED at 3 months; Intervention: 2/67 (3%), usual care: 8/80 (10%); Risk of bias: All domain - Low, Selection - Low, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - high, other-low

Protocol outcome 5: Admissions to hospital at End of follow-up
- Actual outcome for Adults: Admissions to hospital at 3 months; Intervention: 16/67 (24%), usual care: 14/80 (18%); Risk of bias: All domain - Low, Selection - Low,

Study	Hermiz 2002[60]
Blinding - Low, Incomplete outcome data - Low, Outcome reporting - high, other-low Protocol outcome 6: GP presentations at End of follow-up - Actual outcome for Adults: GP presentation at 3 months; Intervention: 6.06 (n=60), usual care: 5.54 (n=74); Risk of bias: All domain - Low, Selection - Low, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - high, other-low	

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Study	Hunger 2015[64]
Study type	RCT (Patient randomised; Parallel)
Number of studies (number of participants)	1 (n=329)
Countries and setting	Conducted in Germany; Setting: The Augsburg Hospital is the largest hospital in the region of Augsburg - offering a coronary care unit as well as coronary angiography and angioplasty facilities 24 hours a day.
Line of therapy	Not applicable
Duration of study	Intervention time: 1 year
Method of assessment of guideline condition	Adequate method of assessment/diagnosis
Stratum	Overall
Subgroup analysis within study	Not applicable
Inclusion criteria	Eligible participants were all patients aged 65 years and older with a first or recurrent myocardial infarction (MI) during the recruitment period.
Exclusion criteria	Patients who already lived in institutionalised care or already planned to move to it were excluded. Also, patients with dementia, insufficient German language skills or with severe comorbidity (that is, associated with a life expectancy of less than 1 year, for example,. terminal cancer) were excluded. (Limitations in vision and hearing were no exclusion criterion)
Recruitment/selection of patients	Recruitment period from September 2008 to May 2010. Patients were treated in the Augsburg Hospital in southern Germany.
Age, gender and ethnicity	Age - Mean (range): 75.2-75.6 years. Gender (M:F): 1.63/1. Ethnicity: Not reported
Further population details	1. Frail elderly: Frail elderly (All patients aged 65-92).
Extra comments	Baseline: HAQ-DI score - Intervention group 0.762±0.808, Control group 0.752±0.752; Barthel Index - Intervention group 90.8±17.1, Control group 90.8±17.5

Study	Hunger 2015[64]
Indirectness of population	No indirectness
Interventions	(n=161) Intervention 1: Community matron or Nurse-led care. Nurse-led individualised home-follow up programme. The programme started with an initial session of 1 hour, taking place shortly before hospital discharge, where patients were provided with information about disease, comorbidities, and medication. Information was given orally and in written form of a so-called 'heart book'. A first home visit is arranged, if accepted by the patient, otherwise an appointment for a telephone call is made. Home visits (0 to 4) and telephone calls (at least every 3 months) are carried out according to patient need and patient risk level. At the first home visit the specific problems of the patient are identified and documented. An individual plan for each patient is set up. The risk level is assessed by the study nurse during the first home visit based on compliance, the social network, and the comorbidities. The higher the risk level the more contact (telephone and home visits) are arranged by the study nurse. First home visit is scheduled to take place 7 to 14 days after discharge. At the home visit patients are instructed how the prescribed drugs have to be taken and what happen in the case of non-compliance with medication. Key elements of the intervention were to detect problems and risks (for example,. regarding intake of medication, decompensated heart failure), to give advice regarding different aspects of disease management (for example,. nutrition and health behaviour), and to refer to the general practitioner, if necessary. During the visits, blood pressure and weight were measured. In individuals with diabetes, additional measurement of blood glucose were performed. Duration 1 year. Concurrent medication/care: N/A (n=172) Intervention 2: Usual care. Not details reported.. Duration 1 year. Concurrent medication/care: Patients could receive in-hospital cardiac rehabilitation or could be enrolled in a long-term disease management programme by their treating physician.
Funding	-- (Grant from the German Federal Ministry of Education and Research. The KORA (Cooperative Health research platform) is financed by the Helmholtz Zentrum München (German Research Center for Environmental Health) which is funded by the German Federal Ministry of Education and Research by the State of Bavaria.)
RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: NURSE-LED FOLLOW-UP PROGRAMME versus USUAL CARE Protocol outcome 1: Quality of life at during study period - Actual outcome: Health Assessment Questionnaire Disability Index (HAQ-DI) score at 1 year; Group 1: mean 0.53 (SD 0.66); n=116, Group 2: mean 0.77 (SD 0.81); n=136; HAQ-DI score 0-3 Top=High is poor outcome; Risk of bias: All domain - Very high, Selection - High, Blinding - High, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ; Group 1 Number missing: 45, Reason: Death, withdrew consent, refused participation, lost to follow up; Group 2 Number missing: 36, Reason: Death, withdrew consent, refused participation - Actual outcome: Barthel Index at 1 year; Group 1: mean 97.63 (SD 8.33); n=116, Group 2: mean 93.64 (SD 15.47); n=135; Barthel Index 0-100 Top=High is good outcome; Risk of bias: All domain - Very high, Selection - High, Blinding - High, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low,	

Study	Hunger 2015[64]
Crossover - Low; Indirectness of outcome: No indirectness ; Group 1 Number missing: 45, Reason: Death, withdrew consent, refused participation, lost to follow up; Group 2 Number missing: 37, Reason: Death, withdrew consent, refused participation	
Protocol outcomes not reported by the study	Mortality at during study period; Avoidable adverse events at during study period; Patient and/or carer satisfaction at during study period; Number of presentations to Emergency Department at during study period; Number of admissions to hospital at After 28 days of first admission; Number of GP presentations at during study period; Readmission up to 30 days; Length of hospital stay at during study period

Study	Follow-up care in general practice by specialist liaison nurses trial: Jolly 1998[71]
Study type	RCT (randomised; Parallel)
Number of studies (number of participants)	1 (n=597)
Countries and setting	Conducted in United Kingdom; Setting: 2 hospitals and 67 practices in Southampton and South-West Hampshire, UK
Line of therapy	Adjunctive to current care
Duration of study	Intervention + follow up:
Method of assessment of guideline condition	Adequate method of assessment/diagnosis
Stratum	Overall: present results overall as well as split by MI and angina
Subgroup analysis within study	Not applicable
Inclusion criteria	patients who had been admitted to hospital with a first or subsequent myocardial infarction or who have a history of recent-onset angina (<3months before recruitment) willing to consent to follow-up for 1 year
Exclusion criteria	if unable to complete the recruitment questionnaire
Recruitment/selection of patients	between April 1995 and September 1996 all patients admitted to hospital with a first or subsequent myocardial infarction were identified by 1 of 3 cardiac liaison nurses. Patients with recent onset angina (<3 months) were identified from wards or through direct-access chest-pain clinics.
Age, gender and ethnicity	Age - Mean (SD): intervention 63.2 (10.1); control 64.0 (10.3). Gender (M:F): 2/1. Ethnicity: Caucasian: intervention (98%), control (96%)
Further population details	1. Frail elderly
Extra comments	Randomisation per practice not individual patient (cluster-randomisation)
Indirectness of population	No indirectness
Interventions	(n=277) Intervention 1: Community matron or Nurse-led care. Aim of intervention: to bridge the gap between 1st and

Study	Follow-up care in general practice by specialist liaison nurses trial: Jolly 1998[71]
	2nd care; take account of current models of behaviour change; provide structured programme of follow-up care for each individual; promote adherence to therapies of proven effectiveness delivered by cardiac liaison nurses. Nurses met assigned patients while in hospital; patient-held record was developed to facilitate structured follow-up; fortnightly visits prior to attendance at cardiac rehabilitation at 2 months, then 3 monthly follow-up; coordinated care; provided advice and info on medication, lifestyle issues and cardiac rehabilitation.. Duration 4 months follow-up. Concurrent medication/care: Control group not specifically mentioned. Assume it is usual care as outpatients. (n=320) Intervention 2: Usual Care. Not mentioned what care the control group received. Assume it is usual follow-up care as outpatients. Duration 4 months follow-up. Concurrent medication/care: usual care
Funding	Academic or government funding
RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: FOLLOW-UP CARE IN GENERAL PRACTICE versus USUAL CARE Protocol outcome 1: Number of admissions to hospital at After 28 days of first admission - Actual outcome: Patients admitted to hospital at within 4 months; Group 1: 55/219, Group 2: 75/242; Risk of bias: All domain - High, Selection - High, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: Serious indirectness, Comments: data contains both admissions and readmissions as per our definitions (readmissions = 28 days); Group 1 Number missing: 58, Reason: due to low response rates for questionnaires and death rates (n=24 overall); Group 2 Number missing: 78, Reason: due to low response rates for questionnaires and death rates (n=24 overall)	
Protocol outcomes not reported by the study	Quality of life at during study period; Mortality at during study period; Avoidable adverse events at during study period; Patient and/or carer satisfaction at during study period; Number of presentations to Emergency Department at during study period; Number of GP presentations at during study period; Readmission up to 30 days; Length of stay in programme at during study period; Length of hospital stay at during study period

1

Study	Feasibility trial for early nurse-led discharge for coronary patients trial: Kotowycz 2010[80]
Study type	RCT (Patient randomised; Parallel)
Number of studies (number of participants)	1 (n=54)
Countries and setting	Conducted in Canada; Setting: Hamilton General Hospital, Canada, between January and October 2007
Line of therapy	Adjunctive to current care
Duration of study	Intervention + follow up: 6 week follow-up
Method of assessment of guideline condition	Adequate method of assessment/diagnosis

Study	**Feasibility trial for early nurse-led discharge for coronary patients trial: Kotowycz 2010[80]**
Stratum	Overall
Subgroup analysis within study	Not applicable
Inclusion criteria	All patients with ST-segment elevation myocardial infarction (STEMI) presenting to Hamilton General hospital (either directly or via other hospitals) for primary or rescue percutaneous coronary intervention (PCI) with a Zwolle score of 3 or lower (that is, low-risk patients)
Exclusion criteria	patients who developed STEMI while in hospital for another reason, patients who had a clear contraindication to early discharge at the time of randomisation, and patients who could not be randomised within 24 hours of having their angioplasty
Recruitment/selection of patients	All patients with ST-segment elevation myocardial infarction (STEMI) presenting to Hamilton General hospital (either directly or via other hospitals) for primary or rescue percutaneous coronary intervention (PCI)
Age, gender and ethnicity	Age - Mean (SD): intervention 55.6 years (no SDs reported); control 55.0 years. Gender (M:F): 3/1. Ethnicity: not reported
Further population details	-
Indirectness of population	No indirectness
Interventions	(n=27) Intervention 1: Community matron or Nurse-led care. Patients were actively targeted for hospital discharge within 72 hours and received additional follow-up with an advanced practice nurse (APN). Patients were initially seen by the APN in hospital before discharge, had follow-up within 3 days of discharge in an outpatient setting and had 2 or more additional follow-ups within 30 days of discharge (face-to-face or via telephone if appropriate). APN: educate patients about nature and management of their disease, medications, facilitation of discharge planning by making aware of follow-up appointments and outpatient tests.. Duration 6 weeks. Concurrent medication/care: not mentioned; control group: discharge planning and follow-up were left to the treating physician and nursing team; there was no added nursing intervention. (n=27) Intervention 2: Usual Care. Discharge planning and follow-up were left to the treating physician and nursing team; there was no added nursing intervention.. Duration 6 weeks. Concurrent medication/care: n/a
Funding	Academic or government funding
RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: COMMUNITY MATRON OR NURSE-LED CARE versus USUAL CARE Protocol outcome 1: Length of hospital stay at during study period - Actual outcome: length of initial inpatient stay (hours) at 6 weeks; Group 1: mean 2.51 days (calculated based on the hours and minutes provided in the paper); SD	

Study	Feasibility trial for early nurse-led discharge for coronary patients trial: Kotowycz 2010[80]
was not reported so I calculated it (SD 0.854371); n=27, Group 2: mean 2.57 days (calculated based on the hours and minutes provided in the paper); SD was not reported so I calculated it (SD 0.854371); n=27; Risk of bias: All domain - Low, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness; Group 1 Number missing: 0; Group 2 Number missing: 0 Protocol outcome 2: Number of presentations to Emergency Department at during study period - Actual outcome: Mortality at 6 weeks; Group 1: 0/27, Group 2: 0/27; Risk of bias: All domain - Low, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ; Group 1 Number missing: 0; Group 2 Number missing: 0 - Actual outcome: ED presentations (cardiac) at 6 weeks; Group 1: 3/27, Group 2: 4/27; Risk of bias: All domain - Low, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ; Group 1 Number missing: 0; Group 2 Number missing: 0 Protocol outcome 3: Number of admissions to hospital at After 28 days of first admission - Actual outcome: admissions at 6 weeks; Group 1: 2/27, Group 2: 1/27; Risk of bias: All domain - Low, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: Serious indirectness, Comments: includes readmisisons and admissions in the first 6 weeks post-discharge; Group 1 Number missing: 0; Group 2 Number missing: 0	
Protocol outcomes not reported by the study	Quality of life at during study period; Avoidable adverse events at during study period; Patient and/or carer satisfaction at during study period; Number of GP presentations at during study period; Readmission up to 30 days; Length of stay in programme at during study period; Mortality at during study period

1

Study	Kwok 2008[83]
Study type	RCT (Patient randomised; Parallel)
Number of studies (number of participants)	1 (n=105)
Countries and setting	Conducted in Hong Kong (China); Setting: Secondary care. Prince of Wales Hospital, a major teaching hospital in Hong Kong.
Line of therapy	Unclear
Duration of study	Recruitment September 1999 – February 2001. Intervention time: 6 months
Method of assessment of guideline condition	Method of assessment/diagnosis not stated: Chronic heart failure
Stratum	Overall
Subgroup analysis within study	Not applicable
Inclusion criteria	Age 60 or older; resident within the region; at least 1 hospital admission for chronic heart failure in last 12 months

Study	Kwok 2008[83]
	prior to the index admission
Exclusion criteria	Communication problems, without family caregivers; residing in a nursing home; terminal disease with life expectancy <6 months
Recruitment/selection of patients	Recruited from medical wards of Prince of Wales Hospital (major teaching hospital) and another acute district general hospital (Alice Ho Miu Ling Methersole Hospital). Eligible subjects were identified and recruited by a research nurse on the day or the day before hospital discharge. After obtaining written consent from the subjects, the research nurse recorded demographic data, functional status, cognitive function, psychological state and a general health questionnaire. The ward nurses then phoned a second research assistant who assigned trial grouping according to a random number table. The group assignment was made known to patients. One intervention and 2 control group subjects dropped out because of moving out of Hong Kong and the development of symptomatic cancer.
Age, gender and ethnicity	Age - Mean (SD): Intervention 79.5 (6.6); control 76.8 (7.0) years. Gender (M:F): 47:58. Ethnicity: Not stated
Further population details	1. Frail elderly: Frail elderly (Multiple comorbidities). The intervention group subjects were more likely to be recipients of 'comprehensive social security allowance' and had greater economical handicap.
Indirectness of population	No indirectness
Interventions	(n=49) Intervention 1: Community matron or Nurse-led care. Community nurse (CN) visited patient before discharge to provide health counselling (for example,. drug compliance, dietary advice) and encourage patient to contact CN via telephone hotline when they developed symptoms. Visited at home within 7 days of discharge to review condition; medications checked and compliance encouraged; healthy diet and exercise promoted; arrange home and day care services when required. Weekly home visits for 4 weeks and monthly to 6 months. CN liaised closely with geriatrician or cardiologist in hospital; could alter medications and arrange urgent outpatient appointments or admissions. If readmitted, CNs visited and provided information to attending doctors. Duration 6 months. Concurrent medication/care: Not stated (n=56) Intervention 2: Usual Care. Usual medical and social care. The same group of geriatricians/cardiologists followed patients up as outpatients. . Duration 6 months. Concurrent medication/care: Not stated
Funding	Academic or government funding (Health Services Research Committee/Health Care and Promotion Fund of Hong Kong)
RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: COMMUNITY MATRON OR NURSE-LED CARE versus USUAL CARE	

Study	Kwok 2008[83]
Protocol outcome 1: Mortality at during study period - Actual outcome: Died at 6 months; Group 1: 4/49, Group 2: 8/56; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness ; Baseline details: More in intervention group received comprehensive social security assistance (CSSA): 23/49 (47%) vs. 14/56 (25%) and had greater economic handicap; Protocol outcome 2: Number of admissions to hospital at After 28 days of first admission - Actual outcome: Readmission at 6 months; Group 1: 19/44, Group 2: 24/46; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness ; Baseline details: More in intervention group received comprehensive social security assistance (CSSA): 23/49 (47%) vs. 14/56 (25%) and had greater economic handicap; Group 1 Number missing: 5, Reason: 4 died, 1 moved away; Group 2 Number missing: 10, Reason: 8 died, 1 moved away, 1 had cancer	
Protocol outcomes not reported by the study	Quality of life at during study period; Avoidable adverse events at during study period; Patient and/or carer satisfaction at during study period; Number of presentations to Emergency Department at during study period; Number of GP presentations at during study period; Readmission up to 30 days; Length of stay in programme at during study period; Length of hospital stay at during study period

1

Study	Kwok 2004[84]
Study type	RCT (Patient randomised; Parallel)
Number of studies (number of participants)	1 (n=157)
Countries and setting	Conducted in Hong Kong (China)
Line of therapy	Unclear
Duration of study	Intervention time: 6 months
Method of assessment of guideline condition	Method of assessment/diagnosis not stated: Chronic lung disease
Stratum	Overall
Subgroup analysis within study	Not applicable
Inclusion criteria	Age 60 or older; resident locally; at least 1 hospital admission for chronic lung disease in last 6 months
Exclusion criteria	Communication problems (for example,. Abbreviated Mental Test Score <6/10, dialect, deafness, dysphasia); without family caregivers; institutional care; terminal disease with life expectancy <6 months
Recruitment/selection of patients	Recruited from medical wards of Prince of Wales Hospital (major teaching hospital) and another acute district general hospital (Alice Ho Miu Ling Methersole Hospital)
Age, gender and ethnicity	Age - Mean (SD): Intervention: 75.3 (7.0); control 74.2 (5.7) years. Gender (M:F): 111:46. Ethnicity: Not stated

Study	Kwok 2004[84]
Further population details	1. Frail elderly: Frail elderly (Mean GHQ score 7.5).
Indirectness of population	No indirectness
Interventions	(n=77) Intervention 1: Community matron or Nurse-led care. Community nurse (CN) visited patient before discharge to provide health counselling (for example,. drug compliance, inhaler technique, dietary advice for the undernourished) and encourage patient to contact CN via telephone hotline when they developed medical problems. Visited at home within 7 days of discharge to review condition, environmental hazards and support; give health counselling (drug/diet regimen, home modifications, encourage physical exercises prescribed by hospital physio); psychosocial support to patient and caregivers; arrange social and health services when required; encourage use of hotline for example,. for purulent sputum or ankle oedema. Weekly home visits for 4 weeks and monthly to 6 months to monitor health, reinforce health counselling, encourage use of hotline. CN had direct access to geriatrician or respiratory physician in hospital; could alter medications and arrange urgent outpatient appointments or admissions. If readmitted, CNs visited and provided information to attending doctors.. Duration 6 months. Concurrent medication/care: Not stated (n=80) Intervention 2: Usual Care. The same group of geriatricians/respiratory physicians followed patients up as outpatients. The attending physicians were free to refer the subjects to CNs for post-discharge home visits but this was not common and seldom involved more than 1 visit. Duration 6 months. Concurrent medication/care: Not stated
Funding	Academic or government funding (Health Services Research Committee/Health Care and Promotion Fund)
RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: COMMUNITY MATRON OR NURSE-LED CARE versus USUAL CARE Protocol outcome 1: Length of hospital stay at during study period - Actual outcome: Total hospital days at 6 months; Group 1: mean 20.3 Days (SD 25.3); n=70, Group 2: mean 19.2 Days (SD 25.6); n=79; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness ; Baseline details: Lower handicap in mobility in intervention group (2.7 [0.7] vs. 3.0 [0.6], p=0.026); Group 1 Number missing: 7, Reason: 3 declined CN visits, 2 moved away, 2 had lung cancer; Group 2 Number missing: 1, Reason: 1 had lung cancer Protocol outcome 2: Mortality at during study period - Actual outcome: Died at 6 months; Group 1: 3/77, Group 2: 6/80; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness ; Baseline details: Lower handicap in mobility in intervention group (2.7 [0.7] vs. 3.0 [0.6], p=0.026); Group 1 Number missing: ; Group 2 Number missing: Protocol outcome 3: Number of presentations to Emergency Department at during study period - Actual outcome: A&E visits at 6 months; Group 1: mean 2.2 (SD 2.4); n=70, Group 2: mean 2.3 (SD 3.1); n=79; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness ;	

Study	Kwok 2004[84]
Baseline details: Lower handicap in mobility in intervention group (2.7 [0.7] vs. 3.0 [0.6], p=0.026); Group 1 Number missing: 7, Reason: 3 declined CN visits, 2 moved away, 2 had lung cancer; Group 2 Number missing: 1, Reason: 1 had lung cancer Protocol outcome 4: Number of admissions to hospital at After 28 days of first admission - Actual outcome: Readmission at 6 months; Group 1: 53/70, Group 2: 49/79; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness ; Baseline details: Lower handicap in mobility in intervention group (2.7 [0.7] vs. 3.0 [0.6], p=0.026); Group 1 Number missing: 7, Reason: 3 declined CN visits, 2 moved away, 2 had lung cancer; Group 2 Number missing: 1, Reason: 1 had lung cancer - Actual outcome: Readmission at 6 months; Group 1: mean 1.5 (SD 1.4); n=70, Group 2: mean 1.5 (SD 2.2); n=79; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness ; Baseline details: Lower handicap in mobility in intervention group (2.7 [0.7] vs. 3.0 [0.6], p=0.026); Group 1 Number missing: 7, Reason: 3 declined CN visits, 2 moved away, 2 had lung cancer; Group 2 Number missing: 1, Reason: 1 had lung cancer	
Protocol outcomes not reported by the study	Quality of life at during study period; Patient and/or carer satisfaction at during study period; Number of GP presentations at during study period; Readmission up to 30 days; Length of stay in programme at during study period; Avoidable adverse events at during study period

Study	Leventhal 2011[88]
Study type	RCT (Patient randomised; Parallel)
Number of studies (number of participants)	1 (n=42)
Countries and setting	Conducted in Switzerland; Setting: University Hospital of Basel, Switzerland
Line of therapy	Not applicable
Duration of study	Intervention time: 12 months
Method of assessment of guideline condition	Adequate method of assessment/diagnosis
Stratum	Overall
Subgroup analysis within study	Not applicable
Inclusion criteria	Adult patients hospitalised with decompensated HF (NYHA II–IV), irrespective of left-ventricular ejection fraction, and a brain natriuretic peptide (BNP) ≥100 pg/ml. Additional inclusion criteria were: a history of dyspnoea, increased fatigue or weakness, the ability to speak German and to comprehend a telephone conversation, and discharge to a home setting.
Exclusion criteria	Excluded were those who had had an acute myocardial infarction within 8 weeks prior to inclusion (Creatine Kinase (CK) >2x normal), severe myocardial or valvular obstructive disease or uncontrolled angina pectoris (Canadian

Study	Leventhal 2011[88]
	Cardiovascular Society Functional Classification of Angina (CCS) >3), those who had co-morbid conditions compromising prognosis (life expectancy of less than 12 months), those who had planned (except heart transplantation) or had had previous cardiac surgery within 3 months, those who were on dialysis, had unstable psychiatric disorders or substance abuse, had cognitive impairment (Mini-Mental State Examination score <24), or those who were enrolled in another study, or refused to sign an informed consent.
Recruitment/selection of patients	During the study's 20-month enrolment period (July 2003-February 2005), eligible patients were identified through bi-weekly screening of all patients admitted to the internal medicine departments of a university hospital due to dyspnoea.
Age, gender and ethnicity	Age - Mean (SD): 77 (6.5) years. Gender (M: F): Define. Ethnicity: Not reported
Further population details	1. Frail elderly: Frail elderly (Mean years of participants: 77 (6.5)).
Indirectness of population	No indirectness
Interventions	(n=22) Intervention 1: Community matron or Nurse-led care. Once patients were discharged to home, the intervention began as an ambulatory care programme. Intervention patients received 1 home visit by a specialised HF nurse approximately 1 week after returning home after discharge from either hospitalisation or rehabilitation, followed by 17 telephone calls in decreasing intervals over the next 12 months. The home visit consisted of a physical, psychosocial and environmental assessment, the provision of educational, behavioural, and supportive care to build self-care abilities, and individualised patient goal-setting to increase self-efficacy. All intervention group patients were given a special kit published by the Swiss Heart Foundation that included in-depth explanations of HF and self-care procedures. Following the home visit, an individualised nursing care plan was developed that included the patient-identified goals and the goals that the nurse identified based on the results of the assessments. This plan was then discussed with the primary care physician to elicit his/her support and to coordinate and prioritise goals. Follow up telephone calls included discussions of questions or problems the patients had due to their HF, identification of signs and symptoms signifying possible decompensation of HF, review of current medications, reinforcement of self-care activities and setting new goals.. Duration 12 months. Concurrent medication/care: All patients received similar care during hospitalisation. This consisted of the normal medical and nursing care provided by hospital staff. In addition, all study patients were examined by the study HF-cardiologist who recommended lifestyle modifications to the patients and made suggestions for optimal medical management to the patient's primary care physician. All patients were given a HF education booklet published by the Swiss Heart Foundation. (n=20) Intervention 2: Usual care. Following hospitalisation, medical care was provided by the primary care physician. . Duration 12 months. Concurrent medication/care: All patients received similar care during hospitalisation. This consisted of the normal medical and nursing care provided by hospital staff. In addition, all study patients were examined by the study HF-cardiologist who recommended lifestyle modifications to the patients and made

Study	Leventhal 2011[88]
	suggestions for optimal medical management to the patient's primary care physician. All patients were given a HF education booklet published by the Swiss Heart Foundation.
Funding	Academic or government funding (Funding from the Swiss National Foundation and the Swiss Heart Foundation)
RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: NURSE-LED INTERDISCIPLINARY MANAGEMENT PROGRAMME versus USUAL CARE Protocol outcome 1: Mortality at during study period - Actual outcome: Mortality at 12 months; Group 1: 2/22, Group 2: 4/20; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness	
Protocol outcomes not reported by the study	Quality of life at during study period; Avoidable adverse events at during study period; Patient and/or carer satisfaction at during study period; Number of presentations to Emergency Department at during study period; Number of admissions to hospital at After 28 days of first admission; Number of GP presentations at during study period; Readmission up to 30 days; Length of hospital stay at during study period

Study	District nurse-led high support hospital discharge team trial: Martin 1994[93]
Study type	RCT (Patient randomised; Parallel)
Number of studies (number of participants)	1 (n=54)
Countries and setting	Conducted in United Kingdom; Setting: Recruitment from June 1989 to February 1990. It says 'our unit' but does not mention where that unit is. Authors address: Elderly Care Unit, St. Thomas Hospital London
Line of therapy	1st line
Duration of study	Intervention + follow up: 1 year but main outcomes reported at 6 and 12 weeks
Method of assessment of guideline condition	Unclear method of assessment/diagnosis
Stratum	Overall
Subgroup analysis within study	Not applicable
Inclusion criteria	Not specified. But deduced from description of intervention group: patients who, after acute medical treatment and rehabilitation, were thought still to be at risk of failing to manage at home with the usual community services, but likely to manage with these services after recovery within 6 weeks
Exclusion criteria	Patients who needed 2 people to assist in transferring to or from bed, chair or commode
Recruitment/selection of patients	Not specified. patients who, after acute medical treatment and rehabilitation, were thought still to be at risk of failing

Study	District nurse-led high support hospital discharge team trial: Martin 1994[93]
	to manage at home with the usual community services, but likely to manage with these services after recovery within 6 weeks
Age, gender and ethnicity	Age - Mean (SD): 81.7 (9.0). Gender (M:F): 4/1. Ethnicity: not reported
Further population details	-
Extra comments	all participants are frail elderly so did not select this option for subgroups
Indirectness of population	No indirectness
Interventions	(n=29) Intervention 1: Community matron or Nurse-led care. The home treatment team (HTT) comprised a Nurse Manager (a qualified district nurse) and ten unqualified health care assistants, trained to perform the tasks usually associated with the roles of auxiliary nurse, home help, and therapy aide. The Ward teams and HTT nurse manager prepared a care plan for each patient, frequently using a home visit to identify the objectives for rehabilitation at home. Discharge generally took place within 1 week of referral. The HTT worker visited the patient up to 3x/day for up to 6 weeks (for example,. personal care, domestic assistance). No night service. Weekly review of progress. Team withdrew at 6 weeks or earlier if patient could manage with conventional community services such as home care, district nursing, day care etc. Patients with medical problems turned to their GP, but team had also access to the hospital Elderly Care Unit. Duration intervention for 6 weeks; trial 12 months; clinical assessments at 6 (only half sample) and 12 weeks (full sample). Concurrent medication/care: not mentioned (n=25) Intervention 2: Usual Care. no information given other than 'appropriate conventional community services'. Duration not mentioned how long they received usual care; 12 month trial; clinical assessments at 6 (half sample) and 12 weeks (full sample). Concurrent medication/care: not reported
Funding	Funding not stated
RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: COMMUNITY MATRON OR NURSE-LED CARE versus USUAL CARE Protocol outcome 1: Mortality at during study period - Actual outcome: Mortality at 12 weeks; Group 1: 3/29, Group 2: 3/25; Risk of bias: All domain - Low, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: no indirectness; Baseline details: intervention group somewhat more independent. Does not mention how the 'randomly numbered sealed envelopes' were distributed; Group 1 Number missing: 0; Group 2 Number missing: 0 Protocol outcome 2: Number of admissions to hospital at After 28 days of first admission - Actual outcome: Readmissions (but mix of admissions and readmissions as per our definition=admissions) at 12 weeks; Group 1: 5/29, Group 2: 5/25; Risk of bias: All domain - High, Selection - High, Blinding - High, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - High, Crossover - Low; Indirectness of outcome: Serious indirectness, Comments: mix of admissions and readmissions as per our definition of admissions; Baseline details: intervention group somewhat	

Study	District nurse-led high support hospital discharge team trial: Martin 1994[93]
more independent. Does not mention how the 'randomly numbered sealed envelopes' were distributed; Group 1 Number missing: 0; Group 2 Number missing: 0	
Protocol outcomes not reported by the study	Quality of life at during study period; Avoidable adverse events at during study period; Patient and/or carer satisfaction at during study period; Number of presentations to Emergency Department at during study period; Number of GP presentations at during study period; Readmission up to 30 days; Length of stay in programme at during study period; Length of hospital stay at during study period

1

Study	Rea 2004[115]
Study type	RCT (randomised; Parallel)
Number of studies (number of participants)	1 (n=135)
Countries and setting	Conducted in New Zealand; Setting: Primary care
Line of therapy	Unclear
Duration of study	Intervention time: 12 months
Method of assessment of guideline condition	Method of assessment/diagnosis not stated: COPD
Stratum	Overall
Subgroup analysis within study	Not applicable
Inclusion criteria	Moderate to severe COPD
Exclusion criteria	Patient exclusion criteria: Chronic asthma, bronchiectasis, comorbidity more significant than COPD, unable to give informed consent, prognosis <12 months, long-term oxygen therapy or too unwell, deceased. GP practice exclusion criteria: no longer enrolled with participating GP or moved out of area, unable to contact patient, insufficient practice nurse resource.
Recruitment/selection of patients	Hospital admission records searched for diagnosis of COPD by ICD-9-CM codes and GP records for a clinical diagnosis of moderate to severe COPD.
Age, gender and ethnicity	Age - Mean (range): 68 (44-84) years. Gender (M:F): 56:79. Ethnicity: Not stated
Further population details	1. Frail elderly: Frail elderly (80% eligible for subsidised health care because of low household income; mean 2.3 comorbidities).
Extra comments	GP practices randomised rather than individual patients.
Indirectness of population	No indirectness
Interventions	(n=83) Intervention 1: Community matron or Nurse-led care. Chronic disease management programme implemented

Study	Rea 2004[115]
	by patient's usual GP and practice nurse. Respiratory physician and respiratory nurse specialist saw patients during assessment and patient-specific care plan negotiated with each patient by GP and practice nurse, comprising a timetable for regular maintenance checks and achievable goals for lifestyle changes; action plan with advice on managing worsening symptoms; when to call GP and self-management options; education about smoking cessation, medication and use of inhalers; annual flu vaccination and attendance at pulmonary rehabilitation programme were recommended. Patients visited practice nurse monthly to review progress and visited GP 3-monthly and if symptoms worsened. Respiratory nurse specialist provided professional support for practice nurse and links into specialist and other secondary care resources. At least 1 home visit by respiratory nurse specialist and 1 following hospital admission (most practice nurses unable to visit patients at home). When patients presented to hospital, a locator alert system advised the project respiratory nurse specialist who visited the patient. Practice notified of admissions and involved in discharge planning. . Duration 12 months. Concurrent medication/care: Not stated (n=52) Intervention 2: Usual Care. Patients had same assessment but did not have a care plan, were not seen by respiratory physician during assessment and did not have access to project respiratory nurse specialist. GPs had access to COPD management guidelines and pulmonary rehabilitation programme.. Duration 12 months. Concurrent medication/care: Not stated
Funding	Academic or government funding (Health Funding Authority, South Auckland Health, South-Med Ltd, ProCare Health Lts and First Health Ltd)
RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: COMMUNITY MATRON OR NURSE-LED CARE versus USUAL CARE Protocol outcome 1: Quality of life at during study period - Actual outcome: SF-36 Physical functioning at 12 months; Risk of bias: All domain - Very high, Selection - High, Blinding - High, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness ; Group 1 Number missing: 12, Reason: 2 died, 5 withdrew, 3 disqualified (lung cancer), 2 moved away; Group 2 Number missing: 6, Reason: 4 died, 1 withdrew, 1 disqualified (lung cancer) - Actual outcome: SF-36 Role physical at 12 months; Risk of bias: All domain - Very high, Selection - High, Blinding - High, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness ; Group 1 Number missing: 12, Reason: 2 died, 5 withdrew, 3 disqualified (lung cancer), 2 moved away; Group 2 Number missing: 6, Reason: 4 died, 1 withdrew, 1 disqualified (lung cancer) - Actual outcome: SF-36 Bodily pain at 12 months; Risk of bias: All domain - Very high, Selection - High, Blinding - High, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness ; Group 1 Number missing: 12, Reason: 2 died, 5 withdrew, 3 disqualified (lung cancer), 2 moved away; Group 2 Number missing: 6, Reason: 4 died, 1 withdrew, 1 disqualified (lung cancer) - Actual outcome: SF-36 Social limitations at 12 months; Risk of bias: All domain - Very high, Selection - High, Blinding - High, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness ; Group 1 Number missing: 12, Reason: 2 died, 5	

Study	Rea 2004[115]
withdrew, 3 disqualified (lung cancer), 2 moved away; Group 2 Number missing: 6, Reason: 4 died, 1 withdrew, 1 disqualified (lung cancer) - Actual outcome: SF-36 Mental health domain at 12 months; Risk of bias: All domain - Very high, Selection - High, Blinding - High, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness ; Group 1 Number missing: 12, Reason: 2 died, 5 withdrew, 3 disqualified (lung cancer), 2 moved away; Group 2 Number missing: 6, Reason: 4 died, 1 withdrew, 1 disqualified (lung cancer)- Actual outcome: SF-36 Role emotional at 12 months; Risk of bias: All domain - Very high, Selection - High, Blinding - High, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness ; Group 1 Number missing: 12, Reason: 2 died, 5 withdrew, 3 disqualified (lung cancer), 2 moved away; Group 2 Number missing: 6, Reason: 4 died, 1 withdrew, 1 disqualified (lung cancer) - Actual outcome: SF-36 Vitality at 12 months; Risk of bias: All domain - Very high, Selection - High, Blinding - High, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness ; Group 1 Number missing: 12, Reason: 2 died, 5 withdrew, 3 disqualified (lung cancer), 2 moved away; Group 2 Number missing: 6, Reason: 4 died, 1 withdrew, 1 disqualified (lung cancer) - Actual outcome: SF-36 General health at 12 months; Risk of bias: All domain - Very high, Selection - High, Blinding - High, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness ; Group 1 Number missing: 12, Reason: 2 died, 5 withdrew, 3 disqualified (lung cancer), 2 moved away; Group 2 Number missing: 6, Reason: 4 died, 1 withdrew, 1 disqualified (lung cancer) Protocol outcome 2: Mortality at during study period - Actual outcome: Died at 12 months; Group 1: 2/83, Group 2: 4/52; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness Protocol outcome 3: Number of presentations to Emergency Department at during study period - Actual outcome: Presentations to ED at 12 months; Group 1: 5/83, Group 2: 7/52; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness Protocol outcome 4: Number of admissions to hospital at After 28 days of first admission - Actual outcome: Readmitted at 12 months; Group 1: 29/83, Group 2: 26/52; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness	
Protocol outcomes not reported by the study	Patient and/or carer satisfaction at during study period; Number of GP presentations at during study period; Readmission up to 30 days; Length of stay in programme at during study period; Avoidable adverse events at during study period

Study	Sinclair 2005{SINCLAIR2005}

Study type	RCT (Patient randomised; Parallel)
Number of studies (number of participants)	1 (n=324)
Countries and setting	Conducted in United Kingdom; Setting: Three district general hospitals in the Birmingham area.
Line of therapy	Not applicable
Duration of study	Intervention time: 1-2 and 6-8 weeks
Method of assessment of guideline condition	Adequate method of assessment/diagnosis
Stratum	Overall
Subgroup analysis within study	Not applicable
Inclusion criteria	Patients aged 65 years or over admitted to coronary care units, general or geriatric medical wards with a suspected myocardial infarction (MI) were eligible to participate if ward staff judged them likely to be discharged home soon
Exclusion criteria	A discharge address outside the hospital catchment area, discharge home before baseline assessments and randomisation could be completed, or failure to obtain written consent.
Recruitment/selection of patients	Patients aged 65 years or over admitted to coronary care units, general or geriatric medical wards with suspected MI.
Age, gender and ethnicity	Age - --: Patients aged over 65 years (no further details reported). Gender (M:F): No details reported. Ethnicity: Not reported
Further population details	1. Frail elderly: Frail elderly (People aged 65 years and over).
Indirectness of population	No indirectness
Interventions	(n=163) Intervention 1: Community matron or Nurse-led care. In addition to usual post-discharge care, patients allocated to the home-based intervention group received at least two home visits after hospital discharge by a cardiac support nurse. Extra visits and telephone contacts were permissible if the nurse identified a specific need and purpose.

	The support nurse was trained in cardiac support. Her remit was broad but specifically she (1) encouraged patients to comply with and have knowledge of their treatment regimen; (2) offered information, support and guidance about risk factor reduction; (3) advised about appropriate exercise and stress management; (4) gave advice on smoking cessation, alcohol intake and diet; (5) encouraged resumption of everyday activities and social interaction. . Duration 1-2 and 6-8 weeks. Concurrent medication/care: Usual post-discharge care - general advice from ward-based staff, outpatient clinic follow-up as necessary and access to the local cardiac rehabilitation programme offered as per usual practice. (n=161) Intervention 2: Usual care. Usual post-discharge care - general advice from ward-based staff, outpatient clinic followup-up as necessary and access to the local rehabilitation programme offered as per usual practice. Duration 1-2 and 6-8 weeks. Concurrent medication/care: N/A
Funding	Study funded by industry (West Midlands Research and Development Programme 1995/1996)

RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: COMMUNITY MATRON OR NURSE-LED CARE versus USUAL CARE

Protocol outcome 1: Quality of life at during study period
- Actual outcome: Quality of Life after Myocardial Infarction at 100 days; Group 1: mean 130.1 (SD 34.6); n=134, Group 2: mean 121.7 (SD 36.1); n=133; Quality of Life after Myocardial Infarction Questionnaire 27-189 Top=High is good outcome
Risk of bias: All domain - High, Selection - Low, Blinding - High, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low;
Indirectness of outcome: No indirectness ; Group 1 Number missing: 29; Group 2 Number missing: 28

Protocol outcome 2: Length of hospital stay at during study period
- Actual outcome: Length of stay in hospital at Discharge to 100 days; Group 1: mean 2.9 (SD 1.2); n=163, Group 2: mean 4.6 (SD 2.2); n=161
Risk of bias: All domain - High, Selection - Low, Blinding - High, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low;
Indirectness of outcome: No indirectness ; Group 1 Number missing: 0; Group 2 Number missing: 0

Protocol outcome 3: Mortality at during study period
- Actual outcome: Mortality (from supplementary data online) at 100 days; Group 1: 14/163, Group 2: 15/161
Risk of bias: All domain - High, Selection - Low, Blinding - High, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low;
Indirectness of outcome: No indirectness ; Group 1 Number missing: 0; Group 2 Number missing: 0

Protocol outcomes not reported by the study	Patient and/ or carer satisfaction at during study period; Number of presentations to Emergency Department at during study period; Number of admissions to hospital at After 28 days of first admission; Number of GP presentations at during study period; Readmission at 7 and 28 days; Avoidable adverse events at during study period

Study	**Sridhar 2008[124]**
Study type	RCT (Patient randomised; Parallel)
Number of studies (number of participants)	1 (n=122)
Countries and setting	Conducted in United Kingdom; Setting: Charing Cross and Hammersmith Hospitals, London
Line of therapy	Not applicable
Duration of study	Intervention time: 2 years
Method of assessment of guideline condition	Adequate method of assessment/diagnosis
Stratum	Overall
Subgroup analysis within study	Not applicable
Inclusion criteria	Patients with acute exacerbation of COPD. The clinical notes of these patients were reviewed by the investigators using a proforma. If thought to represent a suitable patient, the case notes were discussed and, where necessary, further information obtained.
Exclusion criteria	Exclusion criteria included significant comorbidity such as severe heart disease or cancer, or any condition that would preclude participation in the physical therapy component of a pulmonary rehabilitation programme.
Recruitment/selection of patients	People who had been admitted to Charing Cross and Hammersmith Hospitals, London, UK, between 1 January 2000 and 31 August 2004 with the main reason for admission being coded on discharge as having been due to an acute exacerbation of COPD was obtained from the hospital database
Age, gender and ethnicity	Age - Mean (range): 69.68-69.9. Gender (M:F): 1/1. Ethnicity: Not reported
Further population details	-
Indirectness of population	No indirectness

Study	Sridhar 2008[124]
Interventions	(n=61) Intervention 1: Community matron or Nurse-led care. Those in the intervention group had monthly telephone calls from the respiratory nurses and a home visit every 3 months. During each interview and visit, the nurses undertook a structured approach to history taking and during home visits measured pulse and respiratory rate, oxygen saturation and end-tidal carbon monoxide. Spirometry was performed at baseline and after 12 and 24 months. During both telephone and home visits, they reinforced advice regarding treatments, smoking cessation if relevant, the need to continue their exercise therapy and discussed and reinforced the self-management education which had been given and offered encouragement for successful self-treatment. The patients were also given written advice about the treatment of COPD which they were asked to show to their doctor if they underwent any unscheduled healthcare. Duration 2 years. Concurrent medication/care: The study intervention involved all patients initially participating in a hospital based pulmonary rehabilitation programme consisting of 2 attendances per week for 4 weeks. During this visit, the patients received general education about their disease and its treatment (1 h per session) and underwent an individualised physical training programme (1 h per session). Following completion of the pulmonary rehabilitation programme, the patients received a baseline home visit by a specialist respiratory nurse, and during this first visit, the patients were given a personalised written COPD action plan. This contained both lifestyle advice and advice about their usual medication, and gave specific advice about when the patient should start a course of antibiotics and when they should start a course of steroid tablets. The general practitioners of these patients were requested to provide for the patient reserve supplies of these medications. Patients in both the control and intervention groups had their use of healthcare monitored by monthly telephone self-report verified by confirmation of the general practice and hospital records. (n=61) Intervention 2: Usual care. Patients in the control group received usual care from their primary care physician, or secondary care and/or the respiratory nursing service as appropriate. Duration 2 years. Concurrent medication/care: Patients in both the control and intervention groups had their use of healthcare monitored by monthly telephone self-report verified by confirmation of the general practice and hospital records.
Funding	Academic or government funding (The Health Foundation)
RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: COMMUNITY MATRON OR NURSE-LED CARE versus USUAL CARE Protocol outcome 1: Number of GP presentations at during study period - Actual outcome: Care received from primary care doctors at 2 years; Group 1: 31/61, Group 2: 36/61; Risk of bias: All domain - Very high, Selection - High, Blinding - High, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: no indirectness	
Protocol outcomes not reported by the study	Quality of life at during study period; Mortality at during study period; Avoidable adverse events at during study period; Patient and/or carer satisfaction at during study period; Number of presentations to Emergency Department at during study period; Number of admissions to hospital at After 28 days of first admission; Readmission up to 30

Study	Sridhar 2008[124]
	days; Length of hospital stay at during study period

1

Study	STEWART 1998[128] STEWART 1999[127]
Study type	RCT (Patient randomised; Parallel)
Number of participants	Home based intervention = 49 Usual care = 48 (n = 97)
Countries and setting	Cardiology Unit of the Queen Elizabeth Hospital/University of Adelaide, Woodville, South Australia.
Duration of study	6 month follow up
Stratum	Overall
Subgroup analysis within study	
Inclusion criteria	Presence of CHF (defined on the basis of a formal demonstration, impaired systolic function and persistent functional impairment indicative of New York Heart Association class 2, 3 or 4 statuses. Acute ischemia or infarction with previously documented CHF were included Being discharged home and requiring continuous pharmaco therapeutic intervention for a chronic condition Patients with CHF who were determined to be at high risk for unplanned readmission were identified on the basis of 1 or more unplanned admissions for acute heart failure before study entry
Exclusion criteria	Acute MI or unstable angina pectoris Presence of terminal malignancy requiring palliative care Home address outside catchment area
Recruitment/selection of patients	-
Age, gender and ethnicity	Age Years (SD); Intervention: 76 years (+/-11). Control: 74 years (+/-10) Gender M:F; Intervention: 22:27. Control: 25:23 Ethnicity (Non-English speaking background) Intervention: 10/49. Control: 9/48

Study	STEWART 1998[128] STEWART 1999[127]
Further population details	-
Extra comments	-
Indirectness of population	No indirectness
Interventions	Home Based Intervention: Before discharge, patients assigned to an HBI (n=49) were visited by the study nurse (S.P.) and counselled in relation to complying with the treatment regimen and reporting any sign of clinical deterioration or acute worsening of their heart failure. One week after discharge, these patients were visited at home by the study nurse and pharmacist. On arrival, the study pharmacist performed an assessment of the patient's knowledge of the prescribed medications (via questionnaire) and the extent of compliance (via pill count). Patients who demonstrated poor medication knowledge (<75% composite knowledge score of dosage, intended effect, potential adverse effects, and special instructions) or malcompliance (≥15% deviation from prescribed dosage at discharge) received a combination of the following: (1) remedial counselling, (2) initiation of a daily reminder routine to enhance timely administration of medications, (3) introduction of a weekly medication container enabling pre-distribution of dosages, (4) incremental monitoring by caregivers, (5) provision of a medication information and reminder card, and (6) referral to a community pharmacist for more regular review thereafter. Patients were further evaluated by the study nurse to detect any clinical deterioration or adverse effects of prescribed medication since discharge; those requiring medical review were immediately referred to their primary care physician. After the home visit, all patients' primary care physicians were contacted by the study nurse to inform them of the home visit and to discuss the need (if any) for further remedial action or more intensive follow-up thereafter. Usual Care: Patients assigned to the UC group (n=48) received the pre-existing levels of post discharge care: all patients in the UC group had appointments to be reviewed by their primary care physician or cardiologist (in the hospital's outpatient department) within 2 weeks of discharge. Furthermore, 13 patients (27%) were receiving regular home support (for example, domiciliary care or community nurse visits) after discharge.
Funding	Commonwealth Department of Health and Family Services, Canberra, Australia, through the Pharmaceutical Education Program
RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: HOSPITAL AT HOME (PRIMARY CARE) versus INPATIENT HOSPITAL CARE Protocol outcome 1: Readmission - Actual outcome: Unplanned Readmission rates; Intervention group: 24/49 readmissions; Control group: 31/48 readmissions; . Risk of bias : Selection - Low, Outcome reporting - high, other-unclear risk Protocol outcome 2: Mortality - Actual outcome: Out of hospital deaths; Intervention group: 6/49; Control group: 12/48; . Risk of bias : Selection - Low, Outcome reporting - high, other-unclear risk	
Protocol outcomes not reported by the study	Avoidable adverse events, quality of life, patient and or carer satisfaction. Length of stay, number of presentations of ED, number of avoidable admissions, reduced GP presentations

Study	Tsuchihashi-makaya 2013[135]
Study type	RCT (Patient randomised; Parallel)
Number of studies (number of participants)	1 (n=168)
Countries and setting	Conducted in Japan; Setting: 3 cardiology hospitals in Hokkaido, Japan
Line of therapy	Not applicable
Duration of study	Intervention time: 2 months
Method of assessment of guideline condition	Adequate method of assessment/diagnosis
Stratum	Overall
Subgroup analysis within study	Not applicable
Inclusion criteria	Define
Exclusion criteria	Define
Recruitment/selection of patients	Patients were enrolled from December 2007 to March 2010 at 3 cardiology hospitals in Hokkaido, Japan. Hospitals were selected on the basis of their organizational capability and enthusiasm for participating in the study.
Age, gender and ethnicity	Age - Mean (range): 75.8-76.9 years. Gender (M:F): Define. Ethnicity: Not reported
Further population details	-
Extra comments	Etiology of HF: Ischemic 27.4%, hypertensive 30.5%, valvular 28.6%, cardiomyopathic 27.3%, unknown 4.4%, other 16.2%
Indirectness of population	No indirectness
Interventions	(n=84) Intervention 1: Community matron or Nurse-led care. A home-based disease management program consisted of home visit by nurses to provide symptom monitoring, education, and counselling, and telephone follow-up by nurses in addition to routine follow-up by cardiologists. A home visit was made within 14 days after discharge from hospital. Nurses visited each patient's home to assess how the patient was coping in the home environment, HF status, general health status, adherence to medication, lifestyle modification, daily activity, and social support needs. Home visits were made once every 2 weeks until 2 months after discharge. Nurses monitored HF symptoms, patient's general health status, and requirement for other health and social support. Nurses consulted a multidisciplinary team during the intervention period to optimize the advice given to each patient. . Duration 2 months. Concurrent medication/care: All enrolled patients received comprehensive discharge education by cardiologist, nurse, dietitian, and pharmacist using a booklet that provided information on pathophysiology, medical treatment, diet, physical activity, lifestyle modification, self-measurement of body weight, self-monitoring of

Study	Tsuchihashi-makaya 2013[135]
	worsening HF, and emergency contact methods. Follow-up assessments were performed 2, 6, and 12 months after discharge. After 2 months of home visits, nurses the conducted telephone follow-up until 6 months after discharge. (n=84) Intervention 2: Usual care. Patients in the usual-care group received usual care and follow-up. After hospital discharge, patients assigned to the usual-care group continued to receive routine management by the cardiologist. No extra follow-up by a HF nurse or multidisciplinary team was provided. . Duration 2 months. Concurrent medication/care: All enrolled patients received comprehensive discharge education by cardiologist, nurse, dietitian, and pharmacist using a booklet that provided information on pathophysiology, medical treatment, diet, physical activity, lifestyle modification, self-measurement of body weight, self-monitoring of worsening HF, and emergency contact methods. Follow-up assessments were performed 2, 6, and 12 months after discharge.
Funding	Academic or government funding (Grants from the Japanese Ministry of Health, Labour and Welfare, the Japan Heart Foundation, and Pfizer Health Research Foundation)
RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: COMMUNITY MATRON OR NURSE-LED CARE versus USUAL CARE Protocol outcome 1: Mortality at during study period - Actual outcome: Mortality at 2 months; Group 1: 8/79, Group 2: 8/82; Risk of bias: All domain - Very high, Selection - High, Blinding - High, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ; Group 1 Number missing: 5, Reason: Lost to follow-up, discontinued due to cognitive impairment, died before hospital discharge; Group 2 Number missing: 2, Reason: Lost to follow-up, died before hospital discharge Protocol outcome 2: Number of admissions to hospital at After 28 days of first admission - Actual outcome: Hospitalisation for heart failure at 2 months; Group 1: 16/79, Group 2: 28/82; Risk of bias: All domain - Very high, Selection - High, Blinding - High, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ; Group 1 Number missing: 5, Reason: Lost to follow-up, discontinued due to cognitive impairment, died before hospital discharge; Group 2 Number missing: 2, Reason: Lost to follow-up, died before hospital discharge	
Protocol outcomes not reported by the study	Quality of life at during study period; Avoidable adverse events at during study period; Patient and/or carer satisfaction at during study period; Number of presentations to Emergency Department at during study period; Number of GP presentations at during study period; Readmission up to 30 days; Length of hospital stay at during study period

1

Study	Can home visits by community nurse reduce readmissions? trial: Wong 2008[144]

Study	Can home visits by community nurse reduce readmissions? trial: Wong 2008[144]
Study type	RCT (Patient randomised; Parallel)
Number of studies (number of participants)	1 (n=354)
Countries and setting	Conducted in Hong Kong (China); Setting: Medical departments of 3 regional hospitals in Hong Kong between January 2003 to December 2005, with an interruption during the Severe Acute Respiratory Syndrome (SARS) epidemic from March to December 2003.
Line of therapy	1st line
Duration of study	Intervention + follow up: 30 days after discharge
Method of assessment of guideline condition	Adequate method of assessment/diagnosis
Stratum	Overall
Subgroup analysis within study	Not applicable
Inclusion criteria	Patients admitted more than once during the last 28 days to the same hospital; a discharge diagnostic coding in defined categories related to respiratory, cardiac, renal conditions and general symptoms; able to speak Cantonese; living within the hospital service area
Exclusion criteria	discharged to another hospital setting; dying
Recruitment/selection of patients	Patients readmitted to the medical departments of 3 regional hospitals in Hong Kong. Selection criteria followed the definition of 'unplanned readmission' (readmission to the same hospital within 28 days of discharge).
Age, gender and ethnicity	Age - Mean (SD): intervention 72.5 years (10.0); control 68.4 years (13.8). Gender (M:F): 1/1. Ethnicity: not specifically mentioned but assume Chinese/Hong Kong as inclusion criteria was to be able to speak Cantonese
Further population details	-
Extra comments	Data on age, gender and disease category were collected from hospital records. Other data were obtained from initial interview with the patient.
Indirectness of population	No indirectness
Interventions	(n=173) Intervention 1: Community matron or Nurse-led care. Patients in intervention group received routine discharge care as well as the post-discharge home visit intervention. The intervention was protocol-driven. Before discharge, the community nurses conducted an initial assessment and explained the home visits. The first home visit occurred within 7 days of discharge from the hospital, following through the health concerns identified in the initial assessment. Both assessment and intervention scheme were based on the Omaha system which has 4 dimensions: environmental, psychosocial, physiological and health-related behaviours. It involved: health teaching and counselling, treatment, and procedures, case management and surveillance. The community nurse identified health problems and then intervened. The case would be closed if the health problems were resolved, and a maximum of 4

Study	Can home visits by community nurse reduce readmissions? trial: Wong 2008[144]
	home visits could be arranged within 28 days after discharge. Patients were referred back to hospital for follow-up if health problems did not resolve. All nurses were experienced and registered community nurses.. Duration 28 days after discharge. Concurrent medication/care: Patients in intervention group also received routine discharge care which included instructions about medications, basic health advice related to patient's conditions and arrangements for outpatients follow-up. (n=181) Intervention 2: Usual Care. Routine discharge care which included instructions about medications, basic health advice related to patient's conditions and arrangements for outpatients follow-up. . Duration not specified but study follow-up was 30 days post-discharge. Concurrent medication/care: n/a
Funding	Academic or government funding
RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: COMMUNITY MATRON OR NURSE-LED CARE versus USUAL CARE Protocol outcome 1: Patient and/or carer satisfaction at during study period - Actual outcome: Satisfaction with care (5 point-likert scale; 1 very satisfied, 5 very unsatisfied) at 30 days post-discharge; Group 1: mean 1.7 Likert Scale 1= very satisfied, 5 very unsatisfied (SD 0.6); n=166, Risk of bias: All domain - High, Selection - High, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ; Baseline details: 'computer-generated random numbers'; intervention group contained statistically significant older patients and retirees; Group 1 Number missing: 7, Reason: n=5 lost to follow-up (unable to be reached by research assistant); n=2 declined follow-up; Group 2 Number missing: 15, Reason: n=15 lost to follow-up (unable to be reached by research assistant) Protocol outcome 2: Readmission up to 30 days - Actual outcome: Readmission within 28 days at 28 days; Group 1: 58/166, Group 2: 62/166; Risk of bias: All domain - High, Selection - High, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ; Baseline details: 'computer-generated random numbers'; intervention group contained statistically significant older patients and retirees; Group 1 Number missing: 7, Reason: n=5 lost to follow-up (unable to be reached by research assistant); n=2 declined follow-up; Group 2 Number missing: 15, Reason: n=15 lost to follow-up (unable to be reached by research assistant)	
Protocol outcomes not reported by the study	Quality of life at during study period; Mortality at during study period; Avoidable adverse events at during study period; Number of presentations to Emergency Department at during study period; Number of admissions to hospital at After 28 days of first admission; Number of GP presentations at during study period; Length of stay in programme at during study period; Length of hospital stay at during study period

1

Study	Yeung 2012[147]

Study	Yeung 2012[147]
Study type	RCT (Patient randomised; Parallel)
Number of studies (number of participants)	1 (n=108)
Countries and setting	Conducted in Hong Kong (China); Setting: Secondary care
Line of therapy	Unclear
Duration of study	Intervention time: 4 weeks
Method of assessment of guideline condition	Method of assessment/diagnosis not stated: Stroke
Stratum	Overall
Subgroup analysis within study	Not applicable
Inclusion criteria	Stroke survivors
Exclusion criteria	Not stated
Recruitment/selection of patients	Recruited in hospitals within a cluster of the Hong Kong Hospital Authority system from August 2010 to September 2011
Age, gender and ethnicity	Age - --: Not stated. Gender (M:F): Not stated. Ethnicity: Chinese
Further population details	1. Frail elderly: Not applicable/Not stated/Unclear
Extra comments	Abstract only
Indirectness of population	No indirectness
Interventions	(n=54) Intervention 1: Community matron or Nurse-led care. Transitional care programme including standardised protocols for holistic case manager training; Omaha system for nursing documentation; family meeting guided by motivational interviewing; home visit; telephone follow up; health and community care referral system; holistic care patient self-management log book to provide information and empower health adherence behaviours. Programme commenced 1 week before discharge and went on until 4 weeks after discharge. Duration 4 weeks after discharge. Concurrent medication/care: Not stated (n=54) Intervention 2: Usual Care. Usual post-stroke care. Duration 4 weeks. Concurrent medication/care: Not stated
Funding	Funding not stated
RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: COMMUNITY MATRON OR NURSE-LED CARE versus USUAL CARE Protocol outcome 1: Number of presentations to Emergency Department at during study period	

Study	Yeung 2012[147]
- Actual outcome: ED visits at 4 weeks; Group 1: 2/54, Group 2: 10/54; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness Protocol outcome 2: Readmission up to 30 days - Actual outcome: Readmission at 4 weeks; Group 1: 4/54, Group 2: 8/54; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness	
Protocol outcomes not reported by the study	Quality of life at during study period; Mortality at during study period; Avoidable adverse events at during study period; Patient and/or carer satisfaction at during study period; Number of admissions to hospital at After 28 days of first admission; Number of GP presentations at during study period; Length of stay in programme at during study period; Length of hospital stay at during study period

Study	Young 2003[148]
Study type	RCT (Patient randomised; Parallel)
Number of studies (number of participants)	1 (n=146)
Countries and setting	Conducted in Canada; Setting: Secondary care
Line of therapy	Unclear
Duration of study	Intervention + follow up: Intervention duration unclear; follow up mean around 444 days
Method of assessment of guideline condition	Adequate method of assessment/diagnosis: Confirmed diagnosis of MI
Stratum	Overall
Subgroup analysis within study	Not applicable
Inclusion criteria	Admitted to TEGH between August 1999 and August 2000 with a confirmed diagnosis of MI, resident in the catchment area, assessed by a care coordinator as eligible for a visit form a home health nurse at no cost to the patient and continued to meet these criteria at discharge. Eligibility generally implied that the services were necessary to enable the patient to remain at home.
Exclusion criteria	Patients transferred to an acute care or long-term care institution, who moved out of the catchment area after discharge or withdrew consent before discharge.
Recruitment/selection of patients	Enrolled at The Toronto East General and Orthopaedic Hospital (TEGH)
Age, gender and ethnicity	Age - Mean (SD): Intervention 67.8 (13.1); control 70.1 (13.4) years. Gender (M:F): 87:59. Ethnicity: Not stated
Further population details	1. Frail elderly: Frail elderly (Multiple comorbidities).
Indirectness of population	No indirectness

Study	Young 2003[148]
Interventions	(n=71) Intervention 1: Community matron or Nurse-led care. Disease management programme: standardised pathway labelled "the nursing checklist"; referral criteria for speciality care management; communication systems including discharge summary and nurses' visit report; and patient education. Eligible to receive a minimum of 6 home care visits from a cardiac-trained nurse.. Duration Unclear. Concurrent medication/care: Not stated (n=75) Intervention 2: Usual Care. Referred to a non-invasive cardiac laboratory for diagnostic testing, followed up by cardiologist, given information on TEGH's cardiac teaching class as well as cardiac rehabilitation at Toronto Rehabilitation Centre. If referred to home care, received currently practised home care.. Duration Unclear. Concurrent medication/care: Not stated
Funding	Academic or government funding (The Change Foundation; University of Toronto Home and Community Care Evaluation and Research Centre; East York Access Centre and Partners for Health)
RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: COMMUNITY MATRON OR NURSE-LED CARE versus USUAL CARE Protocol outcome 1: Mortality at during study period - Actual outcome: Died at Mean around 444 days; Group 1: 8/71, Group 2: 8/75; Risk of bias: All domain - Low, Selection - Low, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness Protocol outcome 2: Number of presentations to Emergency Department at during study period - Actual outcome: ED visits at Within 225 days; Risk of bias: All domain - Low, Selection - Low, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness Protocol outcome 3: Number of admissions to hospital at After 28 days of first admission - Actual outcome: Hospital readmissions at Within 225 days; Risk of bias: All domain - Low, Selection - Low, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness Protocol outcome 4: Number of GP presentations at during study period - Actual outcome: Office visits at Within 225 days; Risk of bias: All domain - Low, Selection - Low, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness	
Protocol outcomes not reported by the study	Quality of life at during study period; Avoidable adverse events at during study period; Patient and/or carer satisfaction at during study period; Readmission up to 30 days; Length of stay in programme at during study period; Length of hospital stay at during study period

D.2 Extended access to community nursing

No relevant clinical evidence was retrieved.

Appendix E: Health economic evidence tables

E.1 Matron or nurse-led care

Study	Graves 2009[55]			
Study details	**Population & interventions**	**Costs**	**Health outcomes**	**Cost effectiveness**
Economic analysis: CUA (health outcome: QALY) **Study design:** RCT **Approach to analysis:** Decision analytic model based on a single RCT **Perspective:** Australian healthcare system **Time horizon:** 24 weeks **Discounting:** Costs: n/a; Outcomes: n/a	**Population:** 65 years or older and admitted with a medical condition At least 1 risk factor for readmission (aged >75, multiple admissions in previous 6 months, multiple comorbidities, lived alone, lacked social support, poor self-rated health, moderate to severe functional impairment, and history of depression). **Cohort settings:** Start age: 78.8 Male: 37.7% **Intervention 1: (n=64)** Participants in the control received the routine care, discharge planning and rehabilitation advice normally provided. If in-home follow-up was	**Total costs (mean per patient):** Incremental (2−1): -£165 (95% CI: -£850 to £564; p=NR) **Currency & cost year:** 2008 Australian dollars (presented here as 2008 UK pounds)[(a)] **Cost components incorporated:** Physio time, nurse time, stretchy band, pedometer, hospital bed day, community bed day, GP visit	**QALYs (mean per patient):** Intervention 1: NR Intervention 2: NR Incremental (2−1): 0.118 (95% CI: 0.10 to 0.136; p=NR)	**ICER (Intervention 2 versus Intervention 1):** Intervention 2 dominates. **Analysis of uncertainty:** 100% probability the intervention generated health benefits and a 64% chance it saved costs. 95% chance it is cost effective at a £20,000 per QALY threshold.

	necessary, it was organised in the routine manner (for example,. referral to community health services). **Intervention 2: (n=64)** Extended access to nurse and physio care post admission. This included nurse home visit within 48 hours of discharge to assess access availability of support, address transitional concerns, provide advice and support and ensure that the exercise program could be safely undertaken at home. Extra home visits were provided if required.			
Data sources				
Health outcomes: Data collected throughout the RCT conducted by Courtney et al.[32] **Quality-of-life weights:** EQ-5D mapped from SF-12 **Cost sources:** mater health services, medical benefits schedule, Australian hospital statistics, economics and health service group				
Comments				
Source of funding: Australian Research Council **Applicability and limitations:** Australian healthcare system may not accurately portray the UK NHS.UK tariff not used to measure EQ-5D. RCT-based analysis so from 1 study by definition therefore not reflecting all evidence in area. EQ-5D was mapped from SF-12 and not measured directly. However, these limitations are unlikely to change the conclusions about cost-effectiveness.				
Overall applicability[(b)]: Partially applicable **Overall quality**[(c)]**:** Minor limitations				

Abbreviations: 95% CI: 95% confidence interval; CUA: cost–utility analysis; EQ-5D: Euroqol 5 dimensions (scale: 0.0 [death] to 1.0 [full health], negative values mean worse than death); ICER: incremental cost-effectiveness ratio; NR: not reported; QALYs: quality-adjusted life years; SF-12: short-form 12 questionnaire.

(a) Converted using 2008 purchasing power parities [109].

(b) Directly applicable/Partially applicable/Not applicable.

(c) Minor limitations/Potentially serious limitations/Very serious limitations.

Study	Ploeg 2010 [112]			
Study details	**Population & interventions**	**Costs**	**Health outcomes**	**Cost effectiveness**
Economic analysis: CUA (health outcome: QALY) **Study design:** RCT **Approach to analysis:** Within-trial analyses of resource use, with unit costs applied. **Perspective:** Canadian primary care network. **Time horizon:** 12 months **Discounting:** Costs: n/a; Outcomes: n/a	**Population:** Patients aged >75 years, not already receiving home care services. **Cohort settings:** Start age: 81 Male: 47% **Intervention 1: (n=358)** Control group receiving usual care. **Intervention 2: (n=361)** Experienced home care nurse-led intervention.	**Total costs (mean per patient):** Intervention 1: £4,204 Intervention 2: £4,039 Incremental (2−1): -£165 (95% CI: NR; p=NR) **Currency & cost year:** 2006 Canadian dollars (presented here as 2006 UK pounds**Error! Reference source not found.**) **Cost components incorporated:** Prescription drugs, visits to physician, hospital admissions, home nursing visits.	**QALYs (mean per patient):** Intervention 1: 0.5079 Intervention 2: 0.5554 Incremental (2−1): 0.0475 (95% CI: NR; p=NR)	**ICER (Intervention 2 versus Intervention 1):** Intervention 2 dominates. **Analysis of uncertainty:** No sensitivity analysis reported.
Data sources				
Health outcomes: Data collected through the health and social service utilization survey. **Quality-of-life weights:** HUI3 **Cost sources:** Based on local costs; Ontario Canada.				
Comments				
Source of funding: Ontario Ministry of Health and Long Term Care, Primary Health Care Transition Fund **Applicability and limitations:** Some uncertainty regarding the applicability of resource use and unit costs from Canada to the current NHS context. QALYs obtained through HUI3 rather than preferred EQ-5D. RCT-based analysis so from 1 study by definition therefore not reflecting all evidence in area. Local unit costs used may not be representative of national costs. No sensitivity analysis reported.				
Overall applicability[(a)]: Partially applicable **Overall quality**[(b)]: Minor limitations				

Abbreviations: 95% CI: 95% confidence interval; CUA: cost–utility analysis; EQ-5D: Euroqol 5 dimensions (scale: 0.0 [death] to 1.0 [full health], negative values mean worse than death); HUI3: health utility index mark 3; ICER: incremental cost-effectiveness ratio; NR: not reported; QALYs: quality-adjusted life years.

(a) Converted using 2006 purchasing power parities [109].
(b) Directly applicable/Partially applicable/Not applicable.
(c) Minor limitations/Potentially serious limitations/Very serious limitations.

Study	**Turner 2008 [136]**			
Study details	**Population & interventions**	**Costs**	**Health outcomes**	**Cost effectiveness**
Economic analysis: CUA (health outcome: QALY) **Study design:** Economic evaluation alongside a cluster randomised control trial **Approach to analysis**: Analysis of individual level data for QALYs and resource use with unit costs applied. **Perspective:** UK NHS **Follow-up:** 12 months **Discounting:** Costs: n/a; Outcomes: n/a	**Population:** Patients with coronary heart disease or chronic heart failure. **Cohort settings:** Start age: 70 Male: 63% **Intervention 1:** Control group; standard general practice care. **Intervention 2:** Specialist nurse-led disease management programme.	**Total costs (mean per patient):** Intervention 1: £660 Intervention 2: £1,107 Incremental (2−1): £447 (95% CI: NR; p=NR) **Currency & cost year:** 2003-2004 UK pounds **Cost components incorporated:** Medication, contact with GP, contact with practice nurse, visits to nurse-led disease management, home visits, outpatient visits, inpatient visits.	**QALYs (mean per patient):** Intervention 1: 0.60 Intervention 2: 0.63 Incremental (2−1): 0.03 (95% CI: NR; p=NR)	**ICER (Intervention 2 versus Intervention 1):** £14,900 per QALY gained (pa) 95% CI: NR Probability Intervention 2 cost-effective (£20K/30K threshold): 80%/90% **Analysis of uncertainty:** The study developed a cost-effectiveness acceptability curve, showing how likely the intervention is cost-effective at a range of thresholds.
Data sources				
Health outcomes: Baseline and follow-up resource use data taken from general practice records. **Quality-of-life weights:** EQ-5D UK tariff. **Cost sources:** NHS reference costs, PSSRU, BNF.				
Comments				
Source of funding: The Trent NHS Executive, UK. The Trent Research and Development Support Unit (RDSU). **Applicability and limitations:** RCT-based analysis so from 1 study by definition therefore not reflecting all evidence in area. 12 month time horizon may not be sufficient.				
Overall applicability[(a)] Directly applicable **Overall quality**[(b)]: Minor limitations				

Abbreviations: 95% CI: 95% confidence interval; BNF: British national formulary; CUA: cost–utility analysis; EQ-5D: Euroqol 5 dimensions (scale: 0.0 [death] to 1.0 [full health], negative values mean worse than death); ICER: incremental cost-effectiveness ratio; NR: not reported; PSSRU: personal social services research unit; QALYs: quality-adjusted life years.

(d) Directly applicable/Partially applicable/Not applicable.

(e) Minor limitations/Potentially serious limitations/Very serious limitations.

E.2 Extended access to community services

No economic studies were included.

Appendix F: GRADE tables

F.1 Matron or nurse-led care

Table 8: Clinical evidence profile: Matron/nurse-led care versus usual care

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	All interventions	Control	Relative (95% CI)	Absolute		
All-cause mortality (follow-up 6 weeks - 2 years)												
34	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	no serious imprecision	None	629/3868 (16.3%)	629/3512 (17.9%)	RR 0.88 (0.8 to 0.98)	21 fewer per 1000 (from 4 fewer to 36 fewer)	⊕⊕⊕O MODERATE	CRITICAL
Length of stay (days) (follow-up 6 weeks - 1 year; Better indicated by lower values)												
12	randomised trials	no serious risk of bias	serious[3]	no serious indirectness	no serious imprecision	None	1128	1167	-	MD 0.51 lower (1.33 to 0.31 lower)	⊕⊕⊕⊕ HIGH	CRITICAL
Quality of life (high score is good) - Barthel Index (follow-up 1 year; Better indicated by higher values)												
1	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	serious[2]	None	116	135	-	MD 3.99 higher (0.97 to 7.01 higher)	⊕OOO VERY LOW	CRITICAL
Quality of life (high score is good) - QoL Myocardial Infarction Questionnaire (follow-up 100 days; Better indicated by higher values)												
1	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	no serious imprecision	None	134	133	-	MD 8.40 higher (0.08 lower to 16.88 higher)	⊕⊕⊕O MODERATE	CRITICAL
Quality of life (high score is good) - SF-36 Physical component (follow-up 12-24 weeks; Better indicated by higher values)												
2	randomised trials	serious[1]	serious[3]	no serious indirectness	serious[2]	None	141	138	-	MD 10.78 higher (3 lower to 24.56 higher)	⊕OOO VERY LOW	CRITICAL

Quality of life (high score is good) - SF-36 Mental component (follow-up 12-24 weeks; Better indicated by higher values)												
2	randomised trials	serious[1]	serious[3]	no serious indirectness	serious[2]	None	142	142	-	MD 7.15 higher (0.88 lower to 15.17 higher)	⊕OOO VERY LOW	CRITICAL
Quality of life (high score is bad) (follow-up 60 days - 2 years; Better indicated by lower values)												
9	randomised trials	serious[1]	serious[3]	no serious indirectness	no serious imprecision	None	735	799	-	MD 3.09 lower (5.43 to 0.75 lower)	⊕⊕OO LOW	CRITICAL
Admission (>30 days; continuous data) (follow-up 3-12 months; Better indicated by lower values)												
6	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	no serious imprecision	None	649	624	-	MD 0.04 higher (0.06 lower to 0.14 higher)	⊕⊕⊕⊕ HIGH	CRITICAL
Admission (>30 days; dichotomous data) (follow-up 6 weeks - 2 years)												
28	randomised trials	serious[1]	serious[3]	no serious indirectness	no serious imprecision	None	1403/3145 (44.6%)	1339/2877 (46.5%)	RR 0.90 (0.82 to 1)	47 fewer per 1000 (from 84 fewer to 0 more)	⊕⊕OO LOW	CRITICAL
Re-admission (follow-up 30 days - 1 year)												
2	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	None	62/220 (28.2%)	70/220 (31.8%)	RR 0.89 (0.67 to 1.17)	35 fewer per 1000 (from 105 fewer to 54 more)	⊕⊕OO LOW	CRITICAL
GP visits (continuous data) (follow-up 6-12 months; Better indicated by lower values)												
2	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	no serious imprecision	None	171	126	-	MD 0 higher (1.05 lower to 1.04 higher)	⊕⊕⊕O MODERATE	IMPORTANT
GP visits (dichotomous data) (follow-up 3-24 months)												
5	randomised trials	serious[1]	serious[3]	no serious indirectness	serious[2]	None	332/486 (68.3%)	404/529 (76.4%)	RR 0.88 (0.75 to 1.03)	92 fewer per 1000 (from 191 fewer to 23 more)	⊕OOO VERY LOW	IMPORTANT
Emergency department admissions (continuous data) (follow-up 6-12 months; Better indicated by lower values)												
4	randomised	no serious	serious[3]	no serious	no serious	None	453	420	-	MD 0.05 lower (0.38	⊕⊕⊕O	IMPORTAN

	trials	risk of bias		indirectness	imprecision					lower to 0.28 higher)	MODERATE	T
Emergency department admissions (dichotomous data) (follow-up 4 weeks - 12 months)												
8	randomised trials	serious[1]	serious[3]	no serious indirectness	serious[2]	None	132/531 (24.9%)	168/524 (32.1%)	RR 0.74 (0.51 to 1.06)	83 fewer per 1000 (from 157 fewer to 19 more)	⊕OOO VERY LOW	IMPORTANT
Patient satisfaction (high score is good) (follow-up 60 days - 10 months; Better indicated by higher values)												
2	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	no serious imprecision	None	227	232	-	MD 1.26 higher (0.24 to 2.27 higher)	⊕⊕⊕⊕ HIGH	IMPORTANT
Patient satisfaction (high score is bad) (follow-up 30 days; Better indicated by higher values)												
1	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	None	166	166	-	MD 0.2 lower (0.33 to 0.07 lower)	⊕⊕OO LOW	IMPORTANT
Patient dissatisfaction; dichotomous data (follow-up 6 months)												
1	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	serious[2]	None	115/223 (51.6%)	119/247 (48.2%)	RR 1.07 (0.89 to 1.28)	34 more per 1000 (from 53 fewer to 135 more)	⊕OOO VERY LOW	CRITICAL

[1] Downgraded by 1 increment if the majority of the evidence was at high risk of bias, and downgraded by 2 increments if the majority of the evidence was at very high risk of bias.

[2] Downgraded by 1 increment if the confidence interval crossed 1 MID or by 2 increments if the confidence interval crossed both MIDs.

[3] Heterogeneity, I^2=50%, p=0.04, unexplained by subgroup analysis.

F.2 Extended access to community nursing

No GRADE tables were included.

Appendix G: Excluded clinical studies

Table 9: Studies excluded from the matron or nurse-led care clinical review

Study	Exclusion reason
Aiken 2006 [2]	Incorrect population
Akinci 2011 [3]	Incorrect intervention
Allen 2002 [5]	No relevant extractable outcomes
Allison 2000 [7]	Incorrect intervention
Anon2016[1]	Not AME patients- community living people aged 70 years and over at increased risk of functional decline
Billington 2015 [10]	Incorrect intervention – telephone based intervention
Brandon 2009[15]	insufficient data reported for meta-analysis (ANOVA tables only, no Means or SDs)
Bryant-Lukosius 2015 [16]	Systematic review
Buurman 2010 [17]	Study protocol
Carrington 2013 [22]	Not applicable in practice – Australian study
Chan 2012A [24]	No relevant extractable outcomes
CHATWIN2016[25]	Inappropriate intervention- telemonitoring in chronic respiratory patients
Chau 2012[26]	Incorrect interventions. the only difference between the groups is the telecare service, the community nurse features in both arms
Chew-Graham 2007 [27]	Incorrect population
Chiu 2007[28]	Systematic review: literature search not sufficiently rigorous
Courtney 2012 [33]	No relevant extractable outcomes
Dalby 2000 [34]	Incorrect population – frail and elderly people based in primary care services
Daly 2005[35]	Patient population very specific to post mechanical ventilation that may not be comparable to AME's in general (committee subgroup)
Douglas 2007[46]	patient population specific to post mechanical ventilation not generalisable to the AME population (committee subgroup)
Dyar 2012 [49]	No relevant extractable outcomes
GODWIN2016[53]	Not AME patients- community dwelling, cognitively functioning people aged 80 years and older
Goldman 2014 [54]	Incorrect intervention – telephone based intervention
Griffiths 2004 [56]	Systematic review
Hansen 1992 [58]	Incorrect intervention
Houweling 2011 [63]	Incorrect comparison – nurse versus GP care
Huss 2008 [65]	Systematic review
Inglis 2004[66]	RCT; but subset of data already covered by Stewart 1998[128], and 1999[127]
Ismail 2013[67]	Systematic review: literature search not sufficiently rigorous
Jolly 1999[72]	outcome data insufficient for meta-analysis (missing p values and SDs)
Joo 2014[73]	Systematic review: screened for relevant references
Kadda 2012[74]	Systematic review: screened for relevant references
KOH2016[79]	Study protocol
Kuethe 2013[82]	Inappropriate comparison. Compares nurse versus physician led care

Study	Exclusion reason
	(protocol only). Incorrect interventions
Latour 2006 [86]	No relevant extractable outcomes
Levy 2006 [89]	Incorrect study design – observational study
Li 2015 [90]	Incorrect intervention
Luckett 2013 [92]	Systematic review
McCauley 2006 [94]	No extractable outcomes
McCorkle 2000 [95]	Incorrect study design – observational study
Melis 2010 [97]	No relevant extractable outcomes
Middleton 2005 [98]	Incorrect intervention – telephone based intervention
Morilla-Herrera 2016 [100]	Systematic review- screened for relevant references
Mussi 2013 [101]	No relevant extractable outcomes
Naylor 1999[102]	Incorrect interventions. Usual care not comparable to UK context (committee subgroup)
Naylor 1999[104]	Incorrect interventions. usual care not comparable to UK setting (committee subgroup)
Naylor 2004[103]	Incorrect interventions. usual care not comparable to UK setting (committee subgroup)
ONG2016[108]	Inappropriate intervention- telemonitoring for patients with heart failure after hospitalisation.
Patrick 2006[110]	Incorrect study design
Plant 2015 [111]	Incorrect comparison
Rawl 1998 [114]	Incorrect intervention
Runciman 1996[116]	Incorrect interventions. Intervention not done by nurse but research health visitor
Scalvini 2004 [117]	Incorrect study design – observational study
Schwarz 2008[118]	Incorrect interventions. the only difference between the interventions is the absence or presence of telemonitoring not the community nurse
Scott 2010[119]	Systematic review: literature search not sufficiently rigorous
Smith 2001A [121]	Systematic review- screened for relevant references
Smith 2005A [123]	Incorrect population
Steiner 2001 [125]	Incorrect intervention – in-hospital patient care
Stewart 1998 [129]	Incorrect intervention
Stuck 2000 [131]	Incorrect population
SUIJKER2016[132]	Not AME patients- community living older people at increased risk of functional decline.
Van Hout 2010 [62]	Incorrect population
Van Rossum 1993 [137]	Incorrect population
Verschuur 2009 [138]	Incorrect population – people with cancer
Wetzels 2008 [139]	Incorrect population – patients were not previously admitted to hospital
Williams 1994 [140]	No relevant extractable outcomes
Wit 1997 [141]	Incorrect intervention
Wood-Baker 2012 [145]	Incorrect study design
Yuan 2015 2015 [149]	No relevant extractable outcomes
Zwar 2008 [151]	Incorrect study design
Zwar 2012 [150]	Incorrect population

1 **Table 10: Studies excluded from the extended access to community nursing clinical review**

Reference	Reason for exclusion
Bowler 2009 [14]	Not out of hours care
Campbell 2013 [18]	Not out of hours care
Campbell 2014 [20]	Not out of hours care
Campbell 2015 [19]	Not out of hours care
Hernandez 2014 [91]	Not out of hours care
Ismail 2013 [67]	Relevant studies in SR not UK based
Kanda 2015 [75]	Incorrect comparison (nurses v Drs; not out of hours care)
Laurent 2005 [87]	Incorrect comparison (nurses v Drs; not out of hours care)
Wye 2014 [146]	Not out of hours care

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Appendix H: Excluded health economic studies

Table 11: Studies excluded from the matron or nurse-led care economic review

Reference	Reason for exclusion
Fletcher 2009 [50]	This study was partially applicable and judged to have very serious limitations. The study did not report a quality of life measure or resource use by the interventions. Uncertainty around what was included in costs.
Latour 2007 [85]	This study was partially applicable and judged to have potentially serious limitations. However, developers felt this study was superseded by other available evidence by Turner 2008A[136] and Ploeg 2010[112], and therefore this study was selectively excluded. Exclusion criteria included healthcare system, cost perspective, length of follow-up and quality of life measure.
Gage 2013[51]	This study has very serious limitations. The study is an observational study that did not adjust for possible confounding due to the differences in nurses' caseloads and therefore was excluded.
Hall 2012[57]	Partial economic evaluation using an Australian healthcare setting. Given there was evidence from randomised trials analysing both health and costs consequences, 1 in a UK setting, this evidence was selectively excluded.

No economic studies were excluded in the extended access to community nursing review.