National Institute for Health and Care Excellence

Draft for consultation

End of life care for adults: service delivery

[L] Additional services and Inappropriate admissions

NICE guideline

Evidence review

April 2019

Draft for consultation

This evidence review was developed by the National Guideline Centre

Disclaimer

The recommendations in this guideline represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, professionals are expected to take this guideline fully into account, alongside the individual needs, preferences and values of their patients or service users. The recommendations in this guideline are not mandatory and the guideline does not override the responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and, where appropriate, their carer or guardian.

Local commissioners and providers have a responsibility to enable the guideline to be applied when individual health professionals and their patients or service users wish to use it. They should do so in the context of local and national priorities for funding and developing services, and in light of their duties to have due regard to the need to eliminate unlawful discrimination, to advance equality of opportunity and to reduce health inequalities. Nothing in this guideline should be interpreted in a way that would be inconsistent with compliance with those duties.

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1 Additional community services to support people to stay in their usual place of residence

1.1 Review question 1: What additional community services are needed to support people in their last year of life to stay in their usual place of residence?

1.2 Introduction

The guideline committee considered settings where additional services may be required. These included across community and third sector settings as well as other institutions. The additional services considered included those delivered at home, such as “hospice at home.” They considered groups of people who might require or benefit from additional services, these included, younger adults, frail elderly, people with dementia, those with hearing or sight loss, people in prison, those with learning difficulties or mental health problems, people from ethnic minorities and those in whom life-prolonging therapies are still an active option.

The social and economic circumstances of people were also considered, for example the homeless, those living in poverty, those living alone, people in employment and the retired. Also considered were differences between urban and rural areas. The committee reviewed the evidence regarding the effects of service provision on the outcomes for the person receiving the service, and for those caring for or close to the patient. Overall there were no research findings to support one service model over another in any one setting.

1.3 PICO table

For full details see the review protocol in Appendix A.

Table 1: PICO characteristics of review question

Population	• Adults (aged over 18 or over) with progressive life-limiting conditions thought to be entering the last year of life.
Interventions	• Availability of additional community services on a regular/routine basis to support people in their last year of life to stay in their usual place of residence, for example: ○ Specialist palliative care ○ Physiotherapy ○ Occupational therapy ○ Speech and language therapy ○ Palliative care rehabilitation ○ Rehabilitation ○ Social care ○ Specialist psychology ○ Counselling ○ Benefits advice ○ Complementary therapies ○ Emotional and spiritual
Comparisons	• To each other (different ways of providing additional services; alone or in combination) • No additional community services available to support people in their last year

	of life to stay in their usual place of residence (usual care)
Outcomes	CRITICAL • Quality of life (Continuous) • Preferred and actual place of death (Dichotomous) • Preferred and actual place of care (Dichotomous) IMPORTANT • Length of survival (Continuous) • Length of stay (Continuous) • Hospitalisation (Dichotomous) • Number of hospital visits (Dichotomous) • Number of visits to accident and emergency (Dichotomous) • Number of unscheduled admissions (Dichotomous) • Use of community services (Dichotomous) • Avoidable/inappropriate admissions to ICU (Dichotomous) • Inappropriate attempts at cardiopulmonary resuscitation (Dichotomous) • Staff satisfaction (Continuous) • Patient/carer reported outcomes (satisfaction) (Continuous)
Study design	• Systematic reviews • RCTs • Non-randomised comparative studies, including before and after studies and interrupted-time-series.

1.4 Review question 2: What provision of additional community services should be available to reduce inappropriate/avoidable admissions in people in their last year of life?

1.5 Introduction

This chapter looks at the availability of and access to additional community services to prevent unnecessary hospital admissions for patients in the last year of life. This refers to urgent and unplanned access to services in the event of a crisis. "Routine," or regular, access to additional community services to maintain the person in their preferred place is discussed separately in evidence review J.

Patients and their carers' are often distressed and challenged when a crisis occurs in the health and care status of the patient. This is whether it has been discussed as a possibility in advance care planning or not, and particularly when it happens out of usual core working hours. Sometimes the only solution available to the patient and/or their carer(s) is to call emergency services, often leading to an ambulance journey and hospital admission. Extra community services to support the patient and carer(s) in such a crisis could both prevent the unnecessary hospital admission, and the use of unnecessary resources. This chapter reviews the evidence in this area.

1.6 PICO table

For full details see review protocol in Appendix A. Clinical evidence

Population	Adults (aged over 18 or over) with progressive life-limiting conditions thought to be entering the last year of life.
Interventions	• Availability of additional community services in an acute/emergency scenario (alone or in combination), for example

	○ Social care ○ Community health services ○ Helplines ○ Equipment ○ Drugs ○ Hydration ○ Nutrition ○ Carer support ○ Hospice at home ○ Virtual hospital ○ Tele-health ○ Advance care planning (ACP) ○ Best interest meetings – mental capacity ○ 'rapid response team' – out of hours ○ Ambulance service may link to community services ○ 24 hour community services ○ Community/health provision of psychological support/self-management/psycho-education ○ Provision of patient/care information ○ Named professional/coordinator (especially out of hours)
Comparisons	• To each other (different ways of providing additional services) • No additional community services available (usual care)
Outcomes	CRITICAL • Quality of life (Continuous) • Preferred and actual place of death (Dichotomous) • Preferred and actual place of care (Dichotomous) IMPORTANT • Length of survival (Continuous) • Length of stay (Continuous) • Hospitalisation (Dichotomous) • Number of hospital visits (Dichotomous) • Number of visits to accident and emergency (Dichotomous) • Number of unscheduled admissions (Dichotomous) • Use of community services (Dichotomous) • Avoidable/inappropriate admissions to ICU (Dichotomous) • Inappropriate attempts at cardiopulmonary resuscitation (Dichotomous) • Staff satisfaction (Continuous) • Patient/carer reported outcomes (satisfaction) (Continuous)
Study design	• Systematic reviews • RCT • Non-randomised comparative studies, including before and after studies and interrupted-time-series.

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1.7 Clinical evidence

1.7.1 Included studies

1.7.2 Availability of additional community services on a regular/routine basis

A search was conducted for randomised trials or non-randomised comparative studies comparing the availability of additional community services provided on a regular/routine basis to support people in their last year of life to stay in their usual place of residence to usual care, or different additional community services provided on a regular/routine basis to each other.

31 studies (reported in 36 papers) were included in the review;[1,2,4,5,8,16,17,22,29,30,32,33,46,54,94,104,106,120,130,131,137,138,152,165,168,180,187,190,192,201-203,207,230,232,238] these are summarised in Table 3 below. Evidence from these studies is summarised in the clinical evidence summary below (Table 7). See also the study selection flow chart in Appendix B, forest plots in Appendix E, study evidence tables in Appendix D, GRADE tables in Appendix F and excluded studies list in Appendix J.

The studies were grouped based on the intensity of the resources used for service delivery, taking into consideration the level of care, staff and other aspects of the interventions.

	Description of the intervention	N	Studies
1	A single provider, no direct clinical care provided. For example: a co-ordinator	2	Addington-hall 1992[2] (Raftery 1996[187]), Aoun 2013[9]
2	Multiple providers ,no direct clinical care	0	
3	A single provider, direct clinical care provided. For example: a nurse specialist	6	Aiken 2006[5], Bakitas 2009[17] (Bakitas 2009[16]), Chitnis 2013[46], Ng 2017[165] (Wong 2017[230]), Seow 2008[202], Seow 2014[201]
4	Multiple providers ,direct clinical care For example: MDT, multi-agency collaboration	22	Ahlner-elmqvist 2004[4], Brian Cassel 2016[30], Brumley 2003[33], Brumley 2007[32], Costantini 2003[54], Gray 1987[94], Hughes 2000[106] , Hughes 1992[104], Kim 2009[120],Leppert 2012[131], Leppert 2014[130], Lustbader 2017[138], Melin-johansson 2010[152], Lukas 2013[137] Noble 2015[168], Pattenden 2013[180], Riolfi 2014[190], Sahlen 2016[192] (Brannstrom 2013[29]), Sessa 1996[203], Smeenk 1998[207], Wong 2013[232] Youens 2017[238]

1.7.3 Excluded studies

See the excluded studies list in Appendix I.

1.7.4 Availability of additional community services in an acute/emergency scenario

A search was conducted for randomised trials or non-randomised comparative studies comparing the availability of additional community services available in an acute/emergency scenario to reduce avoidable or inappropriate admissions versus usual care for people in their last year of life, or different additional community services available in an acute/emergency scenario to each other.

6 studies (reported in 7 papers) were included in the review; [9,41,81,101,146,186,201] these are summarised in Table 4below. Evidence from these studies is summarised in the clinical evidence summary below (Table 27). See also the study selection flow chart in Appendix C, forest plots in Appendix E, study evidence tables in Appendix D, and GRADE tables in Appendix F.

1.7.5 Excluded studies

See the excluded studies list in Appendix J.

Table 2: Summary of studies included in the evidence review

Study	Intervention and comparison	Population	Outcomes	Comments
Abel 2013 [1]	Additional community services on a regular/routine basis. Advanced care planning. A single document for ACP, 'Planning Ahead', which combines a modified version of the Preferred Priorities For Care document with a Putting Affairs In Order guide and an Advance Decision To Refuse Treatment document. 'The Planning Ahead' document was developed in response to requests from patients and their families to have a unified document for future care. Continued to receive usual care. No additional community services available on a regular/routine basis (usual care). Specialist palliative care. Inpatient and outpatient services, visits from specialist palliative care community nurses at home and a day care centre.	All patients who were known to the hospice who died between 01 January 2009 and 30 June 2011. All the patients had a life limiting disease and were referred to the hospice for specialist palliative care. Intervention + follow-up: 2.5 years N=969 UK	Number of accident and emergency visits; Preferred and actual place of death; Length of stay; Hospitalisation; Number of accident and emergency visits	Non-randomised study Category 4
Addington-hall 1992[2] (Raftery 1996[187])	Additional community services on a regular/routine basis. Nurse coordinators. They were based in the community and introduced themselves to patients as nurses providing a link between the hospital, general practitioner and community services. They acted as 'brokers' of services: their role was to assess the need for services from the NHS, local authorities and voluntary sector agencies; to offer advice on how to obtain these services and to contact the agencies themselves if necessary; to ensure that services were provided and were well coordinated; and to monitor the changing needs of the patient and family for services. The coordinators did not provide practical nursing care or advice. No additional community services available on a regular/routine basis (usual care). No access to coordinator	Patient expected to live for one year or less and who were resident within the boundaries of the health authority entered the trial and were allocated to the coordination or control group depending on the general practice with which they were registered. Intervention + follow-up: 3 years N=554 UK	Preferred and actual place of death; Length of survival; Hospitalisation; Length of stay; Number of hospital visits; Use of community services; Patient/carer reported outcomes (satisfaction)	RCT All recruited patients continued to receive routinely available services Category: 1
Ahlner-elmqvist 2004[4]	Additional community services on a regular/routine basis. The AHC service was a 7-days-a-week resource, complementary to the existing inpatient and community health care services.	People who were above 18 years of age, had a histological	Preferred and actual place of death	Non-randomised study Category: 4

Study	Intervention and comparison	Population	Outcomes	Comments
	The nurses worked day and evening shifts and were available for emergency services during the night. The AHC oncologist and the other team members worked daytime hours. During evenings, nights and weekends, the physician on call at the Oncology Department served the AHC. The AHC team visits were planned according to the patient's needs. In addition to symptom treatment, counselling and emotional, social and family supports were provided. Home visits could include interventions such as injections, intravenous fluid therapy, blood transfusions, chemotherapy, nasogastric intubation and catheterization of the urine bladder and various other forms of technical support. No additional community services available on a regular/routine basis (usual care). Conventional care: home care services including primary care centres served by general practitioners (GPs) and district nurses.	verified malignant disease, were informed about their diagnoses and were in a palliative care situation Intervention + follow-up: 1 year N=297 Sweden	Length of stay	
Aiken 2006[5]	Additional community services on a regular/routine basis. Registered nurse case managers provided 'PhoenixCare' services. Phoenixcare delivered home-based services focused on disease and symptom management, patient and caregiver education on disease management and social and psychological support. Registered nurse case managers delivered the primary PhoenixCare services and assumed a leadership role in coordinating PhoenixCare services with the patients' primary care physician, with any case managers provided by the patient's managed care organisation (HMO), and with community agencies. A medical director, social worker, and pastoral counsellor provided support to case managers, who coordinated care planning with PhoenixCare members, primary care physicians, health plan case manager, and patient, family and community agencies. No additional community services available on a regular/routine basis (usual care). No access to case manager	People diagnosed with chronic heart failure (CHF) or chronic obstructive pulmonary disease (COPD) who might live for up to 2 years beyond enrolment, based on expert judgment that drew on available prognostic data. All patients were required to have exhibited recent exacerbation of their conditions as evidenced by treatment in an emergency department, urgent care facility, or hospital within the 3 months	Quality of life; Number of visits to A&E	RCT Category: 3

Study	Intervention and comparison	Population	Outcomes	Comments
		prior to enrolment. Follow-up: 6 months N=192 USA		
Aoun 2013[9]	Additional community services on a regular/routine basis. Patients in the Care Aid (CA) support group each received an extra 30 hours of CA support in the 3 months-intervention period, particularly at weekends and after-hours when the routine service is limited by fewer staff being available. CA's assisted with transport to doctor-s appointments, blood tests, visits to community pharmacists, shopping and transport. Inside the home, support included laundry, bed making, preparing meals, providing company during mealtime, social support and conversation, assisting with correspondence and personal care assistance. People also received standard care (SC) No additional community services available on a regular/routine basis (usual care). SC is provided by an interdisciplinary team comprising general practitioners with a special interest in palliative care, palliative care specialist nurses, counsellors, chaplains, Cas, social workers and volunteers, who work with the patients to control symptoms or address psychosocial needs. Typically, nurses visit patients weekly or fortnightly and Cas visit one to three times per week depending on patient's needs	Cancer or non-cancer diagnosis requiring home-based palliative care, living at home alone, no family carer, understanding and speaking English, no cognitive impairment (clinical judgement of the nurse), no personal alarm at home Duration: 3 months N=58 Australia	Quality of life (2-item QoL index); Satisfaction	Non-randomised study. One arm is reported in Q9 – Additional community services on an emergency basis Category: 1
Bakitas 2009[17] (Bakitas 2009[16])	Additional community services on a regular/routine basis. ENABLE (Educate, Nurture, Advise, Before Life Ends). Advance palliative care nurse specialists educated participants about key palliative care principles and crisis prevention via practice problem solving/decision-making skills, symptom management, communication and advance care planning. Coordinated referrals to improve patients' end of life care experience. Referrals and services generally	Patients with a new diagnosis of advanced or recurrent life-limiting cancer (prognosis of approx. 1 year). Eligible if they were within 8 to 12 weeks of a new diagnosis of GI	Quality of life; Length of stay; Number of visits to A&E; Length of survival	RCT Category: 3

Study	Intervention and comparison	Population	Outcomes	Comments
	increased as illness progressed. The intervention was primarily conducted by telephone No additional community services available on a regular/routine basis (usual care). Patients were allowed to use all usual oncology, palliative care and other medical centres without restrictions	tract (unresectable stage III or IV), lung (stage IIIB or IV non-small cell or extensive small cell), genitourinary tract (stage IV), or breast (stage IV and visceral crisis, lung or liver metastasis, estrogen receptor -ve, human epidermal growth factor receptor 2 positive) cancer Follow-up: 12 months N=322 USA		
Bentur 2014[22]	Additional community services on a regular/routine basis. Referral to home hospice unit (HHU) care. A 24hr service provided by a multidisciplinary palliative care team that includes physicians, nurses and social workers who visit the patients home once a week or more as needed. No additional community services available on a regular/routine basis (usual care). Without home hospice care.	Participants who lived in the community and died of metastatic cancer between January and September 2009. Duration: 6 months before death (retrospective) N=193 Israel	Preferred and actual place of death; Hospitalisation; Number of visits to A&E	Non-randomised study Category: 4
Brian Cassel 2016[30]	Additional community services on a regular/routine basis. Transitions is a concurrent care, home-based program designed for individuals with advanced chronic illness who would benefit from support provided by a trained specialty PC team comprising doctors, nurses, spiritual care providers and social workers. The program has 4 components: 1) in-home medical consultation, 2) on-going evidence-based	'Transitions' participants and comparison participants who had Medicare Advantage, one or more of four diseases (cancer,	Preferred and actual place of death; Length of survival; Avoidable/inappropriate admissions to ICU; Hospitalisation; Number of hospital	Non-randomised study Category: 4

Study	Intervention and comparison	Population	Outcomes	Comments
	prognostication of further survival, 3) caregiver support, 4) advance healthcare planning. The team provides pain and non-pain symptom management, education to promote individual and family awareness of illness trajectory and treatment choices, and psychosocial and spiritual support. No additional community services available on a regular/routine basis (usual care). No access to Transitions program	COPD, HF, dementia), and 2 years of usage data before death Duration: 2 years N=1443 USA	visits; Number of unscheduled admissions	
Brumley 2003[33]	Additional community services on a regular/routine basis. The TriCentral Palliative Care (TCPC) program is an interdisciplinary home-based program for patients at the end of life. The program offers enhanced pain control, symptom management and psychosocial support to improve quality of life. Patients retain their primary physician while receiving home visits from the palliative care team and physician. The core team consists of a physician, nurse and social worker with expertise in pain control, other symptom management and psychosocial intervention. A palliative care physician coordinates care from a variety of health care practitioners. Home visits are provided by all team members (including physicians) to provide medical care, support and education as needed by patients and their caregivers. Telephone support and afterhours visits are available 24/7, as needed by the patient. ACP is provided No additional community services available on a regular/routine basis (usual care). Kaiser Permanente hospice patients who did not receive the TCPC program	Kaiser Permanente (KP) hospice homebound patients who had a diagnosis of a life threatening disease, primarily Chronic obstructive pulmonary disease (COPD), Chronic heart failure (CHF), or cancer; two or more emergency department visits or hospital admissions in the past year, and limited life expectancy (not more than approximately one year to live) Duration: 1.5 years N=297 USA	Preferred and actual place of death; Number of hospital visits; Number of visits to A&E; Use of community services	RCT Category: 4
Brumley 2007[32]	Additional community services on a regular/routine basis. The IHPC program is an interdisciplinary home-based program: core care team consists of patient and family, physician, nurse and a social worker with expertise in symptom management and bio-psychosocial intervention; responsible for coordinating and managing care. All patients received initial assessments from physicians, nurses and social	Patients with a primary diagnosis of chronic heart failure, chronic obstructive pulmonary disease or cancer and a life expectancy of 12 months or less, have	Preferred and actual place of death; Length of survival; Hospitalisation; Number of visits to A&E;	Category: 4

Study	Intervention and comparison	Population	Outcomes	Comments
	workers. Additional team members as per needs. Frequency of medical visits is based on individual needs of the patients. Physicians conduct home visits and are available along with nursing services on a 24-hrs on-call basis. In addition, advanced care planning is provided that involves patients and their families in making informed decisions and choices about care goals and EOLC. The team provides education, support and medical care to the patients and families. No additional community services available on a regular/routine basis (usual care). Standard care as per Medicare guidelines for home healthcare criteria, including various amounts and levels of home health services, acute care services, primary care services and hospice care. Patients were treated for conditions and symptoms when they presented them to the attending physicians. Additionally, they received on-going home care when they met the Medicare-certified criteria for an acute condition	visited the emergency department or hospital at least once within the previous year, and scored 70% or less on the Palliative Performance Scale. Duration: 2 years N=297 USA	Use of community services; Satisfaction	
Chitnis 2013[46]	Additional community services on a regular/routine basis. MCNS provides hands-on nursing care and emotional support for people in their own homes, day and night at the end of life. It aims to provide care that makes it possible for people to spend their last days of life at home rather than in hospital. The service is provided by registered nurses and healthcare assistants, and people are referred to the service by community nursing services. No additional community services available on a regular/routine basis (usual care). MCNS not available	Intervention group: people who received Marie Curie Nursing Service (MCNS) care in England between 2009 and 2011, and who died in the same period. Controls: selected based on the same inclusion and exclusion criteria as the intervention group, but also could not have received MCNS care. N=59076 UK	Preferred and actual place of death; Number of hospital visits; Number of visits to A&E; Number of unscheduled admissions	Non-randomised study Category: 3
Costantini 2003[54]	Additional community services on a regular/routine basis. Palliative home care teams (PHCT). 12 physicians, seven registered nurses, three psychologists and 25 volunteers.	People with diagnosis of advanced terminal cancer requiring	Length of stay	Non-randomised study

Study	Intervention and comparison	Population	Outcomes	Comments
	No additional community services available on a regular/routine basis (usual care). Usual care no access to PHCT	palliative care, age 1-18 years, and family and patient consent to be followed at home by the PHCT. The control group Patients not followed by the PHCT received usual care from hospitals, their general practitioners and other health services. Duration: 180 days N=567 Italy		Category: 4
Gray 1987[94]	Additional community services on a regular/routine basis. Hospital Palliative Care Service (HPCS) provides care for patients dying in their home and support for family or friends. Medical care can be provided by the patient's own GP, the HPCS GP, or a combination of both. The nursing staff work on a day, evening, night shift system. The HPCS liaison sister coordinates the work of all who care for the patient, liaises with the doctors, organises volunteers when needed, and has a responsibility to the family members during the final stages of illness. Both doctors and nurses can be contacted at all times through a pager by those in the patients home No additional community services available on a regular/routine basis (usual care).	Patients of Hospital Palliative Care Service (HPCS) who were listed on the Cancer Registry of the Health Department of Western Australia as dying of cancer in 1983. Control group were listed on the Cancer Registry of the Health Department of Western Australia as dying of cancer in 1983 Duration: 2 years N=196 Australia	Preferred and actual place of death; Length of stay; Length of survival	Non-randomised study Category: 4
Hughes 2000[106] (Hughes 1992[104])	Additional community services on a regular/routine basis. The program encompasses an interdisciplinary team that is led by a physician and includes nurses, a social worker, a physical therapist, a dietician and health technicians. The program	Hospitalised patients with a terminal diagnoses were enrolled at discharge.	Length of stay; Length of survival	NRS Category: 4

Study	Intervention and comparison	Population	Outcomes	Comments
	reinstated, interdisciplinary patient care plans at team meetings and schedules visits according to patient need. The HSBC physician also manages the HSBC patients both in and out of hospital. The model emphasises the provision of comprehensive services based on need, the importance of timely communication about patients across team members and the instruction and involvement of informal caregivers to the maximum possible extent. No additional community services available on a regular/routine basis (usual care). Service deliver by skilled nursing team. No other details provided	People who lived within the 25 to 35 mile catchment areas served by the programme. Presence of an available caregiver Duration: 6 months N=171 USA		
Kim 2009[120]	Additional community services on a regular/routine basis. The home-based palliative care team. Those who have less than 6 months life expectancy are approached by the palliative care team established by the community health center and asked if they would like to receive palliative care from the center. For those who requested palliative care, the team, consisting of two nurses and one physician on an 8-hour-per-day basis and 82 trained volunteers, provided management of symptoms and psychological and spiritual counselling via home visits. No additional community services available on a regular/routine basis (usual care). Usual care. Those who refused the offer of the home palliative care service from the community health centre	Home-bound, terminally ill cancer patients in the cancer database who had less than 6 months of life expectancy. N=76 USA	Quality of Life; Length of stay	Non-randomised study Category: 4
Leppert 2012[131]	Additional community services on a regular/routine basis. Patients under the home palliative care program were followed up by a nurse twice a week and by a physician every 2 weeks. Access to other members of the multiprofessional team, such as physiotherapists, psychologists, social workers, chaplains and volunteers Other additional community services available on a regular/routine basis. Patients at the PCU were followed up daily by physicians and nurses. Access to other members of the multiprofessional team, such as physiotherapists,	People diagnosed with advanced lung cancer (either stage IV non-small cell lung cancer or extensive disease small cell lung cancer) who were treated at home or at a palliative care unit (PCU). Able to fill in questionnaire	Quality of life	Non-randomised study Category: 4

Study	Intervention and comparison	Population	Outcomes	Comments
	psychologists, social workers, chaplains and volunteers.	and communicate with nurses. N=78 Poland		
Leppert 2014[130]	Additional community services on a regular/routine basis. Patients admitted to the PCU were those who could not be treated at home due to symptom burden or social problems; patients were followed up with every day by physicians and nurses, with other staff members available depending on patients' needs. Other additional community services available on a regular/routine basis. Patients treated at home were unable to attend the outpatient clinic; nurses visited them at home at least twice a week, physicians visited at least twice a month, and other team members visited the patients whenever it was necessary. Other additional community services available on a regular/routine basis. Patients treated at DCC were able to attend DCC twice a week; follow-up with a nurse was provided at each visit, with physician follow-up twice a month and follow-up with other staff members upon patient request.	Advanced cancer patients treated at home, at an in-patient palliative care unit, and at a day care centre. N=129 Poland	Quality of life	Non-randomised study Category 4 Baseline QoL varied significantly between groups.
Lukas 2013[137]	Additional community services available in an acute/emergency scenario. Optimising Advanced Complex Illness Support (OACIS) provides consultation regarding symptom management, ACO, goal-directed care, and care coordination for advance complex illness patients. All patients care provided by three nurse practitioners who were supported by a collaborating physician. A full-time office based nurse coordinator triaged new referrals and follow-up visits, and arranged social and community services. No additional community services available on a regular/routine basis (usual care). Usual care; before enrolment with OACIS	Patients with an advanced life-limiting illness referred to OACIS with at least 1 hospitalisation in the pre-intervention period. N=369 USA	Hospitalisation; Length of stay	Non-randomised study (before and after) Category:4
Lustbader	Additional community services available in an	Decedents with 12	Hospitalisation	Non-randomised study

Study	Intervention and comparison	Population	Outcomes	Comments
2017[138]	acute/emergency scenario. Home-based palliative care (HBPC) program implemented within an Accountable Care Organization. The HBPC team comprised six registered nurses, two social workers, two doctors, one data analyst, and three administrative staff. Most patients got at least one house call and two telephone calls per month with additional outreach from team members as needed. The team engaged in serious illness conversations about goals of care with patients over time with documentation of treatment preferences. There were twice-weekly in person team meetings and a one-hour weekly one-to-one with the nurse, social worker, and palliative care physician to review the nurse caseload in detail. No additional community services available on a regular/routine basis (usual care). Usual care.	months of continuous Medicare claims data before death. N=651 USA	Accident and emergency admissions Service utilisation (Hospice enrolment)	Category: 4
Melin-johansson 2010[152]	Additional community services on a regular/routine basis. AFTER INTERVENTION (14 days after designation to PHT). The palliative homecare team (PHT) is composed of 7 full time registered nurses and 2 part-time physicians, with specific training in palliative care and long clinical experience of caring for this population. The PHT coordinates care in different geographical areas in the county, and with other categories of staff as district nurses, physio, OT, curators and a priest. 5-days a week consultative service working daytime hours and complementary to hospitalised care and community healthcare services. No additional community services available on a regular/routine basis (usual care). BEFORE INTERVENTION: standard care (1 week before referral)	Patients with incurable cancer. Every eligible patient referred to the palliative care team was considered for participation in the study. Patients needed to be aware of diagnosis and prognosis, aged 18 years or older, speaking Swedish, able to complete questionnaires independently, and intention to be cared for in their private homes Duration: 2 weeks N=63	Quality of life	Non-randomised study (before/after) Category: 4

Study	Intervention and comparison	Population	Outcomes	Comments
		Sweden		
Ng 2017[165] Wong 2017[230]	Additional community services on a regular/routine basis. Home-base Palliative Heart Failure; physical and psychological symptom assessment and management, social support, spiritual aspects of care, setting goals of care, and discussions of treatment preference and end-of-life issues. Structure included post-discharge home visits and telephone calls delivered by a PC case manager. No additional community services available on a regular/routine basis (usual care). Pre-discharge palliative care referral consultation and standard discharge planning including a scheduled outpatient PC clinic. Usual care group received two social calls.	End stage heart failure patients (III/IV), with one-year life expectancy. N=84 China	Quality of life; Patient satisfaction	RCT Category: 3 Wong 2017 economics paper of Ng trial.
Noble 2015[168]	Additional community services on a regular/routine basis. Midhurst Macmillan Specialist Palliative Care Service: medical consultant-led multi-disciplinary team that aims to provide round-the-clock, 'hands-on' care and advice at home, in community hospitals and in nursing or residential homes. The range of palliative interventions includes intravenous infusions, paracentesis and intrathecal analgesia. The service aims were: to put in place a sustainable and affordable specialist palliative care service for the population within the Midhurst and surrounding areas; to reduce acute hospital interventions and inpatient hospice stays; to ensure that patient choice is maximised by providing as much treatment and support in the home/ community setting as possible No additional community services available on a regular/routine basis (usual care).	Patients who died during the study period (August 2008–August 2009), within the West Sussex, Surrey and Hampshire PCT areas in the south-east of England, with cancer as known cause of death, who could be matched to both the Public Health Mortality File and the Commissioning Data Set. N=971 UK	Preferred and actual place of death	Non-randomised study Category: 4
Pattenden 2013[180]	Additional community services on a regular/routine basis 'Better Together' (BT): a 2-year collaboration between BHF HFSNs, Marie Curie Cancer Care nurses (MCNs) and Marie Curie Cancer Care healthcare assistants (MCHCAs) working together alongside cardiologists, care of the elderly	NYHA III or IV, patients thought to be in the last year of life by their referrer, repeated hospital admissions,	Length of stay; Number of unscheduled admissions	Non-randomised study Category: 4

Study	Intervention and comparison	Population	Outcomes	Comments
	consultants, district nurses and GPs to enable home/based end of life care. The BHF and MCCC established a supportive and palliative care service. Staff from both organisations underwent joint training to learn about each other's working practices. BHF HFSNs provided self-management education and advice to patients and their carers. They managed symptoms through clinical assessment and regular medication monitoring and review. MCNs provided practical palliative physical nursing care, including the administration of prescribed medications for pain relief and agitation, and psychological support from referral until the end of life. They also liaised with district nurses and other support services for the provision of comfort aids. MCHCAs provided respite care, including basic physical care and psychological support, to patients and carers. 'Better Together' (BT): a 2-year collaboration between BHF HFSNs, Marie Curie Cancer Care nurses (MCNs) and Marie Curie Cancer Care healthcare assistants (MCHCAs) working together alongside cardiologists, care of the elderly consultants, district nurses and GPs to enable home/based end of life care. The BHF and MCCC established a supportive and palliative care service. BHF HFSNs provided self-management education and advice to patients and their carers. They managed symptoms through clinical assessment and regular medication monitoring and review. MCNs provided practical palliative physical nursing care, including the administration of prescribed medications for pain relief and agitation, and psychological support from referral until the end of life. They also liaised with district nurses and other support services for the provision of comfort aids. MCHCAs provided respite care, including basic physical care and psychological support, to patients and carers. No additional community services available on a regular/routine basis (usual care). Historical control group	difficult physical/psychological symptoms despite optimal therapy, needing extra care or support, willing to have the service. N=197 UK		

Study	Intervention and comparison	Population	Outcomes	Comments
Riolfi 2014[190]	Additional community services on a regular/routine basis. The service consisted of two palliative care physicians and 30 specialist nurses who cooperate with GPs. The intensity of care depends on the patient's condition: at least one specialist medical examination a week is guaranteed for all terminally ill patients being cared for at home and this specialist medical exam is conducted daily in the last days of life. Nurses are called into deal with medication and infusion therapies. The services of a palliative care physician or nurse are assured from Monday to Friday (8am to 8pm). On Saturdays and Sundays there is a nurse on call 8am to 8pm. During the night and weekends patients and caregivers and colleagues can always contact a palliative care physician by phone No additional community services available on a regular/routine basis (usual care). The outcomes of the comparison group were for people treated before the palliative home care team was implemented	People who died of cancer in 2011, with a life expectancy of at least 3 months. Duration: 3 months N=402 Italy	Preferred and actual place of death; Length of stay; Hospitalisation	Non-randomised study Category: 4
Sahlen 2016[192] (Brannstrom 2013[29])	Additional community services on a regular/routine basis. Patients offered a multiprofessional approach involving collaboration between specialists in palliative and heart failure care, that is specialised nurses, palliative care nurses, cardiologist, palliative care physician, physiotherapist, and occupational therapist. The programme included patient education on self-care maintenance and management of heart failure, and establishment of an ACP, designed with patients and revised regularly. Key individuals for example: nurse and physician were identified for each patient (point of contact). Out of hours providers were informed of the identity of these patients and know how to respond to call No additional community services available on a regular/routine basis (usual care). Standard care, usually provided by a primary health care centre or the nurse-led heart failure clinic at the hospital	Confirmed diagnosis of CHF according to criteria of European Society of Cardiology, NYHA functional class 3 symptoms, one of: hospitalised episode of worsening heart failure that resolved with the injection/infusion of diuretics or addition of other heart failure treatment in the preceding 6 months; the need for frequent or continual iv support; chronically poor quality of life; signs of cardiac	Quality of life	RCT Category: 4

Study	Intervention and comparison	Population	Outcomes	Comments
		cachexia; and life expectancy of <1 year. Duration: 6 months N=72 Sweden		
Seow 2008[202]	Additional community services on a regular/routine basis. The Omega Life Program (OLP) - Nurse case managers lead the program and provided an initial and on-going holistic assessment of physical, psychosocial, and spiritual needs of patient and family. Case managers educate patients and families about various topics, including advance directives, hospice options, insurance and prescription benefits, and symptom management. Patients and families are taught to contact case managers for information and needs rather than emergencies. Patients are followed by the case manager from enrolment through to death. The case manager also coordinates care between multiple providers, integrate various providers into the care team, and serve as the main point of contact for the patient and the families to help them navigate the health system No additional community services available on a regular/routine basis (usual care) Patients referred to the OLP who elected not to enrol. Continued to receive usual care.	Current cancer diagnosis, with a date of enrolment or refusal to the program, and a confirmed date of death while insured under the managed care organisation. N=89 USA	Length of survival; Hospitalisation	Non-randomised study Category: 3
Seow 2014[201]	Additional community services available on a regular/routine basis (usual care). Specialist palliative care team N=3109 Usual care. Usual care N=3109 Core members: nurses, palliative care physicians, and family physicians. The team provided interdisciplinary, home-based palliative care to people with palliative care needs. Core features of services were 24/7 care and collaboration between health professionals	Patients receiving care from specialist care teams who: a) provide interdisciplinary, home based palliative care; b) were the only team in their respective region; c) had little or no change in staffing	Hospitalisation (number of people in hospital in last 2 weeks of life); Number of visits to A&E (ED visits in the last 2 weeks of life); Place of death; Hospital	Non-randomised study All people in the intervention group received care from specialist palliative care team Category: 3

Study	Intervention and comparison	Population	Outcomes	Comments
		between 2009 until 2012; d) had broad admission criteria (that is, not limited to one disease); e) admitted more than 50 patients; f) were available to patients 24/7 N=6218 Canada		
Sessa 1996[203]	Additional community services on a regular/routine basis. Home-care program users. Public home-care services for cancer patients are available in the entire region, operated through the collaboration of community nurses, family doctors available, specialists and social workers from the cancer centre. Contact between patients and the community nurses is established by the SOC, usually with the agreement of family doctors. In each district, one nurse from the oncology outpatient clinic is responsible for coordination between community and hospital services of the home-care program. The SOC personnel responsible for the local home-care program (physicians, nurses, social workers) meet weekly with community nurses; SOC physicians are responsible for keeping family doctors informed about problems discussed and decisions taken during these meetings No additional community services available on a regular/routine basis (usual care). Non-home care users	People wishing to be treated by home care services, an expected survival generally less than 3 months, concurrence of the family for the patient to remain at home, availability of one relative or friend of reference, and sufficient cooperation with the family doctor. Duration: 3months before patients' death N=993 Switzerland	Preferred and actual place of death; Length of stay; Number of unscheduled admissions	Non-randomised study Category: 4
Smeenk 1998[207]	Additional community services on a regular/routine basis. Transmural home care intervention programme, aimed at assisting the primary care team and consisted of 4 main items: a) A SPECIALIST NURSE COORDINATOR: the key person in the programme. She prepares the necessary patients discharge arrangements. She has daily contacts with caregivers, from medical specialists to home helpers. B) THE 24 HOURS TELEPHONE SERVICE: this is installed in the	Patients who were admitted to the multiprofessional oncology ward of the hospital and who met the following inclusion criteria: cancer, an estimated prognosis of	Quality of life; Preferred and actual place of death; Length of stay; Length of survival	Non-randomised study Category: 4

Study	Intervention and comparison	Population	Outcomes	Comments
	multiprofessional oncology ward and manned by nurses trained to give assistance to patients on the phone. The service can be contacted for advice if problems arise at home, by direct line, and a specialist can also be contacted if needed. C) ACCESS TO A TRANSMURAL HOME TEAM: if specific nursing problems cannot be solved by the primary care team, support is provided by trained nurses from the hospitals transmural home team on request by the GP. The team consists of nurses from the hospital's casualty and day care departments. During on call hours they can be called by semaphone. D) HOME CARE DOSSIER: informed consent, a list of caregivers, a preliminary discharge report for GP, a nursing transfer report for the community nurse, and other care details No additional community services available on a regular/routine basis (usual care). The primary care team consists of a GP (available 24 hours a day), a community nurse (available 24 hours a day), a home help service, and a medical aid supply service which can provide special equipment for use at home for the patient, for example: special beds, equipment for epidural analgesia, etcetera	less than 6 months, age 18 years or older, and being fully informed of diagnosis. Cancer patients admitted to hospital and who were living in Eindhoven were allocated to intervention group, and those from the surrounding areas to the control group N=62 Netherlands		
Wong 2013[232]	Additional community services on a regular/routine basis. (AFTER INTERVENTION) Home palliative care programme: a multiprofessional team consisting of a doctor, a nurse and/or a counsellor. Patient contacts ranged from weekly to monthly home visitations by the ACP members depending on patient's acuity of conditions. Oral medications could be modified or initiated to maximally palliate patients' HF and/or general symptoms. Telephonic consults were made available 24/7to facilitate updates of clinical conditions and delivery of advice and education. No additional community services available on a regular/routine basis (usual care). Usual care. Before intervention.	End-stage HF patients (NYHA class II and IV despite optimal medical treatment and/or cardiac resynchronisation therapy), expected 1 year survival, symptoms or end-of-life psychosocial needs likely to benefit from a multiprofessional approach, with potential for adequate and safe care at home	Hospitalisation	Non-randomised study Category: 4

Study	Intervention and comparison	Population	Outcomes	Comments
		N=44 Singapore		
Youens 2017[238]	Additional community services on a regular/routine basis. Community based Palliative Care Service (PCS). An interdisciplinary service with teams comprising nurses, doctors, care aids, counsellors, chaplains, social workers, and volunteers, in which clinical nurses are case coordinators. Teams are available to provide care around the clock. The service focuses on alleviating physical symptoms and providing psychological and spiritual support for people with terminal illness. No additional community services available on a regular/routine basis (usual care). Usual care. Those who did not access community based PCS.	All decedents between January 2001 and December 2011 in whom cancer was recorded as the cause of death on the WA Cancer registry record, whose usual place of residence was within the area covered by the PCS. N=28561 Australia	Place of death; Hospitalisation; Unplanned admissions; number of visits to A&E; Length of stay	Non-randomised study (retrospective database analysis) Category: 4

Table 3: Summary of studies included in the review on additional community services available in an emergency/acute scenario

Study	Intervention and comparison	Population	Outcomes	Comments
Aoun 2013[9]	Additional community services available in an acute/emergency scenario. People in the personal alarm group (PA) were provided with a button that the patient would press in an emergency. Currently, patients who are considered at risk are advised to have a PA for which they must pay. The alarm is connected to the SCHCS call centre so that when the patient activates the alarm, a SCHCS nurse responds Usual care. SC is provided by an interdisciplinary team comprising general practitioners with a special interest in palliative care, palliative care specialist nurses, counsellors, chaplains, Cas, social workers and volunteers, who work with the patients to control symptoms or address psychosocial needs. Typically, nurses visit patients weekly or fortnightly and Cas visit one to three times per week depending on patients' needs	Cancer or non-cancer diagnosis requiring home-based palliative care, living at home alone, no family carer, understanding and speaking English, no cognitive impairment (clinical judgement of the nurse), no personal alarm at home, telephone landline (if randomised to the PA group N=58 Australia	Quality of life; Satisfaction	RCT One arm of this study is also included in Additional community services on a routine/regular basis review

Study	Intervention and comparison	Population	Outcomes	Comments
Casarett, 2015[41]	Additional community services available in an acute/emergency scenario. Continuous hospice care. Continuous care provides more intensive staffing, of which at least 50% of care hours must be for a licensed nurse. N=8524 Usual care. At a minimum, hospice provides routine home care, which constitutes the majority of hospice days. This level of care provides the services of a visiting nurse and other disciplines, who typically visit several times per week. N=16134	Decedents receiving continuous or standard hospice care the day before they died. N=24658 USA	Preferred and actual place of death	Non-randomised study Little information on care received
Gage 2015[81] (Holdsworth 2015[101])	Additional community services available in an acute/emergency scenario. Rapid response service users N=247 Usual care. Rapid response service non-users N=441 Additional community services available in an acute/emergency scenario. Rapid response service available N=688 Usual care. Rapid response service not available N=265 The rapid response service was delivered by health care assistants and supported by a multiprofessional team. The team had access to a service coordinator	Patients newly referred to the hospice services N=953 UK	Preferred and actual place of death; Use of community services: GP contacts; All community contacts; All Marie Curie visits All out of hours contacts; Hospice contacts; Social services; Number of visits to emergencyA&E; Carers' quality of life (SF-12, EQ5D)	Non-randomised study No description of usual care Only 36% of people in the 'RRS available' group actually accessed the service
Mccaffrey 2013[146]	Additional community services available in an acute/emergency scenario. Palliative Care Extended Packages at Home (PEACH): individualised care package. Services are rapidly mobilised, essential equipment is secured, allied health is coordinated and higher intensity nursing is provided (up to 24h/day for up to 5 days) compared with usual care	Patient of the palliative care team, whose GP is currently involved in care at home or willing to be involved in such care on discharge from hospital. These are	Preferred and actual place of death	RCT

Study	Intervention and comparison	Population	Outcomes	Comments
	Usual care. Usual care encompassed conventional discharge planning with existing community services including specialist palliative care, access to an after-hours number, and equipment from loan pools.	patients with advanced cancer or other life limiting illness who prefer care to be delivered at home and/or a home death with at least one of the following criteria: a) a patient with a complex and unstable symptom management and high care needs, whose clinician thinks readmission to hospital may be prevented by the package, b) a patient with complex and unstable symptom management and high care needs currently admitted in acute hospital/palliative care unit who may not be discharged without comprehensive community services, c) a patient wishing to receive end of life care (anticipated to be within 72hrs duration) at home N=31 Australia		
Purdy 2015[186]	Additional community services available in an acute/emergency scenario. Marie Curie Cancer Care	Patients who died between Sep 2011-Feb	Place of death Acute hospital	NRS 23% used the Delivery

Study	Intervention and comparison	Population	Outcomes	Comments
	Delivering Choice Programme (with out of hours service) users N=616 Usual care. Marie Curie Cancer Care Delivering Choice Programme (with out of hours service) non-users N=1956 Intervention consisted of: Out of hours advice and response lines manned by specialist nurses from 5pm to 1pm weekends and bank holidays Two front of house hospital-based discharge nurses Two end of life care coordinators These services were supported by an electronic end of life care register to record advance care wishes	2012, who were expected to die and potentially eligible for end-of-life care N=829 UK	Home Care home (not usual place of residence) Hospice Community hospital Elsewhere Number of hospital visits Patients with one or more emergency admissions (< 30 days, < 7 days) Mean emergency admissions per patient (< 30 days, < 7 days) Number of visits to accident and emergency Patients with one or more ED attendance (< 30 days, < 7 days) Mean ED attendance per patient (< 30 days, < 7 days)	Choice intervention Out of hours advice line 9% Marie Curie Cancer Care Delivering Choice Programme (without out of hours service) users arm of trial not included in comparison as not considered to be a relevant intervention.

Table 4: Additional community services available on a regular/routine basis – data unsuitable for GRADE due to inadequate reporting of outcome measure

Study	Comparison	Outcome	Intervention results	Intervention group (n)	Comparison results	Comparison group (n)	Risk of bias[a]
Abel 2013	Additional community services on a regular/routine	Preferred and actual place of death (Hospital deaths)	11%	-	26%	-	Very high

Study	Comparison	Outcome	Intervention results	Intervention group (n)	Comparison results	Comparison group (n)	Risk of bias[a]
	basis versus usual care						
Addington-Hall 1992	Additional community services on a regular/routine basis versus usual care	Length of survival (mean days between study entry and death)	Mean 211 days	55	Mean 232 days	64	Very high
Ahlner-elmqvist 2004[4]	Additional community services on a regular/routine basis versus usual care	Length of stay (length of stay in hospital) at end of follow-up	Mean: 18% of their time	119	Mean: 31% of their time	178	Very high
Aiken 2006	Additional community services on a regular/routine basis versus usual care	Quality of life (SF-36) 3 months	COPD patients in the intervention group reported greater Vitality than COPD controls	-	-	-	High
		Quality of life (SF-36) 9 months	Control patients declined in both Physical function and General health while intervention patients did not. Superior Physical functioning and General health emerged in the intervention above control	-	-	-	High

Study	Comparison	Outcome	Intervention results	Intervention group (n)	Comparison results	Comparison group (n)	Risk of bias[a]
			participants.				
Aoun 2013 [9]	Additional community services on a regular/routine basis versus usual care	Quality of life (QoL index) at 12 weeks	Median (range): 6 (2-10)	19	Median (range): 5 (0-9)	20	Very high
		Satisfaction (patients' satisfaction with QoL) at 12 weeks	Median (range): 5.5 (3-10)	19	Median (range): 5 (0-9)	20	Very high
Bakitas 2009[17]	Additional community services on a regular/routine basis versus usual care	Hospitalisation (mean days in hospital)	Mean: 6.6 p=0.14	161	Mean: 6.5	161	High
		Hospitalisation (mean number of emergency department visits)	Mean: 0.86	161	Mean:0.63	161	Very high
		Length of survival (median length of survival)	Median (95%CI): 14 (10.6-18.4)	161	Median (95%CI): 8.5 (7.0-11.1)	161	Very high
Brian Cassel 2016 [30]	Additional community services on a regular/routine basis versus usual care	Length of survival (days to death)	Mean: 201.2	368	Mean: 200.7	1075	Very high
Brumley 2007[32]	Additional community services on a regular/routine basis versus usual care	Satisfaction with care (Reid Gunlach Satisfaction with services) at 90 days	OR 3.37 (0.65-4.96).	N for groups not reported (only total N=149)	-	-	Very high

Study	Comparison	Outcome	Intervention results	Intervention group (n)	Comparison results	Comparison group (n)	Risk of bias[a]
		Preferred and actual place of death (people dying at home)	71% died at home; control group	N for each group not reported.		51% died at home OR 2.2 (1.3-3.7). 75% (n=223) of people included in the final analysis died during the study period; for 98% (n=219) of these site of death data was available.	Very high
Costantini 2003[54]	Additional community services on a regular/routine basis versus usual care	Length of stay (Days in hospital in the 180 days before death)	Median (95%CI) 19.0 (15-23)	189	Median (95%CI) 30.3 (26-34)	378	Very high
Lukas 2013[137]	Additional community services on a regular/routine basis versus usual care	Number of hospitalisations (mean)	1.23	369	2.23	369	Very high
		Total hospital days for all hospitalisation (mean)	14.45	369	11.2	369	Very high
		Probability of any ED visit	OR: 0.4 (intervention versus comparison; p not significant)	369	OR: 0.44	369	Very high
Melin-johansson 2010[152]	Additional community	lobal QoL (AQEL	Mean (IQR) 5.70 (4)	63	Mean (IQR) 4.98 (4)	63	Very high

Study	Comparison	Outcome	Intervention results	Intervention group (n)	Comparison results	Comparison group (n)	Risk of bias[a]
	services on a regular/routine basis versus usual care	questionnaire) at 2 weeks after versus 1 week before intervention					
Sahlen 2016[192]	Additional community services on a regular/routine basis versus usual care	Quality of life (EQ5D)	Mean change score: +0.006	36	Mean change score: -0.024	36	High
Seow 2008	Additional community services on a regular/routine basis versus usual care	Hospitalisation (odds of having one or more hospital admission versus those in comparison group, controlling for time since referral, age, and gender)	OR 0.138 (95%CI 0.03 - 0.57) p=0.006	-	-	-	High
Smeenk 1998[207]	Additional community services on a regular/routine basis versus usual care	Quality of life	the intervention programme contributed significantly (p=0.065) towards a better physical functioning	-	-	-	Very high
Sessa 1996[203]	Additional community services on a regular/routine	Length of stay (days of hospital stay) 3 months before death	Median hospital stay (10th-90th percentile): 17 (0-57) days	317	Median hospital stay (10th-90th percentile): 28 (1-75) days	676	Very high

Study	Comparison	Outcome	Intervention results	Intervention group (n)	Comparison results	Comparison group (n)	Risk of bias[a]
	basis versus usual care						
Wong 2013[232]	Additional community services on a regular/routine basis versus usual care	Hospitalisation (Mean all cause hospitalization)	after intervention: mean 1.0 per patient;	44	before intervention: mean 3.6 per patient	44	Very high
		Hospitalisation (Mean HF-related hospitalization)	after intervention: mean 0.6 per patient	44	before intervention: mean 2.0 per patient	44	Very high
Youens 2017[238]	Additional community services on a regular/routine basis versus usual care	Hospitalisation: Rate ratio all cause hospitalisation at follow-up 12 months before death	1.01 (95% 0.96-1.05)	16530	NA	12031	Very high
		Unscheduled admission: Rate ratio all cause unplanned hospitalization at follow-up 12 months before death	0.94 (95% 0.91-0.97)	16530	NA	12031	Very high
		Accident and emergency visits: Rate ratio all cause ED presentations at follow-up 12 months before death	0.92 (95% 0.89-0.96)	16530	NA	12031	Very high

[a] Risk of bias is from checklist of individual studies, see evidence tables for more details.

Table 5: Additional community services available in an acute/emergency scenario- data unsuitable for GRADE due to inadequate reporting of outcome measure

Study	Comparison	Outcome	Intervention results	Intervention group (n)	Comparison results	Comparison group (n)	Risk of bias[a]
Aoun 2013[9]	Additional community service available in emergency scenario versus usual care	Quality of life at 12 weeks	Median (range): 5 (0-10)	19	Median (range):5 (0-9)	20	Very high

Table 6: Clinical evidence summary: Additional community services (multiple providers, direct clinical care) compared to usual care

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Other additional Community Services	Risk difference with Additional Community Services (routine) (95% CI)
Number of visits to accident and emergency (patients with ≥1 ED admission in the last year of life)	969 (1 study) 1 years	⨁⊖⊖⊖ VERY LOW[a,b] due to risk of bias	RR 0.97 (0.93 to 1.01)	910 per 1000	27 fewer per 1000 (from 64 fewer to 9 more)
Length of stay (mean stay for those with or without an admission)	664 (1 study) 1 years	⨁⊖⊖⊖ VERY LOW[a,b] due to risk of bias		The mean length of stay (mean stay for those with or without an admission) in the control groups was 26.4 days	The mean length of stay (mean stay for those with or without an admission) in the intervention groups was 8.3 lower (12.45 to 4.15 lower)
ED visit (mean ED admissions in the last	664	⨁⊖⊖⊖		The mean ED visit (mean ED	The mean ED visit (mean ED

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Other additional Community Services	Risk difference with Additional Community Services (routine) (95% CI)
year of life)	(1 study) 1 years	VERY LOW[a,b] due to risk of bias		admissions in the last year of life) in the control groups was 1.75	admissions in the last year of life) in the intervention groups was 0.14 lower (0.4 lower to 0.12 higher)
Hospitalisation (mean admissions)	664 (1 study) 1 years	⨁⊖⊖⊖ VERY LOW[a,b] due to risk of bias		The mean hospitalisation (mean admissions) in the control groups was 5.5	The mean hospitalisation (mean admissions) in the intervention groups was 0.7 lower (1.86 lower to 0.46 higher)

[a] Downgraded by 2 increments if the majority of the evidence was from studies with observational/non-randomised study design.
[b] 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

Table 7: Clinical evidence summary: Additional community services (a single provider, no direct clinical care provided) compared to usual care

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Usual care	Risk difference with Additional community services (routine) (95% CI)
Satisfaction (carers agreeing with statement 'care was well coordinated') after bereavement	94 (1 study)	⨁⊖⊖⊖ VERY LOW[a,b,c] due to risk of bias, indirectness,	RR 0.97 (0.7 to 1.33)	628 per 1000	19 fewer per 1000 (from 188 fewer to 207 more)

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Usual care	Risk difference with Additional community services (routine) (95% CI)
		imprecision			
Satisfaction (carers satisfied with care from district nurses)	118 (1 study)	⊕⊖⊖⊖ VERY LOW[a,b,c] due to risk of bias, indirectness, imprecision	RR 1.35 (0.95 to 1.94)	435 per 1000	152 more per 1000 (from 22 fewer to 409 more)
Satisfaction (carers satisfied with care from GP)	118 (1 study)	⊕⊖⊖⊖ VERY LOW[a,b,c] due to risk of bias, indirectness, imprecision	RR 1 (0.78 to 1.28)	677 per 1000	0 fewer per 1000 (from 149 fewer to 190 more)
Satisfaction (carers satisfied with care from hospital)	118 (1 study)	⊕⊖⊖⊖ VERY LOW[a,b,c] due to risk of bias, indirectness, imprecision	RR 1.16 (0.92 to 1.48)	645 per 1000	103 more per 1000 (from 52 fewer to 310 more)
Satisfaction (patients satisfied with care from district nurses)	203 (1 study)	⊕⊖⊖⊖ VERY LOW[a,b,c] due to risk of bias,	RR 1.5 (1.13 to 1.99)	404 per 1000	202 more per 1000 (from 53 more to 400 more)

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Usual care	Risk difference with Additional community services (routine) (95% CI)
		indirectness, imprecision			
Satisfaction (patients satisfied with care from GP)	203 (1 study)	⨁⊖⊖⊖ VERY LOW[a,b,c] due to risk of bias, indirectness, imprecision	RR 1.09 (0.89 to 1.32)	636 per 1000	57 more per 1000 (from 70 fewer to 204 more)
Satisfaction (patients satisfied with care from hospital)	203 (1 study)	⨁⊖⊖⊖ VERY LOW[a,b,c] due to risk of bias, indirectness, imprecision	RR 1.31 (1 to 1.71)	455 per 1000	141 more per 1000 (from 0 more to 323 more)
Preferred and actual place of death (people dying at home)	167 (1 study)	⨁⊖⊖⊖ VERY LOW[a,b,c] due to risk of bias, indirectness, imprecision	RR 1.14 (0.6 to 2.17)	173 per 1000	24 more per 1000 (from 69 fewer to 202 more)
Preferred and actual place of death (people dying elsewhere)	167 (1 study)	⨁⊖⊖⊖ VERY LOW[a,b,c] due to risk of bias,	RR 0.94 (0.14 to 6.53)	25 per 1000	1 fewer per 1000 (from 21 fewer to 137 more)

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Usual care	Risk difference with Additional community services (routine) (95% CI)
		indirectness, imprecision			
Preferred and actual place of death (people dying in hospice)	167 (1 study)	⊕⊖⊖⊖ VERY LOW[a,b,c] due to risk of bias, indirectness, imprecision	RR 0.78 (0.36 to 1.72)	148 per 1000	33 fewer per 1000 (from 95 fewer to 107 more)
Preferred and actual place of death (people dying in hospital)	167 (1 study)	⊕⊖⊖⊖ VERY LOW[a,b,c] due to risk of bias, indirectness, imprecision	RR 0.76 (0.52 to 1.11)	444 per 1000	107 fewer per 1000 (from 213 fewer to 49 more)
Use of community services (people known to occupational therapists)	167 (1 study)	⊕⊖⊖⊖ VERY LOW[a,c] due to risk of bias, imprecision	RR 1.09 (0.8 to 1.5)	457 per 1000	41 more per 1000 (from 91 fewer to 228 more)
Use of community services (people known to social workers)	167 (1 study)	⊕⊖⊖⊖ VERY LOW[a,c] due to risk of bias, imprecision	RR 0.89 (0.62 to 1.28)	432 per 1000	48 fewer per 1000 (from 164 fewer to 121 more)

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Usual care	Risk difference with Additional community services (routine) (95% CI)
Use of community services (patients having contact with district nurses) 2 weeks before final interview	202 (1 study)	⊕⊖⊖⊖ VERY LOW[a,c] due to risk of bias, imprecision	RR 0.94 (0.66 to 1.33)	394 per 1000	24 fewer per 1000 (from 134 fewer to 130 more)
Use of community services (patients having contact with GP-home visit) 2 weeks before final interview	202 (1 study)	⊕⊖⊖⊖ VERY LOW[a,c] due to risk of bias, imprecision	RR 0.96 (0.58 to 1.6)	232 per 1000	9 fewer per 1000 (from 98 fewer to 139 more)
Use of community services (patients having contact with GP-surgery consultation) 2 weeks before final interview	202 (1 study)	⊕⊖⊖⊖ VERY LOW[a,c] due to risk of bias, imprecision	RR 0.69 (0.36 to 1.34)	182 per 1000	56 fewer per 1000 (from 116 fewer to 62 more)
Use of community services (patients having contact with hospice or MacMillan sister) 2 weeks before final interview	202 (1 study)	⊕⊖⊖⊖ VERY LOW[a,c] due to risk of bias, imprecision	RR 0.61 (0.25 to 1.51)	111 per 1000	43 fewer per 1000 (from 83 fewer to 57 more)
Hospitalisation (admissions)	167 (1 study)	⊕⊖⊖⊖ VERY LOW[a,c] due to risk of bias,		The mean hospitalisation (admissions) in the control groups was 3.3 admissions	The mean hospitalisation (admissions) in the intervention groups was 0.8 lower (1.76 lower to 0.16 higher)

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Usual care	Risk difference with Additional community services (routine) (95% CI)
		imprecision			
Length of stay (inpatient days)	167 (1 study)	⨁⊖⊖⊖ VERY LOW[a,c] due to risk of bias, imprecision		The mean length of stay (inpatient days) in the control groups was 40 days	The mean length of stay (inpatient days) in the intervention groups was 15.9 lower (28.32 to 3.48 lower)
Number of hospital visits (outpatient attendance)	167 (1 study)	⨁⊖⊖⊖ VERY LOW[a,c] due to risk of bias, imprecision		The mean number of hospital visits (outpatient attendance) in the control groups was 10.1	The mean number of hospital visits (outpatient attendance) in the intervention groups was 7.9 higher (4.96 to 10.84 higher)
Use of community services (home visits-district nurses, Macmillan nurses, hospital oncology nurses, hospice homecare team)	167 (1 study)	⨁⊖⊖⊖ VERY LOW[a,c] due to risk of bias, imprecision		The mean use of community services (home visits-district nurses, Macmillan nurses, hospital oncology nurses, hospice homecare team) in the control groups was 37.5	The mean use of community services (home visits-district nurses, Macmillan nurses, hospital oncology nurses, hospice homecare team) in the intervention groups was 23 lower (38.4 to 7.6 lower)

[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 or 2 increments because the majority of the evidence had indirect outcomes
[c] Downgraded by 1 increment if the confidence interval crossed one MID or by 2 increments if the confidence interval crossed both MIDs

Table 8: Clinical evidence summary: Additional community services (multiple providers, direct clinical care) compared to usual care

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Usual care	Risk difference with Additional Community Services (routine) (95% CI)
Place of death (home)	280 (1 study)	⊕⊖⊖⊖ VERY LOW[a,b] due to risk of bias, indirectness	RR 4.34 (2.66 to 7.1)	104 per 1000	347 more per 1000 (from 173 more to 634 more)
Place of death (hospice)	280 (1 study)	⊕⊖⊖⊖ VERY LOW[a,b,c] due to risk of bias, indirectness, imprecision	RR 1.04 (0.71 to 1.53)	270 per 1000	11 more per 1000 (from 78 fewer to 143 more)
Place of death (hospital)	280 (1 study)	⊕⊖⊖⊖ VERY LOW[a,b] due to risk of bias, indirectness	RR 0.36 (0.25 to 0.51)	626 per 1000	401 fewer per 1000 (from 307 fewer to 470 fewer)

[a] Downgraded by 2 increments if the majority of the evidence was from studies with observational/non-randomised study design. 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 or 2 increments because the majority of the evidence had indirect outcomes
[c] Downgraded by 1 increment if the confidence interval crossed 1 MID or by 2 increments if the confidence interval crossed both MIDs

Table 9: Clinical evidence summary: Additional community services (a single provider, direct clinical care provided) compared to usual care

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Usual care	Risk difference with Additional community services (routine) (95% CI)
Length of survival (mortality) at 14.6 months	322 (1 study) 14.6 months	⊕⊕⊖⊖ LOW[a,b] due to risk of bias, indirectness	RR 0.94 (0.82 to 1.08)	739 per 1000	44 fewer per 1000 (from 133 fewer to 59 more)

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Usual care	Risk difference with Additional community services (routine) (95% CI)

[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 or 2 increments because the majority of the evidence had indirect outcomes

Table 10: Clinical evidence summary: Additional community services (multiple providers, direct clinical care) compared to usual care

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Usual care	Risk difference with Additional Community Services (routine) (95% CI)
ED visit (ED visit in the last 6 months of life)	193 (1 study1) 6 months	⊕⊖⊖⊖ VERY LOW[b,c] due to risk of bias, imprecision	RR 1 (0.72 to 1.4)	523 per 1000	0 fewer per 1000 (from 146 fewer to 209 more)
Hospitalisation (hospitalisation in the last 6 months of life)	193 (1 study1) 6 months	⊕⊖⊖⊖ VERY LOW[b,c] due to risk of bias, imprecision	RR 1.08 (0.96 to 1.23)	830 per 1000	66 more per 1000 (from 33 fewer to 191 more)
Preferred and actual place of death (people dying at home)	193 (1 study) 6 months	⊕⊖⊖⊖ VERY LOW[c,d] due to risk of bias, indirectness	RR 2.1 (1.43 to 3.1)	261 per 1000	288 more per 1000 (from 112 more to 549 more)

[a] Downgraded by 2 increments if the majority of the evidence was from studies with observational/non-randomised study design.
[b] 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
[c] Downgraded by 1 increment if the confidence interval crossed one MID or by 2 increments if the confidence interval crossed both MIDs
[d] Downgraded by 1 or 2 increments because the majority of the evidence had indirect outcomes

Table 11: Clinical evidence summary: Additional community services (multiple providers, direct clinical care) compared to usual care

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Usual care	Risk difference with Additional Community Services (routine) (95% CI)
Preferred and actual place of death (hospital - overall)	1443 (1 study)	⨁⊖⊖⊖ VERY LOW[a,b] due to risk of bias, indirectness	RR 0.15 (0.1 to 0.21)	572 per 1000	486 fewer per 1000 (from 452 fewer to 515 fewer)
Inappropriate/avoidable ICU admissions (people in ICU during admission) 30 d before death	1443 (1 study)	⨁⊖⊖⊖ VERY LOW[a,b] due to risk of bias, indirectness	RR 0.23 (0.18 to 0.31)	498 per 1000	383 fewer per 1000 (from 344 fewer to 408 fewer)
Unscheduled admissions (people admitted to hospital - overall) within 30 d of death	1443 (1 study)	⨁⊖⊖⊖ VERY LOW[a,b] due to risk of bias, indirectness	RR 0.3 (0.24 to 0.36)	707 per 1000	495 fewer per 1000 (from 452 fewer to 537 fewer)
Hospitalisation (number of hospital days/month - cancer group) 1- 18 months before death	148 (1 study)	⨁⊖⊖⊖ VERY LOW[a,c] due to risk of bias, imprecision		The mean hospitalisation (number of hospital days/month - cancer group) 1- 18 months before death in the control groups was 2.62	The mean hospitalisation (number of hospital days/month - cancer group) 1- 18 months before death in the intervention groups was 1.93 lower (2.8 to 1.06 lower)
Hospitalisation (number of hospital days/month - COPD group) 1- 18 months before death	254 (1 study)	⨁⊖⊖⊖ VERY LOW[a,c] due to risk of		The mean hospitalisation (number of hospital days/month - COPD group) 1- 18 months before death in	The mean hospitalisation (number of hospital days/month - COPD group) 1- 18 months before death in the intervention groups was 0.99 lower

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Usual care	Risk difference with Additional Community Services (routine) (95% CI)
		bias, imprecision		the control groups was 1.89	(1.52 to 0.46 lower)
Hospitalisation (number of hospital days/month - dementia group) 1- 18 months before death	368 (1 study)	⨁⊖⊖⊖ VERY LOW[a,c] due to risk of bias, imprecision		The mean hospitalisation (number of hospital days/month - dementia group) 1- 18 months before death in the control groups was 1.68	The mean hospitalisation (number of hospital days/month - dementia group) 1- 18 months before death in the intervention groups was 0.93 lower (1.46 to 0.4 lower)
Hospitalisation (number of hospital days/month - HF group) 1- 18 months before death	673 (1 study)	⨁⊖⊖⊖ VERY LOW[a,c] due to risk of bias, imprecision		The mean hospitalisation (number of hospital days/month - HF group) 1- 18 months before death in the control groups was 2.17	The mean hospitalisation (number of hospital days/month - HF group) 1- 18 months before death in the intervention groups was 1.45 lower (1.79 to 1.11 lower)
N of hospital visits (number of hospitalisation/month - cancer group) 1- 18 months before death	148 (1 study)	⨁⊖⊖⊖ VERY LOW[a,c] due to risk of bias, imprecision		The mean n of hospital visits (number of hospitalisation/month - cancer group) 1- 18 months before death in the control groups was 0.39	The mean n of hospital visits (number of hospitalisation/month - cancer group) 1- 18 months before death in the intervention groups was 0.25 lower (0.38 to 0.12 lower)
N of hospital visits (number of hospitalisation/month - COPD group) 1- 18 months before death	254 (1 study)	⨁⊖⊖⊖ VERY LOW[a,c] due to risk of bias, imprecision		The mean n of hospital visits (number of hospitalisation/month - COPD group) 1- 18 months before death in the control groups was 0.35	The mean n of hospital visits (number of hospitalisation/month - COPD group) 1- 18 months before death in the intervention groups was 0.2 lower (0.29 to 0.11 lower)
N of hospital visits (number of hospitalisation/month - dementia group)	368 (1 study)	⨁⊖⊖⊖ VERY		The mean n of hospital visits (number of	The mean n of hospital visits (number of hospitalisation/month -

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Usual care	Risk difference with Additional Community Services (routine) (95% CI)
1- 18 months before death		LOW[a,c] due to risk of bias, imprecision		hospitalisation/month - dementia group) 1- 18 months before death in the control groups was 0.27	dementia group) 1- 18 months before death in the intervention groups was 0.16 lower (0.23 to 0.09 lower)
N of hospital visits (number of hospitalisation/month - HF group) 1- 18 months before death	591 (1 study)	⨁⊖⊖⊖ VERY LOW[a,c] due to risk of bias, imprecision		The mean n of hospital visits (number of hospitalisation/month - HF group) 1- 18 months before death in the control groups was 0.34	The mean n of hospital visits (number of hospitalisation/month - HF group) 1- 18 months before death in the intervention groups was 0.23 lower (0.29 to 0.17 lower)

[a] Downgraded by 2 increments if the majority of the evidence was from studies with observational/non-randomised study design. 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 or 2 increments because the majority of the evidence had indirect outcomes
[c] Downgraded by 1 increment if the confidence interval crossed 1 MID or by 2 increments if the confidence interval crossed both MIDs

Table 12: Clinical evidence summary: Additional community services (multiple providers, direct clinical care) compared to usual care

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Usual care	Risk difference with Additional community services (routine) (95% CI)
People dying at home	298 (1 study)	⨁⊖⊖⊖ VERY LOW[a,b] due to risk of bias, indirectness	RR 1.53 (1.31 to 1.79)	568 per 1000	301 more per 1000 (from 176 more to 449 more)

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Usual care	Risk difference with Additional community services (routine) (95% CI)
Number of hospital visits	300 (1 study)	⨁⊖⊖⊖ VERY LOW[b,c] due to risk of bias, imprecision		The mean number of hospital visits in the control groups was 9.35	The mean number of hospital visits in the intervention groups was 6.99 lower (9.46 to 4.52 lower)
Number of visits to accident and emergency (ED visits)	300 (1 study)	⨁⊖⊖⊖ VERY LOWb,c due to risk of bias, imprecision		The mean number of visits to accident and emergency (ED visits) in the control groups was 2.3	The mean number of visits to accident and emergency (ED visits) in the intervention groups was 1.37 lower (1.78 to 0.95 lower)
Use of community services (physicians visits)	300 (1 study)	⨁⊖⊖⊖ VERY LOW[b,c] due to risk of bias, imprecision		The mean use of community services (physicians visits) in the control groups was 11.09	The mean use of community services (physicians visits) in the intervention groups was 5.75 lower (8.9 to 2.6 lower)
Use of community services (skilled nursing care visits)	300 (1 study)	⨁⊖⊖⊖ VERY LOW[b,c] due to risk of bias, imprecision		The mean use of community services (skilled nursing care visits) in the control groups was 4.58	The mean use of community services (skilled nursing care visits) in the intervention groups was 3.72 lower (6.2 to 1.24 lower)
Use of community services (total home health visits)	300 (1 study)	⨁⊖⊖⊖ VERY LOW[b,c] due to risk of bias, imprecision		The mean use of community services (total home health visits) in the control groups was 13.25	The mean use of community services (total home health visits) in the intervention groups was 21.8 higher (14.63 to 28.98 higher)

[a] Downgraded by 1 or 2 increments because the majority of the evidence had indirect outcomes
[b] Downgraded by 1 increment if the confidence interval crossed one MID or by 2 increments if the confidence interval crossed both MIDs
[c] 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

Table 13: Clinical evidence summary: Additional community services (multiple providers, direct clinical care) compared to usual care

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Usual care (Brumley 2007)	Risk difference with Additional community services (routine) (95% CI)
Hospitalisation (people hospitalised) - MDT (In-home palliative care service) versus usual care	297 (1 study)	⊕⊕⊕⊖ MODERATE[a] due to risk of bias	RR 0.58 (0.45 to 0.75)	618 per 1000	260 fewer per 1000 (from 154 fewer to 340 fewer)
N of visits to A&E (people accessing Emergency dept.) - MDT (In-home palliative care service) versus usual care	297 (1 study)	⊕⊖⊖⊖ VERY LOW[a,b,c] due to risk of bias, indirectness, imprecision	RR 0.61 (0.41 to 0.9)	329 per 1000	128 fewer per 1000 (from 33 fewer to 194 fewer)
Length of survival (days of survival after enrolment)	297 (1 study)	⊕⊕⊕⊖ MODERATE[a] due to risk of bias		The mean length of survival (days of survival after enrolment) in the control groups was 242	The mean length of survival (days of survival after enrolment) in the intervention groups was 46 lower (87.51 to 4.49 lower)
Use of community services (people enrolled in hospice) - MDT (In-home palliative care service) versus usual care	297 (1 study)	⊕⊕⊖⊖ LOW[a,c] due to risk of bias, imprecision	RR 0.69 (0.48 to 0.98)	362 per 1000	112 fewer per 1000 (from 7 fewer to 188 fewer)

[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 because the majority of the evidence had indirect outcomes
[c] Downgraded by 1 increment if the confidence interval crossed one MID or by 2 increments if the confidence interval crossed both MIDs

Table 14: Clinical evidence summary: Additional community services (a single provider, direct clinical care provided) compared to usual care

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Usual care	Risk difference with Additional Community Services (routine) (95% CI)
Preferred and actual place of death (home)	59076 (1 study)	⊕⊖⊖⊖ VERY LOW[a,b] due to risk of bias, indirectness	RR 2.2 (2.16 to 2.24)	350 per 1000	420 more per 1000 (from 406 more to 434 more)
Preferred and actual place of death (hospital)	59076 (1 study)	⊕⊖⊖⊖ VERY LOW[a,b] due to risk of bias, indirectness	RR 0.2 (0.19 to 0.2)	410 per 1000	328 fewer per 1000 (from 328 fewer to 332 fewer)
N of hospital visits (patients who attended outpatients) between first MCNS visit and death	59076 (1 study)	⊕⊖⊖⊖ VERY LOW[a] due to risk of bias	RR 0.45 (0.43 to 0.47)	187 per 1000	103 fewer per 1000 (from 99 fewer to 107 fewer)
N of unscheduled admissions (people with emergency admissions) between first MCNS visit and death	59076 (1 study)	⊕⊖⊖⊖ VERY LOW[a,b] due to risk of bias, indirectness	RR 0.31 (0.3 to 0.33)	350 per 1000	241 fewer per 1000 (from 234 fewer to 245 fewer)
N of visits to A&E (people who attended A&E) between first MCNS visit and death	59076 (1 study)	⊕⊖⊖⊖ VERY LOW[a] due to risk of bias	RR 0.28 (0.26 to 0.29)	286 per 1000	206 fewer per 1000 (from 203 fewer to 212 fewer)

[a] Downgraded by 2 increments if the majority of the evidence was from studies with observational/non-randomised study design. 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 or 2 increments because the majority of the evidence had indirect outcomes

Table 15: Clinical evidence summary: Additional community services (multiple providers, direct clinical care) compared to usual care

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Usual care (Gray 1987)	Risk difference with Additional CommServ (routine) (95% CI)
Preferred and actual place of death (home) up to 2 years	196 (1 study)	⨁⊖⊖⊖ VERY LOW[a,b] due to risk of bias, indirectness	RR 3.69 (2.29 to 5.94)	163 per 1000	438 more per 1000 (from 210 more to 805 more)

[a] Downgraded by 2 increments if the majority of the evidence was from studies with observational/non-randomised study design. 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 or 2 increments because the majority of the evidence had indirect outcomes

Table 16: Clinical evidence summary: Additional community services (multiple providers, direct clinical care) compared to other additional community service (multiple providers, direct clinical care)

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Other additional community services (routine)	Risk difference with Additional community services (routine) (95% CI)
Length of survival (mortality at 6 months)	171 (1 study)	⨁⨁⊖⊖ LOW[a,b] due to risk of bias, indirectness	RR 1.02 (0.87 to 1.19)	777 per 1000	16 more per 1000 (from 101 fewer to 148 more)
Length of survival	171 (1 study)	⨁⨁⨁⊖ MODERATE[a] due to risk of bias		The mean length of survival in the control groups was 83.1	The mean length of survival in the intervention groups was 6.9 lower (27.17 lower to 13.37 higher)
Length of survival (survival of people who died)	134 (1 study)	⨁⨁⨁⊖ MODERATE[a] due to risk of bias		The mean length of survival (survival of people who died) in the control groups was 54.5	The mean length of survival (survival of people who died) in the intervention groups was 6.5 lower (21.94 lower to 8.94 higher)

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Other additional community services (routine)	Risk difference with Additional community services (routine) (95% CI)
Length of stay (VA services - emergency room visits)	171 (1 study)	⨁⨁⊖⊖ LOW[a] due to risk of bias		The mean length of stay (VA services - emergency room visits) in the control groups was 0.72	The mean length of stay (VA services - emergency room visits) in the intervention groups was 0.15 lower (0.41 lower to 0.11 higher)
Length of stay (VA services - extended care days)	171 (1 study)	⨁⨁⊖⊖ LOW[a] due to risk of bias		The mean length of stay (VA services - extended care days) in the control groups was 0	The mean length of stay (VA services - extended care days) in the intervention groups was 0.38 higher (0.4 lower to 1.16 higher)
Length of stay (VA services - general bed days)	171 (1 study)	⨁⊖⊖⊖ VERY LOW[a,c] due to risk of bias, imprecision		The mean length of stay (VA services - general bed days) in the control groups was 12.06	The mean length of stay (VA services - general bed days) in the intervention groups was 6.43 lower (10.29 to 2.57 lower)
Length of stay (VA services - intensive care hospital days)	171 (1 study)	⨁⨁⊖⊖ LOW[a] due to risk of bias		The mean length of stay (VA services - intensive care hospital days) in the control groups was 0.45	The mean length of stay (VA services - intensive care hospital days) in the intervention groups was 0.32 lower (1.15 lower to 0.51 higher)
Length of stay (VA services - intermediate bed days)	171 (1 study)	⨁⨁⊖⊖ LOW[a] due to risk of bias		The mean length of stay (VA services - intermediate bed days) in the control groups was 2.52	The mean length of stay (VA services - intermediate bed days) in the intervention groups was 1.48 higher (0.9 lower to 3.86 higher)
Length of stay (VA services - outpatient clinic visits)	171 (1 study)	⨁⊖⊖⊖ VERY LOW[a,c] due to risk of		The mean length of stay (VA services - outpatient clinic visits) in the control groups was	The mean length of stay (VA services - outpatient clinic visits) in the intervention groups was 1.86 lower

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Other additional community services (routine)	Risk difference with Additional community services (routine) (95% CI)
		bias, imprecision		2.59	(3.22 to 0.5 lower)
Length of stay (VA services - rehabilitation days)	171 (1 study)	⨁⨁⊖⊖ LOW[a] due to risk of bias		The mean length of stay (VA services - rehabilitation days) in the control groups was 0.14	The mean length of stay (VA services - rehabilitation days) in the intervention groups was 1.86 lower (3.22 to 0.5 lower)
Length of stay (VA services - total days)	171 (1 study)	⨁⊖⊖⊖ VERY LOW[a,c] due to risk of bias, imprecision		The mean length of stay (VA services - total days) in the control groups was 15.86	The mean length of stay (VA services - total days) in the intervention groups was 5.92 lower (11.03 to 0.81 lower)

[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 because the majority of the evidence had indirect outcomes (not a measure of length of survival)
[c] Downgraded by 1 increment if the confidence interval crossed one MID or by 2 increments if the confidence interval crossed both MIDs

Table 17: Clinical evidence summary: Additional community services (multiple providers, direct clinical care) compared to usual care

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Usual care	Risk difference with Additional Community Services (routine) (95% CI)
Quality of life: QUAL-E - Physical symptoms (1-5, higher scores indicate a better QoL) Scale from: 1 to 5.	76 (1 study) 36 months	⨁⨁⊖⊖ LOWa		The mean quality of life: qual-e - physical symptoms (1-5, higher scores indicate a better qol) in the control groups was 3.37	The mean quality of life: qual-e - physical symptoms (1-5, higher scores indicate a better qol) in the intervention groups was 0.52 higher (0.07 to 0.97 higher)

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Usual care	Risk difference with Additional Community Services (routine) (95% CI)
Quality of life: QUAL-E - Social relationships (1-5, higher scores indicate a better QoL) Scale from: 1 to 5.	76 (1 study) 36 months	⊕⊕⊖⊖ LOWa		The mean quality of life: qual-e - social relationships (1-5, higher scores indicate a better qol) in the control groups was 3.53	The mean quality of life: qual-e - social relationships (1-5, higher scores indicate a better qol) in the intervention groups was 0.19 higher (0.15 lower to 0.53 higher)
Quality of life: QUAL-E - Preparation (1-5, higher scores indicate a better QoL) Scale from: 1 to 5.	76 (1 study) 36 months	⊕⊕⊖⊖ LOWa		The mean quality of life: qual-e - preparation (1-5, higher scores indicate a better qol) in the control groups was 2.49	The mean quality of life: qual-e - preparation (1-5, higher scores indicate a better qol) in the intervention groups was 0.12 lower (0.5 lower to 0.26 higher)
Quality of life: QUAL-E - Control (1-5, higher scores indicate a better QoL) Scale from: 1 to 5.	76 (1 study) 36 months	⊕⊕⊖⊖ LOWa		The mean quality of life: qual-e - control (1-5, higher scores indicate a better qol) in the control groups was 3.73	The mean quality of life: qual-e - control (1-5, higher scores indicate a better qol) in the intervention groups was 0.01 higher (0.24 lower to 0.26 higher)
Quality of life: QUAL-E - Completion (1-5, higher scores indicate a better QoL) Scale from: 1 to 5.	76 (1 study) 36 months	⊕⊕⊖⊖ LOWa		The mean quality of life: qual-e - completion (1-5, higher scores indicate a better qol) in the control groups was 3.31	The mean quality of life: qual-e - completion (1-5, higher scores indicate a better qol) in the intervention groups was 0.17 higher (0.15 lower to 0.49 higher)
Length of stay (admission days in last 6 months)	76 (1 study) 36 months	⊕⊕⊖⊖ LOWa		The mean length of stay (admission days in last 6 months) in the control groups was 17.89 days	The mean length of stay (admission days in last 6 months) in the intervention groups was 3.42 higher (19.61 lower to 26.45 higher)

a Downgraded by 2 increments if the majority of the evidence was from studies with observational/non-randomised study design.

Table 18: Clinical evidence summary: Additional community services (multiple providers, direct clinical care) compared to other additional community service (multiple providers, direct clinical care)

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Other additional Community Services	Risk difference with Additional Community Services (routine) (95% CI)
QoL (EORTOC QLQ-C30 global) (European Organization for Research and Treatment of Cancer Quality of Life Questionnaire)14 days Scale from: 0 to 100.	50 (1 study)	⊕⊖⊖⊖ VERY LOW[a,b] due to risk of bias, imprecision		The mean Qol (EORTOC QLQ-c30 global) 14 days in the control groups was 20.33	The mean Qol (EORTOC QLQ-c30 global) 14 days in the intervention groups was 4.33 lower (13.73 lower to 5.07 higher)
QoL (EORTOC QLQ-C30 global) 28 days Scale from: 0 to 100.	50 (1 study)	⊕⊖⊖⊖ VERY LOW[a,b] due to risk of bias, imprecision		The mean Qol (EORTOC QLQ-c30 global) 28 days in the control groups was 13.33	The mean Qol (EORTOC QLQ-c30 global) 28 days in the intervention groups was 1.33 lower (9.51 lower to 6.85 higher)

[a] Downgraded by 2 increments if the majority of the evidence was from studies with observational/non-randomised study design. 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

Table 19: Clinical evidence summary: Additional community services (multiple providers, direct clinical care) compared to other additional community service (multiple providers, direct clinical care)

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Home Care	Risk difference with Palliative Care Unit (routine) (95% CI)
QoL (EORTOC QLQ-C15 PAL global) 7 days Scale from: 0 to 100.	102 (1 study1) 7 days	⊕⊖⊖⊖ VERY LOWa,b due to risk of		The mean QoL (EORTOC QLQ-C15 PAL global) 7 days in the control groups was 53.27	The mean QoL (EORTOC QLQ-C15 PAL global) 7 days in the intervention groups was 1.64 lower (5.44 lower to 2.16 higher)

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Home Care	Risk difference with Palliative Care Unit (routine) (95% CI)
		bias			

a Downgraded by 2 increments if the majority of the evidence was from studies with observational/non-randomised study design.
b 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

Table 20: Clinical evidence summary: Additional community services (multiple providers, direct clinical care) compared to other additional community service (multiple providers, direct clinical care)

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Day Care Centre	Risk difference with Palliative Care Unit (routine) (95% CI)
QoL (EORTOC QLQ-C15 PAL global) 7 days Scale from: 0 to 100.	78 (1 study) 7 days	⨁⊖⊖⊖ VERY LOWa,b due to risk of bias		The mean QoL (EORTOC QLQ-C15 PAL global) 7 days in the control groups was 65.43	The mean QoL (EORTOC QLQ-C15 PAL global) 7 days in the intervention groups was 13.8 lower (18.74 to 8.86 lower)

a Downgraded by 2 increments if the majority of the evidence was from studies with observational/non-randomised study design.
b 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

Table 21: Clinical evidence summary: Additional community services (multiple providers, direct clinical care) compared to other additional community service (multiple providers, direct clinical care)

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Day Care Centre	Risk difference with Home Care (routine) (95% CI)
QoL (EORTOC QLQ-C15 PAL global) 7 days	78 (1 study)	⨁⊖⊖⊖ VERY		The mean QoL (EORTOC QLQ-C15 PAL global) 7 days in the control	The mean QoL (EORTOC QLQ-C15 PAL global) 7 days in the intervention

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Day Care Centre	Risk difference with Home Care (routine) (95% CI)
Scale from: 0 to 100.	7 days	LOWa,b due to risk of bias		groups was 65.43	groups was 12.16 lower (16.63 to 7.69 lower)

a Downgraded by 2 increments if the majority of the evidence was from studies with observational/non-randomised study design.
b 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

Table 22: Clinical evidence summary: Additional community services (multiple providers, direct clinical care) compared to usual care

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Usual care	Risk difference with Additional Community Services (routine) (95% CI)
Number of hospital admissions	2000 (1 study) 18 months	⨁⨁⨀⨀ LOWa	Rate Ratio 0.66 (0.63 to 0.69)	4634 per 1000	1000 fewer per 1000 (from 1000 fewer to 1000 fewer)
Number of ED visits	2000 (1 study) 18 months	⨁⨀⨀⨀ VERY LOWa,b due to imprecision	Rate Ratio 0.8 (0.73 to 0.87)	1097 per 1000	219 fewer per 1000 (from 143 fewer to 296 fewer)
Hospice enrolment	651 (1 study) 18 months	⨁⨁⨀⨀ LOWa	OR 2.28 (1.42 to 3.64)	371 per 1000	203 more per 1000 (from 85 more to 311 more)

a Downgraded by 2 increments if the majority of the evidence was from studies with observational/non-randomised study design.
b Downgraded by 1 increment if the confidence interval crossed one MID or by 2 increments if the confidence interval crossed both MIDs

Table 23: Clinical evidence summary: Additional community services (a single provider, direct clinical care provided) compared to usual care

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Usual care	Risk difference with Additional Community Services (routine) (95% CI)
Quality of life: MQOL-HK - Global score (0-10, higher scores indicate a better QoL) Scale from: 0 to 10.	84 (1 study) 12 weeks	⨁⨁◯◯ LOW[a,b] due to risk of bias, imprecision		The mean quality of life: mqol-hk - global score (0-10, higher scores indicate a better qol) in the control groups was 6.61	The mean quality of life: mqol-hk - global score (0-10, higher scores indicate a better qol) in the intervention groups was 0.88 higher (0.34 to 1.42 higher)
Quality of life: CHQ-C - Total score (1-7, higher scores indicate a better QoL) Scale from: 1 to 7.	84 (1 study) 12 weeks	⨁◯◯◯ VERY LOW[a,b] due to risk of bias, imprecision		The mean quality of life: chq-c - total score (1-7, higher scores indicate a better qol) in the control groups was 5.31	The mean quality of life: chq-c - total score (1-7, higher scores indicate a better qol) in the intervention groups was 0.1 higher (0.95 lower to 1.15 higher)
Patient satisfaction: PSQ (1-5, higher scores indicate greater satisfaction) Scale from: 1 to 5.	67 (1 study) 12 weeks	⨁⨁◯◯ LOW[a,b] due to risk of bias, imprecision		The mean patient satisfaction: psq (1-5, higher scores indicate greater satisfaction) in the control groups was 2.76	The mean patient satisfaction: psq (1-5, higher scores indicate greater satisfaction) in the intervention groups was 1.24 higher (0.35 to 2.13 higher)
Quality of life: SF-6D (0-1, higher scores indicate a better QoL) Scale from: 0 to 1.	84 (1 study) 12 weeks	⨁⨁⨁◯ MODERATE[a] due to risk of bias		The mean quality of life: sf-6d (0-1, higher scores indicate a better qol) in the control groups was 0.15	The mean quality of life: sf-6d (0-1, higher scores indicate a better qol) in the intervention groups was 0.01 higher (0.06 lower to 0.08 higher)
Quality of life: QALY (0-1, higher scores indicate a better QoL) Scale from: 0 to 1.	84 (1 study) 12 weeks	⨁⨁⨁◯ MODERATE[a] due to risk of bias		The mean quality of life: qaly (0-1, higher scores indicate a better qol) in the control groups was 0.007	The mean quality of life: qaly (0-1, higher scores indicate a better qol) in the intervention groups was 0.01 higher (0 to 0.02 higher)
Number of ED visits	84	⨁⨁◯◯	Rate		

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Usual care	Risk difference with Additional Community Services (routine) (95% CI)
	(1 study) 12 weeks	LOWa,b due to risk of bias, imprecision	Ratio 0.55 (0.36 to 0.85)	1439 per 1000	648 fewer per 1000 (from 216 fewer to 921 fewer)
Length of hospital stay (per patient mean)	84 (1 study) 12 weeks	⨁⨁⊖⊖ LOWa,b due to risk of bias, imprecision		The mean length of hospital stay (per patient mean) in the control groups was 11.8 days	The mean length of hospital stay (per patient mean) in the intervention groups was 6.7 lower (12.27 to 1.13 lower)

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 one MID or by 2 increments if the confidence interval crossed both MIDs

Table 24: Clinical evidence summary: Additional community services (multiple providers, direct clinical care) compared to usual care

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Usual care	Risk difference with Additional Community Services (routine) (95% CI)
Preferred and actual place of death (home)	971 (1 study)	⨁⊖⊖⊖ VERY LOW[a,b] due to risk of bias, indirectness	RR 1.02 (0.92 to 1.12)	700 per 1000	14 more per 1000 (from 56 fewer to 84 more)

[a] Downgraded by 2 increments if the majority of the evidence was from studies with observational/non-randomised study design. 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 or 2 increments because the majority of the evidence had indirect outcomes

Table 25: Clinical evidence summary: Additional community services (multiple providers, direct clinical care) compared to usual care

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Usual care	Risk difference with Additional Community Services (routine) (95% CI)
Number of unscheduled admissions (N of patients admitted)	197 (1 study)	⊕⊖⊖⊖ VERY LOW[a,b,c] due to risk of bias, indirectness, imprecision	RR 0.64 (0.49 to 0.85)	643 per 1000	231 fewer per 1000 (from 96 fewer to 328 fewer)
Length of stay (Bradford subgroup)	138 (1 study)	⊕⊖⊖⊖ VERY LOW[a,c] due to risk of bias, imprecision		The mean length of stay (Bradford) in the control groups was 9.5	The mean length of stay (Bradford) in the intervention groups was 2.4 lower (5.69 lower to 0.89 higher)
Length of stay (Poole subgroup)	59 (1 study)	⊕⊖⊖⊖ VERY LOW[a,c] due to risk of bias, imprecision		The mean length of stay (Poole) in the control groups was 11.3	The mean length of stay (Poole) in the intervention groups was 1 higher (6.02 lower to 8.02 higher)
N of unscheduled admissions (N of admissions per patient – Bradford subgroup)	138 (1 study)	⊕⊖⊖⊖ VERY LOW[a,b,c] due to risk of bias, indirectness, imprecision		The mean number of unscheduled admissions (n of admissions per patient - Bradford) in the control groups was 2.3	The mean number of unscheduled admissions (n of admissions per patient - Bradford) in the intervention groups was 0.3 lower (0.85 lower to 0.25 higher)
N of unscheduled admissions (N of admissions per patient – Poole subgroup)	59 (1 study)	⊕⊖⊖⊖ VERY LOW[a,b,c] due to risk of bias, indirectness, imprecision		The mean number of unscheduled admissions (number of admissions per patient - Poole) in the control groups was 2.4	The mean n of unscheduled admissions (number of admissions per patient - Poole) in the intervention groups was 1 lower (1.54 to 0.46 lower)

[a] Downgraded by 2 increments if the majority of the evidence was from studies with observational/non-randomised study design. 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

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Usual care	Risk difference with Additional Community Services (routine) (95% CI)

[b] Downgraded by 1 or 2 increments because the majority of the evidence had indirect outcomes
[c] Downgraded by 1 increment if the confidence interval crossed 1 MID or by 2 increments if the confidence interval crossed both MIDs

Table 26: Clinical evidence summary: Additional community services (multiple providers, direct clinical care) compared to usual care

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Usual care	Risk difference with Additional community services (routine) (95% CI)
Preferred and actual place of death (Place of death - hospital) - Palliative home care service versus usual care	402 (1 study)	⨁⊖⊖⊖ VERY LOW[a,b,c] due to risk of bias, indirectness	RR 0.31 (0.23 to 0.42)	736 per 1000	508 fewer per 1000 (from 427 fewer to 567 fewer)
Preferred and actual place of death (Place of death - country hospital) - Palliative home care service versus usual care	402 (1 study)	⨁⊖⊖⊖ VERY LOW[a,b,c] due to risk of bias, indirectness	RR 2.42 (1.31 to 4.47)	62 per 1000	88 more per 1000 (from 19 more to 215 more)
Preferred and actual place of death (Place of death - home) - Palliative home care service versus usual care	402 (1 study)	⨁⊖⊖⊖ VERY LOW[a,b,c] due to risk of bias, indirectness	RR 6.85 (4.34 to 10.79)	79 per 1000	462 more per 1000 (from 264 more to 773 more)
Preferred and actual place of death	402	⨁⊖⊖⊖	RR		

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Usual care	Risk difference with Additional community services (routine) (95% CI)
(Place of death - nursing home) - Palliative home care service versus usual care	(1 study)	VERY LOW[a,b,c,d] due to risk of bias, indirectness, imprecision	0.66 (0.35 to 1.22)	124 per 1000	42 fewer per 1000 (from 81 fewer to 27 more)
Hospitalisation (number of hospitalisations in last 2 months of life) - Palliative home care service versus usual care	402 (1 study)	⊕⊖⊖⊖ VERY LOW[a,c] due to risk of bias, indirectness		The mean hospitalisation (number of hospitalisations in last 2 months of life) - palliative home care service versus usual care in the control groups was 1.3	The mean hospitalisation (number of hospitalisations in last 2 months of life) - palliative home care service versus usual care in the intervention groups was 0.9 lower (1.07 to 0.73 lower)
Length of stay (time spent in hospital in the last 2 months of life) - Palliative home care service versus usual care	402 (1 study)	⊕⊖⊖⊖ VERY LOW[a,c] due to risk of bias, indirectness		The mean length of stay (time spent in hospital in the last 2 months of life) - palliative home care service versus usual care in the control groups was 19.6	The mean length of stay (time spent in hospital in the last 2 months of life) - palliative home care service versus usual care in the intervention groups was 15.2 lower (18.08 to 12.32 lower)

[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] The majority of the evidence had indirect outcomes (preferred place of death not reported)
[c] The majority of the evidence was based on indirect intervention.
[d] Downgraded by 1 increment if the confidence interval crossed 1 MID or downgraded by 2 increments if the confidence interval crossed both MIDs

Table 27: Clinical evidence summary: Additional community services (a single provider, direct clinical care provided) compared to usual care

Outcomes	No of	Quality of the	Relative	Anticipated absolute effects

	Participants (studies) Follow up	evidence (GRADE)	effect (95% CI)	Risk with Usual care	Risk difference with Additional Community Services (routine) (95% CI)
Length of survival (deaths since referral (120+ days))	89 (1 study)	⊕⊖⊖⊖ VERY LOW[a] due to imprecision	RR 0.68 (0.37 to 1.23)		
				450 per 1000	144 fewer per 1000 (from 283 fewer to 104 more)
Length of survival (deaths since referral (31-120 days))	89 (1 study)	⊕⊖⊖⊖ VERY LOW[b] due to imprecision	RR 0.72 (0.38 to 1.39)		
				400 per 1000	112 fewer per 1000 (from 248 fewer to 156 more)
Length of survival (deaths since referral (8-30 days))	89 (1 study)	⊕⊖⊖⊖ VERY LOW[b] due to imprecision	RR 2.71 (0.92 to 7.98)		
				150 per 1000	257 more per 1000 (from 12 fewer to 1000 more)

[a] Downgraded by 2 increments if the majority of the evidence was from studies with observational/non-randomised study design. Downgraded by 1 increment if the confidence interval crossed 1 MID or by 2 increments if the confidence interval crossed both MIDs
[b] Downgraded by 1 increment if the confidence interval crossed 1 MID or by 2 increments if the confidence interval crossed both MIDs

Table 28: Clinical evidence summary: Additional community services (a single provider, direct clinical care provided) compared to usual care

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Usual care	Risk difference with Additional Community Services (routine) - SPC team (95% CI)
Preferred and actual place of death (Place of death - hospital) - Specialist palliative care team versus usual care	6218 (1 study)	⊕⊖⊖⊖ VERY LOW[a,b] due to risk of bias, indirectness	RR 0.57 (0.51 to 0.63)		
				285 per 1000	123 fewer per 1000 (from 105 fewer to 140 fewer)
Hospitalisation (last 2 weeks of life) - Specialist palliative care team versus usual care	6218 (1 study)	⊕⊖⊖⊖ VERY LOW[a,c] due to risk of bias, imprecision	RR 0.80 (0.74 to 0.85)		
				392 per 1000	78 fewer per 1000 (from 59 fewer to 102 fewer)

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Usual care	Risk difference with Additional Community Services (routine) - SPC team (95% CI)
Number of visits to A&E (last two weeks of life) - Specialist palliative care team versus usual care	6218 (1 study)	⊕⊖⊖⊖ VERY LOW[a] due to risk of bias	RR 0.84 (0.78 to 0.9)	344 per 1000	55 fewer per 1000 (from 34 fewer to 76 fewer)

[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] The majority of the evidence had indirect outcomes (preferred place of death not reported)
[c] Downgraded by 1 increment if the confidence interval crossed 1 MID or downgraded by 2 increments if the confidence interval crossed both MIDs

Table 29: Clinical evidence summary: Additional community services (multiple providers, direct clinical care) compared to usual care

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Usual care	Risk difference with Additional Community Services (routine) (95% CI)
Preferred and actual place of death (people dying at home)	993 (1 study)	⊕⊖⊖⊖ VERY LOW[a,b] due to risk of bias, indirectness	RR 3.98 (3.1 to 5.1)	110 per 1000	328 more per 1000 (from 231 more to 451 more)
Preferred and actual place of death (people dying at hospital)	993 (1 study)	⊕⊖⊖⊖ VERY LOW[a,b,c] due to risk of bias, indirectness, imprecision	RR 0.69 (0.61 to 0.77)	746 per 1000	231 fewer per 1000 (from 172 fewer to 291 fewer)
Preferred and actual place of death (people dying at nursing home or private clinic)	993 (1 study)	⊕⊖⊖⊖ VERY LOW[a,b] due to risk of bias, indirectness	RR 0.37 (0.22 to 0.63)	135 per 1000	85 fewer per 1000 (from 50 fewer to 105 fewer)

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Usual care	Risk difference with Additional Community Services (routine) (95% CI)
Number of unscheduled admissions (people with >3 hospitalisations) 3 months before death	993 (1 study)	⊕⊖⊖⊖ VERY LOW[a,b,c] due to risk of bias, indirectness, imprecision	RR 0.92 (0.64 to 1.31)	130 per 1000	10 fewer per 1000 (from 47 fewer to 40 more)
Number of unscheduled admissions (people with 1-2 hospitalisations) 3 months before death	993 (1 study)	⊕⊖⊖⊖ VERY LOW[a,b] due to risk of bias, indirectness	RR 0.87 (0.8 to 0.95)	780 per 1000	101 fewer per 1000 (from 39 fewer to 156 fewer)

[a] Downgraded by 2 increments if the majority of the evidence was from studies with observational/non-randomised study design. 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 or 2 increments because the majority of the evidence had indirect outcomes
[c] Downgraded by 1 increment if the confidence interval crossed 1 MID or by 2 increments if the confidence interval crossed both MIDs

Table 30: Clinical evidence summary: Additional community services (multiple providers, direct clinical care) compared to usual care

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Usual care	Risk difference with Additional Community Services (routine) (95% CI)
Preferred and actual place of death (people dying at home)	116 (1 study)	⊕⊖⊖⊖ VERY LOW[a,b,c] due to risk of bias, indirectness, imprecision	RR 1.25 (0.96 to 1.62)	649 per 1000	162 more per 1000 (from 26 fewer to 402 more)
Length of stay (days in hospital at rehospitalisation)	116 (1 study)	⊕⊖⊖⊖ VERY LOW[a,c] due to risk of		The mean length of stay (days in hospital at rehospitalisation) in the control groups was 11.5	The mean length of stay (days in hospital at rehospitalisation) in the intervention groups was 5.7 lower

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Usual care	Risk difference with Additional Community Services (routine) (95% CI)
		bias, imprecision			(11.89 lower to 0.49 higher)
Length of survival (days of survival)	116 (1 study)	⨁⊖⊖⊖ VERY LOW[a,c] due to risk of bias, imprecision		The mean length of survival (days of survival) in the control groups was 68.8	The mean length of survival (days of survival) in the intervention groups was 32.4 higher (8.59 lower to 73.39 higher)

[a] Downgraded by 2 increments if the majority of the evidence was from studies with observational/non-randomised study design. 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 or 2 increments because the majority of the evidence had indirect outcomes
[c] Downgraded by 1 increment if the confidence interval crossed 1 MID or by 2 increments if the confidence interval crossed both MIDs

Table 31: Clinical evidence summary: Additional community services (multiple providers, direct clinical care) compared to usual care

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Usual care	Risk difference with Additional Community Services (routine) (95% CI)
Preferred and actual place of death (people dying in hospital)	28561 (1 study) 10 years	⊕⊖⊖⊖ VERY LOWa,b due to indirectness	RR 0.67 (0.66 to 0.68)	759 per 1000	250 fewer per 1000 (from 243 fewer to 258 fewer)
Preferred and actual place of death (people dying out of hospital)	28561 (1 study) 10 years	⊕⊖⊖⊖ VERY LOWa,b due to indirectness	RR 2.03 (1.96 to 2.11)	241 per 1000	248 more per 1000 (from 231 more to 268 more)
Length of stay for inpatient hospitalisation (last 12 months of life)	28561 (1 study) 10 years	⊕⊕⊖⊖ LOWa			The mean length of stay for inpatient hospitalisation (last 12 months of life) in the intervention groups was 4.19 lower (4.58 to 3.8 lower)

a Downgraded by 2 increments if the majority of the evidence was from studies with observational/non-randomised study design.
b Downgraded by 1 or 2 increments because the majority of the evidence had indirect outcomes

Table 32: Clinical evidence summary: Additional community service (acute/emergency basis) – RRS available versus usual care – RRS not available

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Usual care	Risk difference with Additional Community Services (emergency) (95% CI)
Preferred and actual place of death (people dying in	24658	⊕⊖⊖⊖	RR 0.33		

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Usual care	Risk difference with Additional Community Services (emergency) (95% CI)
inpatient hospice)	(1 study)	VERY LOWa due to indirectness	(0.29 to 0.36)	126 per 1000	84 fewer per 1000 (from 81 fewer to 89 fewer)
a Downgraded by 1 or 2 increments because the majority of the evidence had indirect outcomes					

Table 33: Clinical evidence summary: Additional community service (acute/emergency basis) – RRS available versus usual care – RRS not available

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Usual care (RRS not available) (Holdsworth 2015)	Risk difference with Additional Community Services (emergency) - RRS available (95% CI)
Carers quality of life (EQ5D) 8 months - Rapid response service available versus rapid response service not available	64 (1 study)	⊕⊖⊖⊖ VERY LOW[a,b] due to risk of bias, imprecision		The mean carers quality of life (eq5d) 8 months - rapid response service available versus rapid response service not available in the control groups was 0.77	The mean carers quality of life (eq5d) 8 months - rapid response service available versus rapid response service not available in the intervention groups was 0.05 lower (0.12 lower to 0.02 higher)
Carers quality of life (SF12 Physical) 8 months - Rapid response service available versus rapid response service not availableScale from: 0 to 100.	64 (1 study)	⊕⊖⊖⊖ VERY LOW[a,b] due to risk of bias, imprecision		The mean carers quality of life (sf12 physical) 8 months - rapid response service available versus rapid response service not available in the control groups was 44.27	The mean carers quality of life (sf12 physical) 8 months - rapid response service available versus rapid response service not available in the intervention groups was 1.86 higher (0.99 lower to 4.71 higher)
Carers quality of life (SF12 Mental) 8 months - Rapid response service available	64 (1 study)	⊕⊖⊖⊖ VERY		The mean carers quality of life (sf12 mental) 8 months - rapid	The mean carers quality of life (sf12 mental) 8 months - rapid response

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Usual care (RRS not available) (Holdsworth 2015)	Risk difference with Additional Community Services (emergency) - RRS available (95% CI)
versus rapid response service not available Scale from: 0 to 100.		LOW[a,b] due to risk of bias, imprecision		response service available versus rapid response service not available in the control groups was 46.47	service available versus rapid response service not available in the intervention groups was 4.93 lower (8 to 1.86 lower)
Preferred and actual place of death (Achieved (initial) place of death) - Rapid response service available versus rapid response service not available	953 (1 study)	⊕⊖⊖⊖ VERY LOW[a] due to risk of bias	RR 1.01 (0.9 to 1.13)	619 per 1000	6 more per 1000 (from 62 fewer to 80 more)
Preferred and actual place of death (Achieved (final) place of death) - Rapid response service available versus rapid response service not available	953 (1 study)	⊕⊖⊖⊖ VERY LOW[a] due to risk of bias	RR 0.95 (0.86 to 1.04)	698 per 1000	35 fewer per 1000 (from 98 fewer to 28 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 downgraded by 2 increments if the confidence interval crossed both MIDs

Table 34: Clinical evidence summary: Additional community service (acute/emergency basis) – RRS users versus usual care – RRS non-users

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Usual care (RRS non-users) (Gage 2015)	Risk difference with Additional Community Services (emergency) - RRS users (95% CI)
Preferred and actual place of death (Achieved (initial) place of	681	⊕⊖⊖⊖	RR		

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Usual care (RRS non-users) (Gage 2015)	Risk difference with Additional Community Services (emergency) - RRS users (95% CI)
death) - Rapid response service users versus rapid response service non-users)	(1 study)	VERY LOW[a,b] due to risk of bias, imprecision	1.17 (1.04 to 1.31)	592 per 1000	101 more per 1000 (from 24 more to 184 more)
Number of visits to A&E (N with >1 contact with acute care) - Rapid response service users versus Rapid response service non-users	688 (1 study)	⊕⊖⊖⊖ VERY LOW[a] due to risk of bias	RR 0.92 (0.8 to 1.07)	565 per 1000	45 fewer per 1000 (from 113 fewer to 40 more)
Use of community services (N with >1 contact with GP/primary care) - Rapid response service users versus Rapid response service non-users	426 (1 study)	⊕⊖⊖⊖ VERY LOW[a,b] due to risk of bias, imprecision	RR 1.22 (1.11 to 1.34)	719 per 1000	158 more per 1000 (from 79 more to 244 more)
Use of community services (N with>1 contact with community care) - Rapid response service users versus Rapid response service non-users	688 (1 study)	⊕⊖⊖⊖ VERY LOW[a,b] due to risk of bias, imprecision	RR 1.3 (1.21 to 1.4)	694 per 1000	208 more per 1000 (from 146 more to 278 more)
Use of community services (N with >1 contact with Marie Curie visits) - Rapid response service users versus Rapid response service non-users	688 (1 study)	⊕⊖⊖⊖ VERY LOW[a] due to risk of bias	RR 9.82 (4.17 to 23.11)	14 per 1000	123 more per 1000 (from 44 more to 310 more)
Use of community services (N with >1 contact with out of hours services) - Rapid response service users versus Rapid response service non-users	688 (1 study)	⊕⊖⊖⊖ VERY LOW[a] due to risk of bias	RR 2.1 (1.65 to	191 per 1000	210 more per 1000 (from 124 more to 323 more)

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Usual care (RRS non-users) (Gage 2015)	Risk difference with Additional Community Services (emergency) - RRS users (95% CI)
			2.69)		
Use of community services (N with >1 contact with hospice) - Rapid response service users versus Rapid response service non-users	688 (1 study)	⊕⊖⊖⊖ VERY LOW[a] due to risk of bias	RR 1 (0.99 to 1.01)	1000 per 1000	0 fewer per 1000 (from 10 fewer to 10 more)
Use of community services (N receiving >1 social service) - Rapid response service users versus Rapid response service non-users	688 (1 study)	⊕⊖⊖⊖ VERY LOW[a,b] due to risk of bias, imprecision	RR 1.19 (0.82 to 1.72)	136 per 1000	26 more per 1000 (from 24 fewer to 98 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 downgraded by 2 increments if the confidence interval crossed both MIDs

Table 35: Clinical evidence summary: Additional community service (acute/emergency basis) versus usual care

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Usual care	Risk difference with Additional Community Services (emergency) (95% CI)
Preferred and actual place of death (people dying at home) 28 days	21 (1 study)	⊕⊖⊖⊖ VERY LOW[a,b,c] due to risk of bias, indirectness,	RR 0.7 (0.38 to 1.3)	800 per 1000	240 fewer per 1000 (from 496 fewer to 240 more)

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Usual care	Risk difference with Additional Community Services (emergency) (95% CI)
		imprecision			

[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 or 2 increments because the majority of the evidence had indirect outcomes
[c] Downgraded by 1 increment if the confidence interval crossed 1 MID or by 2 increments if the confidence interval crossed both MIDs

Table 36: Clinical evidence summary: Additional community service (acute/emergency basis) versus usual care

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Usual care	Risk difference with Additional Community Services (emergency) - DCP with OOH (95% CI)
Preferred and actual place of death (Place of death - acute hospital) - Delivering Choice Programme (with out of hours) users versus Delivering Choice Programme (with out of hours) non-users	2572 (1 study)	⨁⊖⊖⊖ VERY LOW[a,b] due to risk of bias, indirectness	RR 0.32 (0.26 to 0.39)	427 per 1000	290 fewer per 1000 (from 260 fewer to 316 fewer)
Preferred and actual place of death (Place of death - community hospital) - Delivering Choice Programme (with out of hours) users versus Delivering Choice Programme (with out of hours) non-users	2572 (1 study)	⨁⊖⊖⊖ VERY LOW[a,b] due to risk of bias, indirectness	RR 3.18 (1.95 to 5.18)	16 per 1000	35 more per 1000 (from 15 more to 67 more)
Preferred and actual place of death (Place	2572	⨁⊖⊖⊖	RR		

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Usual care	Risk difference with Additional Community Services (emergency) - DCP with OOH (95% CI)
of death - home) - Delivering Choice Programme (with out of hours) users versus Delivering Choice Programme (with out of hours) non-users	(1 study)	VERY LOW[a,b] due to risk of bias, indirectness	1.37 (1.26 to 1.5)	398 per 1000	147 more per 1000 (from 103 more to 199 more)
Preferred and actual place of death (Place of death - care home) - Delivering Choice Programme (with out of hours) users versus Delivering Choice Programme (with out of hours) non-users	2572 (1 study)	⊕⊖⊖⊖ VERY LOW[a,b,c] due to risk of bias, indirectness, imprecision	RR 1.06 (0.8 to 1.41)	88 per 1000	5 more per 1000 (from 18 fewer to 36 more)
Preferred and actual place of death (Place of death - care home) - Delivering Choice Programme (with out of hours) users versus Delivering Choice Programme (with out of hours) non-users	2572 (1 study)	⊕⊖⊖⊖ VERY LOW[a,b,c] due to risk of bias, indirectness, imprecision	RR 1.06 (0.8 to 1.41)	88 per 1000	5 more per 1000 (from 18 fewer to 36 more)
Preferred and actual place of death (Place of death - hospice) - Delivering Choice Programme (with out of hours) users versus Delivering Choice Programme (with out of hours) non-users	2572 (1 study)	⊕⊖⊖⊖ VERY LOW[a,b] due to risk of bias, indirectness	RR 5.66 (4.12 to 7.77)	28 per 1000	130 more per 1000 (from 87 more to 190 more)
Preferred and actual place of death (Place	2572	⊕⊖⊖⊖	RR		

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Usual care	Risk difference with Additional Community Services (emergency) - DCP with OOH (95% CI)
of death - elsewhere) - Delivering Choice Programme (with out of hours) users versus Delivering Choice Programme (with out of hours) non-users	(1 study)	VERY LOW[a,b,c] due to risk of bias, indirectness, imprecision	2.12 (0.87 to 5.15)	6 per 1000	7 more per 1000 (from 1 fewer to 25 more)
Number of hospital visits (patients with one or more emergency admissions <30 days) - Delivering Choice Programme (with out of hours) users versus Delivering Choice Programme (with out of hours) non-users	2572 (1 study)	⊕⊖⊖⊖ VERY LOW[a] due to risk of bias	RR 0.85 (0.76 to 0.95)	447 per 1000	67 fewer per 1000 (from 22 fewer to 107 fewer)
Number of hospital visits (patients with one or more emergency admissions <7 days) - Delivering Choice Programme (with out of hours) users versus Delivering Choice Programme (with out of hours) non-users	2572 (1 study)	⊕⊖⊖⊖ VERY LOW[a] due to risk of bias	RR 0.41 (0.32 to 0.53)	239 per 1000	141 fewer per 1000 (from 112 fewer to 163 fewer)
Number of hospital visits (mean emergency admissions per patient <30 days) - Delivering Choice Programme (with out of hours) users versus Delivering Choice Programme (with out of hours) non-users	2572 (1 study)	⊕⊖⊖⊖ VERY LOW[a] due to risk of bias		The mean number of hospital visits (mean emergency admissions per patient <30 days) - delivering choice programme (with out of hours) users versus delivering choice programme (with out of hours) non-users in the control groups was 0.45	The mean number of hospital visits (mean emergency admissions per patient <30 days) - delivering choice programme (with out of hours) users versus delivering choice programme (with out of hours) non-users in the intervention groups was 0.08 higher (0.02 to 0.14 higher)
Number of hospital visits (mean emergency	2572	⊕⊖⊖⊖		The mean number of hospital visits	The mean number of hospital visits

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Usual care	Risk difference with Additional Community Services (emergency) - DCP with OOH (95% CI)
admissions per patient <7 days) - Delivering Choice Programme (with out of hours) users versus Delivering Choice Programme (with out of hours) non-users	(1 study)	VERY LOW[a] due to risk of bias		(mean emergency admissions per patient <7 days) - delivering choice programme (with out of hours) users versus delivering choice programme (with out of hours) non-users in the control groups was 0.25	(mean emergency admissions per patient <7 days) - delivering choice programme (with out of hours) users versus delivering choice programme (with out of hours) non-users in the intervention groups was 0.14 lower (0.17 to 0.11 lower)
Number of visits to A&E (patients with one or more ED attendance <30 days) - Delivering Choice Programme (with out of hours) users versus Delivering Choice Programme (with out of hours) non-users	2572 (1 study)	⊕⊖⊖⊖ VERY LOW[a,c] due to risk of bias, imprecision	RR 0.71 (0.61 to 0.82)		
				364 per 1000	106 fewer per 1000 (from 66 fewer to 142 fewer)
Number of visits to A&E (patients with one or more ED attendance <7 days) - Delivering Choice Programme (with out of hours) users versus Delivering Choice Programme (with out of hours) non-users	2572 (1 study)	⊕⊖⊖⊖ VERY LOW[a] due to risk of bias	RR 0.32 (0.23 to 0.43)		
				221 per 1000	150 fewer per 1000 (from 126 fewer to 170 fewer)
Number of visits to A&E (mean ED attendance per patient <30 days) - Delivering Choice Programme (with out of hours) users versus Delivering Choice Programme (with out of hours) non-users	2572 (1 study)	⊕⊖⊖⊖ VERY LOW[a] due to risk of bias		The mean number of visits to A&E (mean ED attendance per patient <30 days) - delivering choice programme (with out of hours) users versus delivering choice programme (with out of hours) non-users in the control groups was 0.41	The mean number of visits to A&E (mean ED attendance per patient <30 days) - delivering choice programme (with out of hours) users versus delivering choice programme (with out of hours) non-users in the intervention groups was 0.02 lower (0.07 lower to 0.03 higher)

Outcomes	No of Participants (studies) Follow up	Quality of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects	
				Risk with Usual care	Risk difference with Additional Community Services (emergency) - DCP with OOH (95% CI)
Number of visits to A&E (mean ED attendance per patient <7 days) - Delivering Choice Programme (with out of hours) users versus Delivering Choice Programme (with out of hours) non-users	2572 (1 study)	⨁⊖⊖⊖ VERY LOW[a,c] due to risk of bias, imprecision		The mean number of visits to A&E (mean ED attendance per patient <7 days) - delivering choice programme (with out of hours) users versus delivering choice programme (with out of hours) non-users in the control groups was 0.26	The mean number of visits to A&E (mean ED attendance per patient <7 days) - delivering choice programme (with out of hours) users versus delivering choice programme (with out of hours) non-users in the intervention groups was 0.19 lower (0.22 to 0.16 lower)

[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] The majority of the evidence had indirect outcomes (preferred place of death not reported)
[c] Downgraded by 1 increment if the confidence interval crossed 1 MID or downgraded by 2 increments if the confidence interval crossed both MIDs

1.8 Economic evidence

1.8.1 Availability of additional community services on a regular/routine basis

1.8.1.1 Included studies

Seven health economic studies were identified with the relevant comparison and have been included in this review.[22,46,168,180 1,181,238]

These are summarised in the health economic evidence profile below (Table 37) and the health economic evidence tables in Appendix H.

1.8.1.2 Excluded studies

No health economic studies that were relevant to this question were excluded due to assessment of limited applicability or methodological limitations.

See also the health economic study selection flow chart in Appendix C.

1.8.1.3 Summary of studies included in the economic evidence review

Table 37: Health economic evidence profile: Additional community services (routine/regular basis) versus no additional community services/usual care

Study	Applicability	Limitations	Other comments	Incremental cost	Incremental effects	Cost-effectiveness	Uncertainty
Abel 2013 [1](UK) Perspective: UK NHS	Partially applicable[(a)]	Potentially Serious Limitations[(b)]	Economic Analysis: CCA Intervention: Advanced care planning discussions taken place versus no discussions Setting: Hospice Study design: Retrospective cohort analysis with multivariate regression	saves £431 per person in the last year of life	Proportion with at least one emergency admission: 3% lower Proportion dying in hospital: 15% lower Mean length of stay for those with or without an admission: 8.3 days less Mean number of admissions in the last year of life (per patient): 0.7 fewer	NA	NR
Bentur 2014 [22] (Israel) Perspective: Israeli Ministry of Health	Partially applicable[(c)]	Very Serious Limitations[(d)]	Economic Analysis: CCA Study design: Retrospective cohort analysis without multivariate regression Intervention: Home hospice care in addition to regular community care	saves £3,356 per person in the last 6 months of life	Proportion hospitalised at least once: 6% lower Proportion that visited the emergency room at least once: 1% lower Proportion who died at home: 30% lower	NA	NR

Study	Applicability	Limitations	Other comments	Incremental cost	Incremental effects	Cost-effectiveness	Uncertainty
			Population: Patients with metastatic cancer in last 6 months of life				
Chitnis 2013[46] (UK) Perspective: UK NHS	Partially applicable[(e)]	Very Serious Limitations[(f)]	Economic Analysis: CCA Study design: Retrospective cohort analysis with multivariate regression (using matched controls) Intervention: Marie-Curie Nursing Service at home	Adjusted incremental cost saving: saves £1,113 per person	Preferred and actual place of death (home): RR 2.2 Preferred and actual place of death (hospital): RR 0.2 Number of hospital visits (patients who attended outpatients) between first MCNS visit and death: RR 0.45 Number of unscheduled admissions (people with emergency admissions) between first MCNS visit and death: RR 0.31 Number of visits to A&E (people who attended A&E) between first MCNS visit and death: RR 0.28	NA	Sensitivity analysis was done using conditional logistic regression to assess the impact of this modelling strategy on the estimates of the proportional endpoints.
Noble 2014[168] (UK) Perspective: UK	Partially applicable[(g)]	Very Serious Limitations[(h)]	Economic Analysis: CCA Study design: Non-randomised comparative study with	Before any hospital stays: Saves £700 in healthcare utilisation costs After 1 stay	Preferred and actual place of death (home): RR 1.02	NA	NR

Study	Applicability	Limitations	Other comments	Incremental cost	Incremental effects	Cost-effectiveness	Uncertainty
NHS			retrospective activity based costing analysis of the service Intervention: Comprehensive consultant-led specialist palliative care provided in the home versus specialist palliative care provided in a hospice setting	Saves £700 in healthcare utilisation costs After2+ stays No difference in healthcare utilisation costs.			
Pattenden 2013[180] (UK) Perspective: UK NHS	Partially applicable[(i)]	Very Serious Limitations[(j)]	Economic analysis: CCA Study design: Prospective non-randomised cohort study matched with historical controls Intervention: Better together Population: Patients with advanced congestive heart failure	Patient costs in the last year of life: Bradford saves £1,187 Poole saves £848	Number of unscheduled admissions: RR 0.64 Length of stay (Bradford subgroup): 2.4 lower Length of stay (Poole subgroup): 1 higher Number of admissions per patient – Bradford subgroup): 0.3 lower Number of admissions per patient – Poole subgroup): 1 lower	NA	NR
Pham 2014 [181] (Canada) Perspective:	Partially applicable[(k)]	Very serious limitations[(l)]	Economic Analysis: CUA Study design: Probabilistic decision analytic markov model	saves £2,477 per person in last year of life	0.47 more quality-adjusted life days (0.001 QALYs)	ICER (Palliative care team in-home versus usual care): Dominant	Probabilistic and one-way sensitivity analyses conducted to explore key

Study	Applicability	Limitations	Other comments	Incremental cost	Incremental effects	Cost-effectiveness	Uncertainty
Ontario Ministry of Health and Long-Term Care			(microsimulation) Intervention: Palliative care team in-home (the model compared multiple interventions but only the above intervention was considered relevant for this review question.)				sources of variability and uncertainty in the simulated model.
Yousens 2017 [238](Australia) Perspective: Western Australia health system	Partially applicable[(m)]	Very serious limitations[(n)]	Economic Analysis: CCA Study design: Retrospective cohort analysis with multivariate regression (propensity score-weighted) Intervention: Interdisciplinary service	Adjusted difference in mean cost of all hospitalisations and ED presentations in last 12 months: £2,240 lower	Preferred and actual place of death (people dying out of hospital): RR 2.03 All cause hospitalisation at follow-up 12 months before death: Rate Ratio 1.01 All cause unplanned hospitalisation at follow-up 12 months before death: Rate ratio 0.94 All cause ED presentations at follow-up 12 months before death: Rate ratio 0.92 Length of stay (days) for inpatient hospitalisation at follow-up 12 months before death: Mean difference -4.19	NA	NR

Abbreviations: CCA: cost consequence analysis; CUA cost utility analysis; ICER: incremental cost-effectiveness ratio; QALY: quality-adjusted life years;

(a) Right population and intervention. Only a CCA.

(b) No costs of the intervention. Doesn't report many costs for example: non-emergency admissions. The study states that the deaths in hospital in the baseline group are low compared to the national average, therefore the lack of differences in costs (that the study reports of emergency admissions) could be explained by the fact that the specialist palliative care services in both groups are already reducing hospital resource use, and so the impact of ACP could be more about getting people to die in their preferred place (which could however reduce cost as the study also showed that mean hospital care costs are higher for those who died in hospital).

(c) Right population and intervention. Perspective only partly applicable as non UK setting. Only a CCA.

(d) No cost of intervention. Some costs missing. No detailed disaggregated cost/resource use breakdown. Issues with data identification and therefore whether the people in the intervention group have used the intervention appropriately. Control group much bigger than intervention group.

(e) UK based CCA of secondary care costs only.

(f) The costs only include the costs that occur in a hospital setting. Costs that occur in other settings such as primary care are not captured in the analysis. Lower costs in a hospital setting could lead to higher costs in primary or community care. The study cannot tell us whether the intervention is likely to lead to a reduction in the mean overall costs patients incur to the health system as a whole. Potential conflict of interest.

(g) UK based CCA.

(h) The methods for estimating costs for each intervention compared are very different. An activity based costing was only able to be conducted for the Midhurst intervention. The study does not explain the methodology of matching patients who received the Midhurst service to the usual hospice service therefore it is not clear if the patient characteristics were similar. The number of inpatient stays has been used as a proxy for early identification of needing supportive/palliative care but it does not appear that anything else has been controlled for. The study could not collect detailed data on the extent of involvement of primary care services therefore they could not accurately estimate the cost. The study reports national average costs of hospice costs which may not be an accurate cost of hospice use in the local area.

(i) UK based CCA of costs to secondary care.

(j) Data on New York Heart Association (NYHA) scores were not available for the controls so clinical comparability could not be demonstrated. Cost data on outpatient, primary and community care use were not available for either group so analysis only focused on secondary care costs which therefore does not provide enough information to be able to determine if total costs were really lower in the intervention groups. Cost may have been shifted from secondary to primary/community settings. In Bradford, patients in the intervention group were significantly older than their control group with a mean difference of 3.8 years. This could have affected the clinical outcomes observed biasing the results in favour of the intervention. The paper reports after BT the HFSNs in Poole began to receive more of their caseloads from 'care of the elderly' wards, GPs and district nurses which increased the proportion of people in their caseloads with a severity classification of III or IV. This means the cost of the historical controls could be underestimated as they previously had a lower severity case mix of patients.

(k) Not a UK study therefore study population and costs not directly applicable.

(l) Model assumes that last year of life is known which does not reflect reality. Model assumes that interventions do not affect survival time which does not reflect reality. Model assumes that a palliative prognosis can be determined by resource use of patients therefore doesn't account for patients with a terminal illness who do not receive EOL care services in the last year of life, it is not clear how this effects the cost effectiveness results. Cost effectiveness results for in-home palliative care are subject to EOL care in the control group of the RCT study used as evidence of the estimated outcome being the same as the usual care strategy; this is unlikely to be true. The model does not explicitly take into account that some of the interventions are currently provided as part of usual care therefore it is likely that the treatment effects are overestimated. Estimating the intervention effect on HRQOL as well as decrements in QALY weights through downstream resource use risks the possibility of double counting.

(m) Not a UK study therefore study population and costs not directly applicable.

(n) Costs only include the cumulative costs of hospital admissions at the end of life, they do not include the costs of providing the intervention, and therefore it is not possible to determine whether the service is likely to be cost effective.

1.8.2 Availability of additional community services in an acute/emergency scenario

1.8.2.1 Included studies

One health economic studies was identified with the relevant comparison and have been included in this review. [146].This is summarised in the health economic evidence profile below (Table 37) and the health economic evidence tables in Appendix H.

1.8.2.2 Excluded studies

No health economic studies that were relevant to this question were excluded due to assessment of limited applicability or methodological limitations.

See also the health economic study selection flow chart in Appendix

1.8.2.3 Summary of studies included in the economic evidence review

Table 38: Health economic evidence profile: Additional community services to avoid emergency admissions versus no additional services/usual care

Study	Applicability	Limitations	Other comments	Incremental cost	Incremental effects	Cost-effectiveness	Uncertainty
McCaffrey 2013 [146] (Australia) Perspective: Australian health system	Partially Applicable(a)	Very Serious Limitations (b)	Economic analysis: Within trial CEA Study design: RCT Intervention: Palliative care extended packages at home (PEACH)	£2,073	1 more day at home Preferred and actual place of death (people dying at home) 28 days: RR 0.7 (CI: 0.38 to 1.3) ARD 240 fewer per 1000	ICER: £2,073 per day at home gained	Threshold analysis performed which estimated that expected benefits of PEACH over 28 days exceed expected costs of the intervention when the threshold value for one extra day at home exceeded £490.

Abbreviations: ICER: incremental cost-effectiveness ratio; QALY: quality-adjusted life years; RCT: randomised controlled trial

(o) Australian study

(p) Health outcomes are not expressed in QALYs. Short follow-up time of 28 days and only 68% of participants had died during follow-up. Difficult to interpret the cost effectiveness of the intervention as there is no willingness to pay threshold set for an additional day spent at home for people at the end of life. Higher proportion of usual care recruited as inpatients which may restrict days at home. Cost estimated did not include claims data for any additional costs of community care so the true costs of the models of care in each arm may be underestimated, however, costs not expected to differ by arm. Informal care-giver costs not included (as health system perspective taken) but costs could shift from service providers to families. Generalisability of results limited to care provided by similar costing and funding models. Very small sample size, only 8 in the usual care arm.

1.8.3 Health economic costing analysis

End-of-life community services and out-of-hours end-of-life services were the areas of the guideline that were prioritised by the guideline committee for original economic analysis. A costing analysis, with a threshold analysis, was conducted to estimate the total costs of implementing a number of community services, available out-of-hours. The services were assumed to serve 0.8% of a population of approximately 265,000, the average size of a CCG. The figure of 0.8% was used as an estimate for the number of people that should receive some level of end of life care services. Table 39 provides estimates of the total costs of the services included in the costing analysis. For full details please see the End of Life Care costing analysis report, saved separately on the NICE website.

Table 39: Total costs of the out-of-hours community services included in the costing analysis

Out-of-hours community services	Total cost[(a)]	Source
End of life care coordination service	£642,335	Original costing analysis
Out of hours, end of life advice line	£138,424	Original costing analysis
Out of hours, end of life, medication provision service	£7,464	Original costing analysis
End of Life ambulance	£100,000	Original costing analysis
Hospice at home service	£873,023	Original costing analysis

*(a) these costs were estimated assuming that 0.8% of a population of approximately 265,000 people would have access to the services (*please see the End of Life Care costing analysis report, saved separately on the NICE website for details on why the figure of 0.8% was used)*

Table 40 provides estimates of the potential cost savings, per unit reduction in outcome achieved, that might arise from implementing the additional out-of-hours, end-of-life services in the community.

Table 40: Potential cost savings resulting from implementing the additional end-of-life out-of-hours community services

Outcome	Estimated cost saved	Source
Death occurring outside hospital instead of in hospital	£958	163
Inpatient day reduced in an end of life emergency admission	£254	185
End of life emergency admission avoided	£2,919	185

Table 41 reports the results of the threshold analysis. These results provide estimates of the outcomes the service components would need to achieve to make them cost neutral; assuming they were implemented to serve 0.8% of a population of approximately 265,000.

Table 41: Threshold Analysis Results

Service	Percentage reduction in outcomes required to make the service cost neutral		
	Deaths in Hospital	Inpatient Days in Emergency Admissions	Emergency Admissions

Service	Percentage reduction in outcomes required to make the service cost neutral		
End of life care coordination service	63%	6%	6%
Out of hours, end of life advice line	13%	1%	1%
Out of hours, end of life, medication provision service	0.3%	0.07%	0.07%
End of Life ambulance	10%	1%	1%
Hospice at home service	85%	8%	8%

Interpreting the results: Table 41 shows that for the care coordination service to be cost neutral, it would need to achieve a 63% reduction in deaths occurring in hospital, or a 6% reduction in inpatient days spent in emergency admissions for people in the last year of life, or a 6% reduction in emergency admissions of people in the last year of life. However, if reductions in the outcomes were to occur simultaneously, as would be likely to happen in reality, then the reduction required for each individual outcome would be lower.

1.9 Resource costs

The recommendations made based on this review (see section 1.11) may have a substantial impact on resources.

Additional costs could be incurred for the following reasons: the costs of the implementation that adults in the last year of life, their carers and people important to them have access to health and social care professionals who have the skills to: meet their identified care needs, pre-empt and minimise crises and support them to stay in their preferred place of care, if possible. The magnitude of the resource impact depends on the scale to which the above is current practice for end of life care.This will depend on local circumstances. Savings could be made through hospital admissions and hospital deaths avoided and reduced length of stay of hospital spells for people in the last year of life, due to improvements in the needs being met for people in the last year of life through increased access to end of life care services. Further detail can be found in the resource impact tools that support the guideline which will be available after final publication.

1.10 Evidence statements

1.10.1 Additional community services available on a routine/regular basis

1.10.2 Clinical evidence statements

Additional community services - category 1 (single provider, no direct clinical care provided) (2 studies) versus usual care

A single study showed mixed evidence in terms of patients and carers satisfaction. There was between receiving additional community services compared to usual care in terms of carers and patient satisfaction with care from GP and coordination of care. However there was evidence of clinically important benefit in terms of patients and careers satisfaction with care received from district nurses and hospital. The study showed that a clinically important higher proportion of people in the intervention group died in hospital, but no difference between groups in the number of people dying at home, in hospice or elsewhere. The evidence was also mixed in terms of use of community services: the use of community

services was clinically important lower in the intervention group, but there was no difference between groups in terms of contact with community services such as occupational therapists, social workers, district nurses, GP visits or Macmillan nurses. There was no difference between groups for the outcome of admissions to hospital, but for the people who were admitted, there was evidence of a clinically important benefit of the intervention in terms of shorter length of stay. People receiving the intervention however attended a clinically important higher number of outpatient hospital visits. (1 study; n=554; very low quality)

Additional community services - category 2 (multiple providers, no direct clinical care provided) versus usual care

No study was included in this group.

Additional community services - category 3 (single provider, direct clinical care provided) (6 studies) versus usual care

A single study reported no difference between groups in terms of mortality (1 study; n=332; low quality). A different study reported a clinically important benefit of the intervention of the intervention in terms of length of survival between in the short and long term, but a benefit of the comparator in the mid-term (1 study; n=89; very low quality). A third study reported clinically important benefit of the intervention in terms of hospitalisation (1 study; n=59076; very low to low quality). There was mixed evidence in terms of attendance to Accident and emergency department, with a study reporting clinically important benefit of the intervention resulting in fewer attendances (1 study; n=192; very low to low quality), and another single study reporting no difference between groups (1 study; n=59076; very low to low quality). There was also evidence of clinically important benefit of the intervention for deaths at home, and clinically important fewer people dying in hospital (1 study; n=59076; very low quality).

Additional community services - category 4 (multiple providers, direct clinical care provided) (22 studies) versus usual care

Three studies reported the outcome length of survival. One study showed clinically important lower length of survival in the intervention group (1 study; n=297; moderate quality); one study reported no difference at 6 months or overall between groups (1 study; n=171; low quality); one study showed that length of survival was higher in the intervention group (1 study; n=62; very low quality). A single study reported on quality of life, showing no difference between the two groups (1 study; n=72; very low quality).

A number of studies reported on hospitalisation and related outcomes. For the outcome of avoidable admissions to ICU, one study reported a clinically important benefit of the intervention 30 days before death (1 study; n=1443; very low quality). For the outcome of unscheduled admissions to hospital, the same study reported a clinically important benefit of the intervention 30 days before death (1 study; n=1443; very low quality). A second study also showed a clinically important benefit of the intervention in terms of number of patients admitted, but no difference between groups in the mean number of admissions (1 study; n=197; very low quality). For the outcome of length of stay, two single studies reported no clinically important difference between groups (1 study; n=664; very low quality; and 1 study; n=59-138; very low quality). Three single studies however reported a clinically important benefit of the intervention in terms of shorter length of stay (1 study, n=171, low to very low quality; 1 study, n=402, very low quality; 1 study; N=116; very low quality). For the outcome of hospital visits, there was evidence of clinically important benefit of the intervention reported by two single studies (1 study; n=1443; very low quality; and 1 study; n=300; very low quality).For the outcome of visits to emergency department, there was mixed evidence with three single studies reporting no clinically important difference between groups (1 study, n=664-969, very low quality; 1 study, n=193, very low quality; and 1 study, n=6218, very low quality) and two single studies reporting a clinically important benefit of the intervention resulting in fewer ED visits (1 study; n=300; very low quality; and 1 study; n=297; very low

quality). Finally, for the hospitalisation outcome, three single studies reported no clinically important difference between groups (1 study; n=664; very low quality; 1 study; n=193; very low quality; 1 study; n=6218; very low quality), while three single studies reported a clinically important benefit of the intervention (1 study; n=1443; very low quality; 1 study; n=297; moderate quality; 1 study; n=402; very low quality).

Several studies reported on place of death. Seven single studies reported a clinically important benefit of additional services in the number of people dying at home (1 study; n=280; very low quality; 1 study; n=193; very low quality evidence; 1 study; n=298; very low quality;1 study; n=195; very low quality;1 study; n=402; very low quality; 1 study; n=993; very low quality; 1 study; n=116; very low quality). Fiver single studies reported a clinically important difference in the number of people dying in hospital following addition of community services (1 study; n=280; very low quality; 1 study; n=1443; very low quality; 1 study; n=402; very low quality; 1 study; n=993; very low quality; 1 study; n=28561; low quality evidence). One study also found fewer deaths at hospital with additional services (n=not reported; very low quality). One study found no significant difference in the number of people dying at home between groups receiving additional services and those with usual care (1 study; n=971; very low quality). Another saw no clinically important difference in the number of deaths occurring at country hospital or nursing home (1 study; n=402; very low quality).

Two single studies reported on the use of community services. There was evidence of clinically important lower number of visits to GP and skilled nurses (1 study; n=300 low to very low quality). One of the studies reported a clinically important higher number of overall visits (1 study; n=300 low to very low quality), while the other study reported an overall lower number of visits (1 study; n=297 low to very low quality).

1.10.3 Economic evidence statements

- One cost-consequence analysis found that having advanced care planning discussions take place in a hospice setting saved an average of £431 per person in the last year of life. This analysis was assessed as partially applicable with potentially serious limitations.
- One cost-consequence analysis found that having home hospice care in addition to regular community care saved £3,356 per person in hospital utilisation costs in the last 6 months of life. This study was assessed as partially applicable with very serious limitations.
- One cost-consequence analysis estimated that having a Marie-curie nursing service at home saved £1,113 per person in the hospital utilisation costs in last year of life. This study was assessed as partially applicable with very serious limitations.
- One cost-consequence analysis found that having a consultant-led specialist palliative care provided in the home saved £700 per person in hospital utilisation costs for people who had not had any hospital stays, saved £700 per person for people after one stay and for people after2+ stays the study found no difference in hospital utilisation costs. This study was assessed as partially applicable with very serious limitations.
- One cost-consequence analysis found that the “better together” intervention saved £1,187 per person in hospital utilisation costs in Bradford and £848 per person in hospital utilisation costs in Poole. This study was assessed as partially applicable with very serious limitations.
- One cost-utility analysis found that having a palliative care team in-home dominated usual care. This study was assessed as partially applicable with very serious limitations.
- One cost-consequence analysis found that an interdisciplinary service in the community saved £2,240 per person on hospitalisations and ED presentations in the last year of life. This study was assessed as partially applicable with very serious limitations.

1.10.4 Additional community services available in an acute/emergency scenario

1.10.5 Clinical evidence statements

Additional community service (acute/emergency basis) versus usual care (Casarette 2015)

There was evidence of clinically important benefit of the comparator for the outcome of place of death, with fewer people dying in inpatient hospice in the control group (1 study, n=24658, very low quality).

Additional community service (acute/emergency basis) (RRS available) versus usual care (RRS not available) (Holdsworth 2015)

In carers there was a clinically important difference in favour of people who were not offered the service for carers quality of life (EQ-5D) and quality life (SF-36 mental). There was no clinically important difference for carers quality of life (SF-36 physical) or for the proportion of people achieving their preferred initial or final actual place of death. (1 study; n=64-953; very low quality)

Additional community service (acute/emergency basis) (RRS users) versus usual care (RRS non-users) (Gage 2015)

There was a clinically important difference in favour of people who used the service for preferred (initial) and actual place of death. A clinically important higher proportion of users had more than one contacts with community services (GP/primary care or community care), one or more visits from a Marie Curie professional or one or more contacts with an out of hours service. There was no clinically important difference between the groups with respect to the proportion of people with one or more visits to accident and emergency, acute care, a hospice or with social services. (1 study; n=426-681; very low quality)

Additional community service (acute/emergency basis) versus usual care (Mccaffrey 2013)

There was evidence of clinically important benefit of the comparator for the outcome of place of death, with more people dying at home in the control group (1 study, n=21, very low quality).

Additional community service (acute/emergency basis) versus usual care (Purdy 2015)

For the outcome of actual place of death there was a clinically important difference between users compared to non-users with the former having a lower proportion of people dying in an acute hospital and elsewhere. There was a clinically importance difference between users compared to non-users with the former having a greater proportion of people dying in a community hospital, at home and in hospice. There was no clinically important difference between users compared to non-users for the proportion of people dying in a care home and ‘elsewhere’.

There was a clinically important difference between users compared to non-users with the former having a lower proportion of people with one or more emergency admissions and visits to the accident and emergency department within the last 30 and 7days.

There was no clinically important difference between users compared to non-users for the proportion of people for the mean number of patients with one more emergency admissions,

visits to the accident and emergency department per patient at 30 and 7 days (1 study; n=2572; very low quality).

1.10.6 Economic evidence statements

- One cost-effectiveness analysis found that having palliative care extended packages at home (PEACH) cost £2,073 per day at home gained. This analysis was assessed as partially applicable with very serious limitations.

The threshold analysis conducted on different 'out of hours' community end of life services found that the services would be considered good value of money for the average CCG if they achieved:

- Care coordination service:
  - 61% reduction in number of hospital deaths, or
  - 6% reduction in emergency inpatient days of people in the last year of life, or
  - 6% reduction in emergency admissions of people in the last year of life
- Out-of-hours end-of-life advice line:
  - 13% reduction in number of hospital deaths, or
  - 1% reduction in emergency inpatient days of people in the last year of life, or
  - 1% reduction in emergency admissions of people in the last year of life
- Out-of-hours end-of-life Pharmacy service:
  - 1% reduction in number of hospital deaths, or
  - 0.06% reduction in emergency inpatient days of people in the last year of life, or
  - 0.06% reduction in emergency admissions of people in the last year of life
- End-of-life ambulance service
  - 10% reduction in number of hospital deaths, or
  - 1% reduction in emergency inpatient days of people in the last year of life, or
  - 1% reduction in emergency admissions of people in the last year of life
- Hospice at home
  - 83% reduction in number of hospital deaths, or
  - 8% reduction in emergency inpatient days of people in the last year of life, or
  - 8% reduction in emergency admissions of people in the last year of life

1.11 Recommendations

E1. Provide adults approaching the end of their life, their carers and other people important to them with access to the expertise of highly skilled health and social care practitioners, when needed, to:

- meet complex care and support needs
- prevent and minimise crises
- support people to stay in their preferred place of care, if possible.

E2. Provide care from health and social care practitioners with the skills to meet the person's identified needs, which may be:

- disease-specific, including symptom management and access to medication
- physical
- psychological
- social, including support and advice (for example, signposting advice on benefits and finance)
- support with activities of daily living, including access to equipment and rehabilitation services

- spiritual
- cultural.

1.12 Rationale and impact

1.12.1 Why the committee made the recommendations

The evidence showed that a multipractitioner approach to care was favourable and had a positive impact on supporting adults to stay in their preferred place of care. The committee agreed that the skills and expertise of many specialities and disciplines is needed to meet people's varied and changing needs. However, there is no clear evidence on the ideal composition of a multipractitioner team and so instead of identifying specific roles the committee set out the type of support people may need access to as they approach the end of their life.Impact of the recommendations on practice

The recommendations reflect current good practice available in some services, but there is variation nationally. Care that meets the person's identified needs and is delivered by health and social care practitioners with the relevant skills may reduce costs by minimising crises and helping to avoid emergency unplanned care and unnecessary hospital admissions. Full details of the evidence and the committee's discussions can be found in evidence review E: multiprofessional team.

1.13 The committee's discussion of the evidence

1.13.1 Interpreting the evidence

1.13.2 The outcomes that matter most

Additional community services on a regular/routine basis

The committee identified quality of life, and preferred place of care and death as the critical outcomes for identifying people in their last year of life. The following outcomes were identified as important: length of survival, length of stay, length of survival hospitalisation, number of hospital visits, number of visits to accident and emergency, number of unscheduled admissions, use of community services, avoidable or inappropriate admissions to ICU, inappropriate attempts at cardiopulmonary resuscitation, staff satisfaction, patient or carer reported outcomes and carer health.

See tables 7 and 8 in the Methods chapter for a detailed explanation of why the committee selected these outcomes.

For the critical outcomes, six studies reported quality of life of people in the last year of life. Ten studies reported actual place of death, which was an indirect outcome for actual place of death compared to preferred place of death. Seven studies reported the outcome length of survival. None of the studies reported actual and preferred place of care.

For the important outcomes, length of stay, hospitalisation, number of hospital visits, number of visits to accident and emergency, number of unscheduled admissions and avoidable/inappropriate admissions to ICU were overall reported by 17 studies. 3 studies reported use of community services and 1 study reported patient/carer reported outcomes (satisfaction). No studies reported inappropriate attempts at cardiopulmonary resuscitation or staff satisfaction.

Additional community services in an acute/emergency scenario

For the critical outcomes, two studies reported quality of life of people in the last year of life or their carers'. Three studies reported actual place of death, which was an indirect outcome for actual place of death compared to preferred place of death. None of the studies reported length of survival and actual and preferred place of care.

For the important outcomes, one study reported on number of hospital visits, two studies reported on number of visits to accident and emergency. 1 study reported use of community services and 1 study reported patient/carer reported outcomes (satisfaction). No studies reported length of stay, hospitalisation, number of unscheduled admissions and avoidable/inappropriate admissions to ICU, inappropriate attempts at cardiopulmonary resuscitation or staff satisfaction.

1.13.2.1 The quality of the evidence

Additional community services on a regular/routine basis

The quality of the evidence ranged from very low to moderate. This was due to study design, selection and performance bias, resulting in a high risk of bias rating, and imprecision . Indirectness in some outcomes (for example: actual and final place of death; hospitalisation) further contributed to the final GRADE rating.

A number of outcomes (for example: length of survival; hospitalisation; quality of life) were reported as median only, or mean only, therefore conclusions on the efficacy based on these outcomes could not be made with any degree of certainty.

Additional community services in an acute/emergency scenario

For the majority of evidence in this review, the quality received a GRADE rating of very low. This was mainly due to selection and performance bias, resulting in a high risk of bias rating, as well as the imprecise nature of the results extracted and analysed in this review. Indirectness in some outcomes (for example: actual and final place of death) further contributed to the final GRADE rating.

Some evidence was obtained from non-randomised studies, which scored a very low GRADE quality rating.

A number of outcomes (for example: quality of life; satisfaction) were reported as median only, therefore conclusions on the efficacy based on these outcomes could not be made with any degree of certainty.

1.13.2.2 Benefits and harms

Additional community services on a regular/routine basis

To ease the interpretation of the evidence included in this review, the Committee agreed to group the studies based on the intensity of the resources used for service delivery, taking into consideration the level of care, staff and other aspects of the interventions.

For the evidence regarding category 1 (additional community services delivered by a single provider, no direct clinical care provided), a clinically important benefit of the intervention was observed in terms of place of death and length of stay. Mixed evidence was available for patient and carer satisfaction and use of community services. A benefit of the comparator was observed in terms of hospital visits. The Committee noted that the evidence mainly came from a single UK-based study conducted in 1992. The Committee commented that the evidence from this study might be outdated and not directly applicable to the current provision of services.

For the evidence regarding category 3 (additional community services delivered by a single provider, direct clinical care provided), benefit of the intervention was observed in terms of hospitalisation and place of death, with more people in the intervention group dying at home. There was some evidence of benefit of the intervention in terms of emergency department attendance, and mixed evidence in terms of mortality. The Committee commented that some evidence for this category came from a UK-based large retrospective study, albeit of very low quality.

For the evidence regarding category 4 (additional community services delivered by multiple providers, direct clinical care provided), the Committee observed that most interventions were delivered by a core team composed of a doctor or specialist and/or a social worker with specific palliative training. The core service was in most cases provided to both the person dying and their family, and commonly included elements of planning and coordination, education (self-management), disease and symptom management, palliative care interventions, on call emergency care, and emotional, social, spiritual support. Other components of the team could include district nurses, specialist doctors, spiritual care advisors or counsellors, psychologists, volunteers, physiotherapists, occupational therapists or other healthcare assistants. The GP was often seen as key for the optimal delivery of the intervention, but was not part of the intervention itself. Overall, the Committee noted that there was mixed evidence in terms of length of survival, and no difference between groups in terms of quality of life. There was some evidence of benefit of the intervention in terms of hospitalisation and place of death, and evidence of benefit in the use of community services.

Considering the body of evidence overall, it was difficult for the Committee to interpret the meaning of the evidence for mortality, and there was evidence of no clinically important difference between the groups receiving additional community services and usual care in terms of quality of life. There was evidence of clinically important benefit in terms of place of death, and overall evidence of benefit in terms of hospitalisation and related outcomes (length of stay, number of hospital visits, number of visits to A&E, number of unscheduled admissions, avoidable/inappropriate admissions to ICU), while it was difficult for the Committee to interpret the meaning of the evidence for the use of community services.

Additional community services in an acute/emergency scenario

Overall, the Committee noted that the evidence showed mixed results in terms of quality of life and place of death, with some evidence showing a benefit of usual care, and other studies showing no difference between groups. For the outcome of preferred and actual place of death, the Committee observed that the intervention resulted in no clinically important difference, and higher rate of achieving preferred place of death. In general, fewer people in the intervention group died at hospital, but inconsistent results were noted on deaths at home. There was mostly no difference between groups in terms of hospitalisation and number of hospital visits, with some benefit of the intervention. Number of visits to A&E was also generally lower in the intervention group. Overall no difference between groups was observed for patient satisfaction.

1.13.3 Other factors the committee took into account

The Committee agreed there was not enough evidence to formulate an evidence-based recommendation making a clear recommendation on a model of community services. The Committee discussed that one model of care across the UK would be inappropriate and that different regions and populations would require a different service (for example, the services for rural and urban areas would look different). They agreed on a consensus recommendation stating people should have access to the appropriate community services they need to enable them to avoid admission to hospital.

1.13.4 Cost effectiveness and resource use

The implementation or reorganisations of community services could produce potential cost savings to the NHS. These cost savings might arise, most notably, through reductions in avoidable hospital admissions, reductions in hospital length of stay and reductions in the proportion of deaths occurring in hospital. If costs saved from the improved outcomes listed above were to outweigh the cost of implementation and the on-going costs of providing the community services, then the services would be considered to be cost saving to the NHS. However, if the community services were to cost more to run than the cost that were being saved, then the implementation of such services might not be considered an efficient use of resources. It is clear that implementing additional services in the community would free up resources in hospitals and shift the need into the community, but the overall effect this would have on the cost to the system as a whole is highly uncertain.

Seven health economic studies were identified that compared implementing additional services in the community to usual care (no additional community services). The studies were all partially applicable and the quality of the studies ranged from having potentially serious limitations to very serious limitations. The main limitation of nearly all of the studies was that, although they demonstrated costs savings from the interventions in terms of hospital utilisation costs, they did not provide information on the upfront and on-going costs of the interventions themselves, making it not possible to determine whether overall, they would be cost neutral or saving to implement. One of the studies was a cost-utility analysis analysing a number of different end of life interventions, some of which were community based. However the study was not based on UK data therefore was not directly applicable to a UK service model.

One health economic study was identified comparing additional community services to avoid emergency admissions versus usual care (no additional services). This study was assessed as partially applicable with very serious limitations.

The committee felt that the quality of the health economic evidence was too low to be able to help them to determine whether any of the additional community interventions in the literature would be cost effective.

The committee discussed the issue that the current political focus on shifting end of life care from hospitals into the community might not lead to overall cost savings for the NHS, as the cost of providing care in the community can be as costly as hospital care. The other issue the committee discussed was that there are extremely limited resources available in the community, for example there has been a significant reduction in the number of district nurses over the last five years. Furthermore, the level of services regions are able to provide in the community will be largely constrained by the limited resources available and shortfalls in the number of community trained health care professionals.

The committee felt that community services and out-of-hours services were extremely important areas of the guideline where any potential recommendations would be likely to lead to a significant resource impact; therefore they were prioritised as areas for original economic analysis. Due to the low quality of the clinical evidence it was not possible to conduct an evidence based cost-effectiveness analysis. A cost analysis was conducted for different out-of-hours community interventions identified by the committee, from the literature or from the call for evidence (please see the details of the analysis in the separate report via the NICE website) The committee identified deaths occurring outside hospital, length of stay in end of life emergency admissions and emergency admissions as the outcomes for the analysis. The cost analysis also included a threshold analysis which determined the reductions required in outcomes listed above, for a hypothetical region representing an average size CCG, to make the services cost neutral.

The committee used the results of the threshold analysis to inform their recommendations regarding having an out-of-hours advice line dedicated to end of life, a dedicated ambulance

services for end of life patients, and an out-of-hours end-of-life pharmacy service as the committee felt confident that the outcomes needed to recover the costs of these interventions could be achieved, and therefore felt the interventions were likely to be a good use of NHS resources. The committee felt more uncertain about whether the care coordination service and hospice at home components would be able to achieve the required outcomes needed to make them cost neutral.

It is important to note that the illustrative costs provided in the cost analysis that were presented to the committee to aid the decisions were highly subjective and do not reflect the estimated actual cost of implementing the services in reality. In reality the costs will vary significantly according to the specific region and are therefore extremely difficult to estimate.

The committee noted that geographical, societal, economic and epidemiological differences between regions mean that the optimal end-of-life service model will differ by locality and will be determined by a number of varying factors. The committee also noted that due to wide scale variation in the level of services currently available, the level of reorganisation required would need to be tailored to compliment what is currently already provided, and the resource impact of any recommendations will depend on this as well.

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Appendices

Appendix A: Review protocols

Table 42: Review protocol for what additional community services are needed to support people in their last year of life to stay in their usual place of residence

Question number: Q9

Relevant section of Scope:

Service delivery models for end of life care, including both acute, community and third sector settings covering:

- types of services (supportive and palliative care) provided by generalists and specialists during the course of the last year of life,
- who delivers the services and how, multidisciplinary team composition
- timing and review of service provision,
- location of services, for example, place of care
- out of hours, weekend and 24/7 availability of services.

Field names are based on PRISMA-P.]

ID	Field	Content
I	Review question	What additional community services are needed to support people in their last year of life to stay in their usual place of residence?
II	Type of review question	Intervention A review of health economic evidence related to the same review question was conducted in parallel with this review. For details see the health economic review protocol for this NICE guideline.
III	Objective of the review	To identify what additional community services are needed to support people in their last year of life to stay in their usual place of residence
IV	Eligibility criteria – population / disease / condition / issue / domain	Adults (aged over 18 or over) with progressive life-limiting conditions thought to be entering the last year of life.
V	Eligibility criteria – intervention(s) / exposure(s) / prognostic factor(s)	Availability of additional community services on a regular/routine basis to support people in their last year of life to stay in their usual place of residence, for example: • Physiotherapy • Occupational therapy • Speech and language therapy • Palliative care rehabilitation • Rehabilitation • Social care • Specialist psychology • Counselling • Benefits advice

		• Complementary therapies • Emotional and spiritual
VI	Eligibility criteria – comparator(s) / control or reference (gold) standard	• To each other (different ways of providing additional services; alone or in combination) • No additional community services available (usual care)
VII	Outcomes and prioritisation	CRITICAL • Quality of life (Continuous) • Preferred and actual place of death (Dichotomous) • Preferred and actual place of care (Dichotomous) IMPORTANT • Length of survival (Continuous) • Length of stay (Continuous) • Hospitalisation (Dichotomous) • Number of hospital visits (Dichotomous) • Number of visits to accident and emergency (Dichotomous) • Number of unscheduled admissions (Dichotomous) • Use of community services (Dichotomous) • Avoidable/inappropriate admissions to ICU (Dichotomous) • Inappropriate resuscitation (Dichotomous) Staff satisfaction (Continuous) Patient/carer reported outcomes (satisfaction) (Continuous)
VIII	Eligibility criteria – study design	• Systematic reviews • RCTs • Non-randomised comparative studies, including before and after studies.
IX	Other inclusion exclusion criteria	Exclusions: • Children (17 years or younger) • Studies will only be included if they reported one or more of the outcomes listed above • Descriptive (non-comparative) studies will be excluded
X	Proposed sensitivity / subgroup analysis, or meta-regression	Subgroups to be analysed if heterogeneity found: • Younger adults (aged 18-25) • Frail elderly • People with dementia • People with hearing loss • People with advanced heart and lung disease • People in prisons • Socioeconomic inequalities (people from lower income brackets) • Homeless people/vulnerably housed • Travelers • People with learning difficulties • People with disabilities • People with mental health problems • Migrant workers

		• LGBT • People in whom life-prolonging therapies are still an active option
XI	Selection process – duplicate screening / selection / analysis	Quality assurance will be undertaken by a senior research fellow prior to completion. Review strategy/other analysis: • Information on identification tools used as part of a service will be extracted. • Due to the expected complexity of the service models implemented in the studies, studies will be reported separately if necessary. In such case, studies on the populations included in the subgroup list will be highlighted to the Committee and will be considered when making the recommendations
XII	Data management (software)	• Pairwise meta-analyses were performed using Cochrane Review Manager (RevMan5). • GRADEpro was used to assess the quality of evidence for each outcome. • Endnote was used for: ○ Bibliography, citations, sifting and reference management • Evibase was used for Data extraction and quality assessment / critical appraisal
XIII	Information sources – databases and dates	Clinical search databases to be used: Medline, Embase, Cochrane Library, Current Nursing and Allied Health Literature (CINAHL), PsycINFO, Healthcare Management Information Consortium (HMIC), Social Policy and Practice (SSP), Applied Social Sciences Index and Abstracts (ASSIA) Date: All years Health economics search databases to be used: Medline, Embase, NHSEED, HTA Date: Medline, Embase from 2014 NHSEED, HTA – All years Language: Restrict to English only A call for evidence was also conducted.
XIV	Identify if an update	Not applicable
XV	Author contacts	https://www.nice.org.uk/guidance/indevelopment/gid-cgwave0799
XVI	Highlight if amendment to previous protocol	For details please see section 4.5 of Developing NICE guidelines: the manual.
XVII	Search strategy – for one database	For details please see Appendix B
XVIII	Data collection process – forms / duplicate	A standardised evidence table format will be used, and published as Appendix D of the evidence report.
XIX	Data items – define all variables to be collected	For details please see evidence tables in Appendix D (clinical evidence tables) or H (health economic evidence tables).
XX	Methods for assessing	Standard study checklists were used to critically appraise

	bias at outcome / study level	individual studies. For details please see section 6.2 of Developing NICE guidelines: the manual The risk of bias across all available evidence was evaluated for each outcome using an adaptation of the 'Grading of Recommendations Assessment, Development and Evaluation (GRADE) toolbox' developed by the international GRADE working group http://www.gradeworkinggroup.org/ [Please document any deviations/alternative approach when GRADE isn't used or if a modified GRADE approach has been used for non-intervention or non-comparative studies.]
XXI	Criteria for quantitative synthesis	For details please see section 6.4 of Developing NICE guidelines: the manual.
XXII	Methods for quantitative analysis – combining studies and exploring (in)consistency	For details please see the separate Methods report for this guideline.
XXIII	Meta-bias assessment – publication bias, selective reporting bias	For details please see section 6.2 of Developing NICE guidelines: the manual. [Consider exploring publication bias for review questions where it may be more common, such as pharmacological questions, and certain disease areas. Describe any steps taken to mitigate against publication bias, such as examining trial registries.]
XXIV	Confidence in cumulative evidence	For details please see sections 6.4 and 9.1 of Developing NICE guidelines: the manual.
XXV	Rationale / context – what is known	For details please see the introduction to the evidence review.
XXVI	Describe contributions of authors and guarantor	A multidisciplinary committee [https://www.nice.org.uk/guidance/indevelopment/gid-cgwave0799] developed the evidence review. The committee was convened by the National Guideline Centre (NCommittee) and chaired by Mark Thomas in line with section 3 of Developing NICE guidelines: the manual. Staff from NCommittee undertook systematic literature searches, appraised the evidence, conducted meta-analysis and cost-effectiveness analysis where appropriate, and drafted the evidence review in collaboration with the committee. For details please see Developing NICE guidelines: the manual.
XXVII	Sources of funding / support	NCommittee is funded by NICE and hosted by the Royal College of Physicians.
XXVIII	Name of sponsor	NCommittee is funded by NICE and hosted by the Royal College of Physicians.
XXIX	Roles of sponsor	NICE funds NCommittee to develop guidelines for those working in the NHS, public health and social care in England.
XXX	PROSPERO registration number	Not registered

Table 43: Review protocol: Reducing inappropriate or avoidable admissions

Question number: Q9

Relevant section of Scope:

Service delivery models for end of life care, including both acute, community and third sector settings covering:

- types of services (supportive and palliative care) provided by generalists and specialists during the course of the last year of life,
- who delivers the services and how, multidisciplinary team composition,
- timing and review of service provision,
- location of services, for example, place of care
- out of hours, weekend and 24/7 availability of services.

Field names are based on PRISMA-P.]

ID	Field	Content
I	Review question	What provision of additional community services should be available to reduce inappropriate/avoidable admissions in people in their last year of life?
II	Type of review question	Intervention A review of health economic evidence related to the same review question was conducted in parallel with this review. For details see the health economic review protocol for this NICE guideline.
III	Objective of the review	To identify what provision of additional community services should be available to reduce inappropriate/avoidable admissions in people in their last year of life
IV	Eligibility criteria – population / disease / condition / issue / domain	Adults (aged over 18 or over) with progressive life-limiting conditions thought to be entering the last year of life.
V	Eligibility criteria – intervention(s) / exposure(s) / prognostic factor(s)	Availability of additional community services in an acute/emergency scenario (alone or in combination), for example • Social care • Community health services • Helplines • Equipment • Drugs • Hydration • Nutrition • Carer support • Hospice at home • Virtual hospital • Tele-health • Advance care planning (ACP) • Best interest meetings – mental capacity • 'rapid response team' – out of hours • Ambulance service may link to community services • 24 hour community services • Community/health provision of psychological support/self-management/psycho-education • Provision of patient/care information • Named professional/coordinator (especially out of hours)

VI	Eligibility criteria – comparator(s) / control or reference (gold) standard	• To each other (different ways of providing additional services; alone or in combination) • No additional community services available (usual care)
VII	Outcomes and prioritisation	CRITICAL • Quality of life (Continuous) • Preferred and actual place of death (Dichotomous) • Preferred and actual place of care (Dichotomous) IMPORTANT • Length of survival (Continuous) • Length of stay (Continuous) • Hospitalisation (Dichotomous) • Number of hospital visits (Dichotomous) • Number of visits to accident and emergency (Dichotomous) • Number of unscheduled admissions (Dichotomous) • Use of community services (Dichotomous) • Avoidable/inappropriate admissions to ICU (Dichotomous) • Inappropriate resuscitation (Dichotomous) Staff satisfaction (Continuous) Patient/carer reported outcomes (satisfaction) (Continuous)
VIII	Eligibility criteria – study design	• Systematic reviews • RCTs • Non-randomised comparative studies, including before and after studies.
IX	Other inclusion exclusion criteria	Exclusions: • Children (17 years or younger) • Studies will only be included if they reported one or more of the outcomes listed above • Descriptive (non-comparative) studies will be excluded
X	Proposed sensitivity / subgroup analysis, or meta-regression	Subgroups to be analysed if heterogeneity found: • Younger adults (aged 18-25) • Frail elderly • People with dementia • People with hearing loss • People with advanced heart and lung disease • People in prisons • Socioeconomic inequalities (people from lower income brackets) • Homeless people/vulnerably housed • Travelers • People with learning difficulties • People with disabilities • People with mental health problems • Migrant workers • LGBT • People in whom life-prolonging therapies are still an active

		option
XI	Selection process – duplicate screening / selection / analysis	Quality assurance will be undertaken by a senior research fellow prior to completion. Review strategy/other analysis: • Information on identification tools used as part of a service will be extracted. • Due to the expected complexity of the service models implemented in the studies, studies will be reported separately if necessary. In such case, studies on the populations included in the subgroup list will be highlighted to the Committee and will be considered when making the recommendations
XII	Data management (software)	• Pairwise meta-analyses were performed using Cochrane Review Manager (RevMan5). • GRADEpro was used to assess the quality of evidence for each outcome. • Endnote was used for: ○ Bibliographies / citations, text mining, and study sifting • Evibase was used for Data extraction and quality assessment / critical appraisal
XIII	Information sources – databases and dates	Databases: Medline, Embase, The Cochrane LIbrary Date limits for search: all years Language: English only A call for evidence was also conducted.
XIV	Identify if an update	Not applicable
XV	Author contacts	https://www.nice.org.uk/guidance/indevelopment/gid-cgwave0799
XVI	Highlight if amendment to previous protocol	For details please see section 4.5 of Developing NICE guidelines: the manual.
XVII	Search strategy – for one database	For details please see Appendix B
XVIII	Data collection process – forms / duplicate	A standardised evidence table format will be used, and published as Appendix D of the evidence report.
XIX	Data items – define all variables to be collected	For details please see evidence tables in Appendix D (clinical evidence tables) or H (health economic evidence tables).
XX	Methods for assessing bias at outcome / study level	Standard study checklists were used to critically appraise individual studies. For details please see section 6.2 of Developing NICE guidelines: the manual The risk of bias across all available evidence was evaluated for each outcome using an adaptation of the 'Grading of Recommendations Assessment, Development and Evaluation (GRADE) toolbox' developed by the international GRADE working group http://www.gradeworkinggroup.org/ [Please document any deviations/alternative approach when GRADE isn't used or if a modified GRADE approach has been used for non-intervention or non-comparative studies.]
XXI	Criteria for quantitative synthesis	For details please see section 6.4 of Developing NICE guidelines: the manual.
XXII	Methods for quantitative analysis –	For details please see the separate Methods report for this guideline.

	combining studies and exploring (in)consistency	
XXIII	Meta-bias assessment – publication bias, selective reporting bias	For details please see section 6.2 of Developing NICE guidelines: the manual. [Consider exploring publication bias for review questions where it may be more common, such as pharmacological questions, and certain disease areas. Describe any steps taken to mitigate against publication bias, such as examining trial registries.]
XXIV	Confidence in cumulative evidence	For details please see sections 6.4 and 9.1 of Developing NICE guidelines: the manual.
XXV	Rationale / context – what is known	For details please see the introduction to the evidence review.
XXVI	Describe contributions of authors and guarantor	A multidisciplinary committee [https://www.nice.org.uk/guidance/indevelopment/gid-cgwave0799] developed the evidence review. The committee was convened by the National Guideline Centre (NCommittee) and chaired by Mark Thomas in line with section 3 of Developing NICE guidelines: the manual. Staff from NCommittee undertook systematic literature searches, appraised the evidence, conducted meta-analysis and cost-effectiveness analysis where appropriate, and drafted the evidence review in collaboration with the committee. For details please see Developing NICE guidelines: the manual.
XXVII	Sources of funding / support	NCommittee is funded by NICE and hosted by the Royal College of Physicians.
XXVIII	Name of sponsor	NCommittee is funded by NICE and hosted by the Royal College of Physicians.
XXIX	Roles of sponsor	NICE funds NCommittee to develop guidelines for those working in the NHS, public health and social care in England.
XXX	PROSPERO registration number	Not registered

Table 44: Health economic review protocol

Review question	All questions – health economic evidence
Objectives	To identify health economic studies relevant to any of the review questions.
Search criteria	• Populations, interventions and comparators must be as specified in the clinical review protocol above. • Studies must be of a relevant health economic study design (cost–utility analysis, cost-effectiveness analysis, cost–benefit analysis, cost–consequences analysis, comparative cost analysis). • Studies must not be a letter, editorial or commentary, or a review of health economic evaluations. (Recent reviews will be ordered although not reviewed. The bibliographies will be checked for relevant studies, which will then be ordered.) • Unpublished reports will not be considered unless submitted as part of a call for evidence.

	• Studies must be in English.
Search strategy	A health economic study search will be undertaken using population-specific terms and a health economic study filter – see Appendix A.
Review strategy	Studies not meeting any of the search criteria above will be excluded. Studies published before 2007, abstract-only studies and studies from non-OECD countries or the USA will also be excluded. Each remaining study will be assessed for applicability and methodological limitations using the NICE economic evaluation checklist which can be found in Appendix H of Developing NICE guidelines: the manual (2014).[164] **Inclusion and exclusion criteria** • If a study is rated as both 'Directly applicable' and with 'Minor limitations' then it will be included in the guideline. A health economic evidence table will be completed and it will be included in the health economic evidence profile. • If a study is rated as either 'Not applicable' or with 'Very serious limitations' then it will usually be excluded from the guideline. If it is excluded then a health economic evidence table will not be completed and it will not be included in the health economic evidence profile. • If a study is rated as 'Partially applicable', with 'Potentially serious limitations' or both then there is discretion over whether it should be included. **Where there is discretion** The health economist will make a decision based on the relative applicability and quality of the available evidence for that question, in discussion with the guideline committee if required. The ultimate aim is to include health economic studies that are helpful for decision-making in the context of the guideline and the current NHS setting. If several studies are considered of sufficiently high applicability and methodological quality that they could all be included, then the health economist, in discussion with the committee if required, may decide to include only the most applicable studies and to selectively exclude the remaining studies. All studies excluded on the basis of applicability or methodological limitations will be listed with explanation as excluded health economic studies in Appendix M. The health economist will be guided by the following hierarchies. *Setting:* • UK NHS (most applicable). • OECD countries with predominantly public health insurance systems (for example, France, Germany, Sweden). • OECD countries with predominantly private health insurance systems (for example, Switzerland). • Studies set in non-OECD countries or in the USA will be excluded before being assessed for applicability and methodological limitations. *Health economic study type:* • Cost–utility analysis (most applicable). • Other type of full economic evaluation (cost–benefit analysis, cost-effectiveness analysis, cost–consequences analysis). • Comparative cost analysis. • Non-comparative cost analyses including cost-of-illness studies will be excluded before being assessed for applicability and methodological limitations. *Year of analysis:* • The more recent the study, the more applicable it will be. • Studies published in 2007 or later but that depend on unit costs and resource data entirely or predominantly from before 2007 will be rated as 'Not applicable'. • Studies published before 2007 will be excluded before being assessed for applicability and methodological limitations.

	Quality and relevance of effectiveness data used in the health economic analysis: • The more closely the clinical effectiveness data used in the health economic analysis match with the outcomes of the studies included in the clinical review the more useful the analysis will be for decision-making in the guideline.

The search strategy will be added here after rerun searches have been conducted.

Appendix B: Search strategies

The literature searches for this review are detailed below and complied with the methodology outlined in Developing NICE guidelines: the manual 2014, updated 2017 https://www.nice.org.uk/guidance/pmg20/resources/developing-nice-guidelines-the-manual-pdf-72286708700869

For more detailed information, please see the Methodology Review.

B.1 Clinical search literature search strategy

Searches for were constructed using a PICO framework where population (P) terms were combined with Intervention (I) and in some cases Comparison (C) terms. Outcomes (O) are rarely used in search strategies for interventions as these concepts may not be well described in title, abstract or indexes and therefore difficult to retrieve. Search filters were applied to the search where appropriate.

Table 45: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline (Ovid)	1946 – 04 January 2019	Exclusions
Embase (Ovid)	1974 – 04 January 2019	Exclusions
The Cochrane Library (Wiley)	Cochrane Reviews to Issue 1 of 12, January 2019 CENTRAL to Issue 1 of 12, January 2019 DARE, and NHSEED to Issue 2 of 4 2015 HTA to Issue 4 of 4 2016	None
CINAHL, Current Nursing and Allied Health Literature (EBSCO)	Inception – 04 January 2019	Limiters - English Language; Exclude MEDLINE records; Publication Type: Clinical Trial, Journal Article, Meta Analysis, Randomized Controlled Trial, Systematic Review: Age Groups: All Adult; Language: English
PsycINFO (ProQuest)	Inception – 04 January 2019	Study type
HMIC. Healthcare Management Information Consortium (Ovid)	1979 – 04 January 2019	Exclusions

Database	Dates searched	Search filter used
SPP, Social Policy and Practice	1981 – 04 January 2019	Study types
ASSIA, Applied Social Sciences Index and Abstracts (ProQuest)	1987 – 04 January 2019	None

1

2

3

4 **Medline (Ovid) search terms**

1.	Palliative care/
2.	Terminal care/
3.	Hospice care/
4.	palliat*.ti,ab.
5.	Terminally Ill/
6.	((terminal* or long term or longterm) adj2 (care* or caring or ill*)).ti,ab.
7.	((dying or terminal) adj (phase* or stage*)).ti,ab.
8.	life limit*.ti,ab.
9.	Nursing Homes/
10.	Respite Care/
11.	((respite or day) adj2 (care or caring)).ti,ab.
12.	Hospices/
13.	hospice*.ti,ab.
14.	exp Advance Care Planning/
15.	(advance* adj2 (plan* or decision* or directive*)).ti,ab.
16.	living will*.ti,ab.
17.	*Patient care planning/
18.	*"Continuity of Patient Care"/
19.	((advance* or patient*) adj3 (care or caring) adj3 (continu* or plan*)).ti,ab.
20.	*Attitude to Death/
21.	(attitude* adj3 (death* or dying*)).ti,ab.
22.	*Physician-Patient Relations/
23.	*Long-Term Care/
24.	*"Delivery of Health Care"/
25.	(end adj2 life).ti,ab.
26.	EOLC.ti,ab.

27.	((last or final) adj2 (year or month*) adj2 life).ti,ab.
28.	((dying or death) adj2 (patient* or person* or people or care or caring)).ti,ab.
29.	or/1-28
30.	letter/
31.	editorial/
32.	news/
33.	exp historical article/
34.	Anecdotes as Topic/
35.	comment/
36.	case report/
37.	(letter or comment*).ti.
38.	or/30-37
39.	randomized controlled trial/ or random*.ti,ab.
40.	38 not 39
41.	animals/ not humans/
42.	exp Animals, Laboratory/
43.	exp Animal Experimentation/
44.	exp Models, Animal/
45.	exp Rodentia/
46.	(rat or rats or mouse or mice).ti.
47.	or/40-46
48.	29 not 47
49.	limit 48 to English language
50.	(exp child/ or exp pediatrics/ or exp infant/) not (exp adolescent/ or exp adult/ or exp middle age/ or exp aged/)
51.	49 not 50
52.	Social Welfare/ec, ed, es, eh, ma, st, sn, td [Economics, Education, Ethics, Ethnology, Manpower, Standards, Statistics & Numerical Data, Trends]
53.	Charities/ec, ed, es, ma, mt, og, st, sn, sd, td, ut [Economics, Education, Ethics, Manpower, Methods, Organization & Administration, Standards, Statistics & Numerical Data, Supply & Distribution, Trends, Utilization]
54.	Home Care Services/ec, ed, es, ma, mt, og, st, sn, sd, td, ut [Economics, Education, Ethics, Manpower, Methods, Organization & Administration, Standards, Statistics & Numerical Data, Supply & Distribution, Trends, Utilization]
55.	Community Health Nursing/ec, ed, es, ma, mt, og, st, sn, sd, td, ut [Economics, Education, Ethics, Manpower, Methods, Organization & Administration, Standards, Statistics & Numerical Data, Supply & Distribution, Trends, Utilization]
56.	Telemedicine/ec, es, ma, mt, og, st, sn, td, ut [Economics, Ethics, Manpower, Methods, Organization & Administration, Standards, Statistics & Numerical Data, Trends, Utilization]
57.	exp remote consultation/
58.	*telemedicine/ or *telepathology/ or *teleradiology/ or *telerehabilitation/
59.	(telemedicine or tele medicine or telehealth or tele health or virtual hospital* or helpline* or help line* or rapid response team* or telepathology or teleradiology or telerehabilitatio).ti,ab.
60.	((tele* or remote) adj2 consult*).ti,ab.
61.	Mobile Health Units/ec, es, ma, og, st, sn, sd, td, ut [Economics, Ethics, Manpower, Organization & Administration, Standards, Statistics & Numerical Data, Supply & Distribution, Trends, Utilization]

62.	(mobile adj2 (health or care) adj2 unit*).ti,ab.
63.	(hospital-based home care or HBHC or hospital-based hospice care or acute hospital care).ti,ab.
64.	(hospital adj3 (domicil* or home)).ti,ab.
65.	home hospitali*ation.ti,ab.
66.	exp Home Care Agencies/
67.	(social adj (welfare or care)).ti,ab.
68.	(nurs* adj4 (home-visit* or home visit* or home-based or home based)).ti,ab.
69.	((district* or communit* or home or visit*) adj nurs*).ti,ab.
70.	(community adj2 (health care or healthcare or nursing or nurse*)).ti,ab.
71.	((hospitali*ation* or admission* or readmission* or admit*) adj3 (reduc* or avoid* or prevent* or inappropiate or increase* or risk*)).ti,ab.
72.	or/52-71
73.	51 and 72
74.	(commission* adj2 (support* or service* or model*)).ti,ab.
75.	((service* or program* or co-ordinat* or co ordinat* or coordinat*) adj2 (model* or deliver* or strateg* or support* or access* or method* or system* or policies or policy or availab*)).ti,ab.
76.	Critical Pathways/
77.	((critical or clinic* or service* or care) adj2 path*).ti,ab.
78.	Patient Care Bundles/
79.	(care adj2 (bundle* or service* or package* or standard*)).ti,ab.
80.	or/74-79
81.	(assess* or criteria* or predict* or recogni* or identif* or refer*).ti,ab.
82.	51 and 80 and 81
83.	gold standard*.ti,ab.
84.	51 and 83
85.	(amber adj2 bundle).ti,ab.
86.	82 or 84 or 85
87.	patient care team/
88.	interdisciplinary communication/
89.	(((interdisciplin* or inter-disciplin* or interprofession* or inter-profession* or multidisciplin* or multi-disciplin* or multi-profession* or multiprofession* or transprofession* or trans-profession*) adj2 (team* or staff* or meeting* or manag* or appointment* or system* or program* or practic* or advic* or advis* or caring or intervention* or ward* or round* or panel* or forum* or fora or communicat* or collaborat* or relat*)) or MDT or IDT).ti,ab.
90.	(((integrat* or network*) adj2 (team* or staff* or meeting* or manag* or appointment* or system* or program* or practic* or advic* or advis* or caring or intervention* or ward* or round* or panel* or forum* or fora or communicat* or collaborat* or relat*)) or MDT or IDT).ti,ab.
91.	(key adj2 work*).ti,ab.
92.	((healthcare or care) adj2 (lead or leader or leads or facilitat*)).ti,ab.
93.	((healthcare or care) adj1 profession*).ti,ab.
94.	*Case Management/
95.	(case adj2 manage*).ti,ab.
96.	(co-ordinator* or coordinator* or coordinate* or co-ordinate*).ti,ab.
97.	Or/87-96

98.	*"Continuity of Patient Care"/
99.	*Aftercare/ or *Patient discharge/ or *Patient handoff/ or *Patient transfer/ or *Transitional care/
100.	Patient Discharge Summaries/
101.	((patient* or person* or people or nursing* or clinic*) adj (discharg* or handover* or hand* over* or handoff* or hand off* or signout* or sign* out* or signover* or sign* over*)).ti,ab.
102.	((care or caring or serv*) adj2 (continu* or change* or transition* or transfer*)).ti,ab.
103.	(discharg* adj2 (facilitat* or rapid* or pathway* or path way* or plan* or program*)).ti,ab.
104.	Or/98-103
105.	*Caregiver/
106.	*Spouse/
107.	*Family/
108.	(spouse* or wife or wives or husband* or carer* or caregiver* or care giver* or significant other* or friend* or partner* or family or families or individual* or sibling* or brother* or sister* or relative or relatives or mothers* or daughters* or father* or son or sons or uncle* or aunt* or grand mother* or grandmother* or grandfather* or grand father* or aunt* or uncle* or cousin* or niece* or nephew*).ti,ab.
109.	Or/105-108
110.	((replacement or break* or holiday* or respite) adj3 (care* or service*)).ti,ab.
111.	((communit* or support* or psychosocial* or psycholog*) adj3 (service* or group* or system*)).ti,ab.
112.	((group* or support* or psychosocial* or psycholog*) adj3 (selfhelp or self help or therap*)).ti,ab.
113.	((psychosocial* or psycholog*) adj2 support*).ti,ab.
114.	*Self-Help/
115.	*Social support/
116.	*Counseling/
117.	(counseling or counselling*).ti,ab.
118.	(buddy* or buddies).ti,ab.
119.	((health* or medical*) adj2 check*).ti,ab.
120.	((spouse* or wife or wives or husband* or carer* or caregiver* or care giver* or significant other* or friend* or partner* or family or families or individual* or sibling* or brother* or sister* or relative or relatives or mothers* or daughters* or father* or son or sons or uncle* or aunt* or grand mother* or grandmother* or grandfather* or grand father* or aunt* or uncle* or cousin* or niece* or nephew*) adj3 (education or educate or educating or information or literature or leaflet* or booklet* or pamphlet* or website* or knowledge)).ti,ab.
121.	Or/110-120
122.	52 and 109 and 121
123.	(service* adj3 (provision* or deliver* or addition* or method* or time* or timing or frequent* or frequenc* or review* or ident* or assess*)).ti,ab.
124.	51 and (97 or 104 or 123)
125.	73 or 86 or 122 or 124

1 **Embase (Ovid) search terms**

1.	*Palliative therapy/
2.	*Terminal care/
3.	*Hospice care/

4.	palliat*.ti,ab.
5.	*Terminally ill patient/
6.	((terminal* or long term or longterm) adj2 (care* or caring or ill*)).ti,ab.
7.	((dying or terminal) adj (phase* or stage*)).ti,ab.
8.	life limit*.ti,ab.
9.	*Nursing home/
10.	*Respite Care/
11.	((respite or day) adj2 (care or caring)).ti,ab.
12.	*Hospice/
13.	hospice*.ti,ab.
14.	*Patient care planning/
15.	(advance* adj2 (plan* or decision* or directive*)).ti,ab.
16.	living will*.ti,ab.
17.	*Patient care/
18.	((advance* or patient*) adj3 (care or caring) adj3 (continu* or plan*)).ti,ab.
19.	*Attitude to Death/
20.	(attitude* adj3 (death* or dying*)).ti,ab.
21.	*Doctor patient relation/
22.	*Long term care/
23.	*Health care delivery/
24.	(end adj2 life).ti,ab.
25.	EOLC.ti,ab.
26.	((last or final) adj2 (year or month*) adj2 life).ti,ab.
27.	((dying or death) adj2 (patient* or person* or people or care or caring)).ti,ab.
28.	or/1-27
29.	letter.pt. or letter/
30.	note.pt.
31.	editorial.pt.
32.	case report/ or case study/
33.	(letter or comment*).ti.
34.	or/29-33
35.	randomized controlled trial/ or random*.ti,ab.
36.	34 not 35
37.	animal/ not human/
38.	nonhuman/
39.	exp Animal Experiment/
40.	exp Experimental Animal/
41.	animal model/
42.	exp Rodent/
43.	(rat or rats or mouse or mice).ti.
44.	or/36-43
45.	28 not 44
46.	limit 45 to English language
47.	(exp child/ or exp pediatrics/ or exp infant/) not (exp adolescent/ or exp adult/ or exp middle age/ or exp aged/)

48.	46 not 47
49.	*social welfare/
50.	*community health nursing/ or *community care/
51.	*senior center/
52.	*telemedicine/ or *telehealth/
53.	*teleconsultation/
54.	(telehealth or tele health or virtual hospital* or helpline* or help line* or rapid response team* or mobile health unit*).ti,ab.
55.	*home care/ or *home health agency/ or *home monitoring/ or *home oxygen therapy/ or *home physiotherapy/ or *home rehabilitation/ or *home respiratory care/ or *respite care/ or *visiting nursing service/
56.	*health care personnel/ or *health auxiliary/ or *nursing home personnel/
57.	(telemedicine or tele medicine or telehealth or tele health or virtual hospital* or helpline* or help line* or rapid response team* or telepathology or teleradiology or telerehabilitatio).ti,ab.
58.	((tele* or remote) adj2 consult*).ti,ab.
59.	(mobile adj2 (health or care) adj2 unit*).ti,ab.
60.	(hospital-based home care or HBHC or hospital-based hospice care or acute hospital care).ti,ab.
61.	(hospital adj3 (domicil* or home)).ti,ab.
62.	home hospitali*ation.ti,ab.
63.	(social adj (welfare or care)).ti,ab.
64.	(nurs* adj4 (home-visit* or home visit* or home-based or home based)).ti,ab.
65.	((district* or communit* or home or visit*) adj nurs*).ti,ab.
66.	(community adj2 (health care or healthcare or nursing or nurse*)).ti,ab.
67.	((hospitali*ation* or admission* or readmission* or admit*) adj3 (reduc* or avoid* or prevent* or inappropiate or increase* or risk*)).ti,ab.
68.	or/49-67
69.	48 and 68
70.	(commission* adj2 (support* or service* or model*)).ti,ab.
71.	((service* or program* or co-ordinat* or co ordinat* or coordinat*) adj2 (model* or deliver* or strateg* or support* or access* or method* or system* or policies or policy or availab*)).ti,ab.
72.	*Clinical Pathway/
73.	((critical or clinic* or service* or care) adj2 path*).ti,ab.
74.	*Care Bundle/
75.	(care adj2 (bundle* or service* or package* or standard*)).ti,ab.
76.	or/70-75
77.	(assess* or criteria* or predict* or recogni* or identif* or refer*).ti,ab.
78.	48 and 76 and 77
79.	gold standard*.ti,ab.
80.	48 and 79
81.	(amber adj2 bundle).ti,ab.
82.	78 or 80 or 81
83.	interdisciplinary communication/
84.	patient care team*.ti,ab.
85.	(((interdisciplin* or inter-disciplin* or interprofession* or inter-profession* or multidisciplin* or multi-disciplin* or multi-profession* or multiprofession* or

	transprofession* or trans-profession*) adj2 (team* or staff* or meeting* or manag* or appointment* or system* or program* or practic* or advic* or advis* or caring or intervention* or ward* or round* or panel* or forum* or fora or communicat* or collaborat* or relat*)) or MDT or IDT).ti,ab.
86.	(((integrat* or network*) adj2 (team* or staff* or meeting* or manag* or appointment* or system* or program* or practic* or advic* or advis* or caring or intervention* or ward* or round* or panel* or forum* or fora or communicat* or collaborat* or relat*)) or MDT or IDT).ti,ab.
87.	(key adj2 work*).ti,ab.
88.	((healthcare or care) adj2 (lead or leader or leads or facilitat*)).ti,ab.
89.	((healthcare or care) adj1 profession*).ti,ab.
90.	*Case Management/
91.	(case adj2 manage*).ti,ab.
92.	(co-ordinator* or coordinator* or coordinate* or co-ordinate*).ti,ab.
93.	Or/83-92
94.	*patient care/ or *case management/ or *patient care planning/ or *rapid response team/
95.	*aftercare/
96.	*hospital discharge/
97.	*clinical handover/
98.	*transitional care/
99.	*patient care planning/
100.	*medical record/
101.	((patient* or person* or people or nursing* or clinic*) adj (discharg* or handover* or hand* over* or handoff* or hand off* or signout* or sign* out* or signover* or sign* over*)).ti,ab.
102.	((care or caring or serv*) adj2 (continu* or change* or transition* or transfer*)).ti,ab.
103.	(discharg* adj2 (facilitat* or rapid* or pathway* or path way* or plan* or program*)).ti,ab.
104.	Or/94-103
105.	*Caregiver/
106.	*Spouse/
107.	*Family/
108.	(spouse* or wife or wives or husband* or carer* or caregiver* or care giver* or significant other* or friend* or partner* or family or families or individual* or sibling* or brother* or sister* or relative or relatives or mothers* or daughters* or father* or son or sons or uncle* or aunt* or grand mother* or grandmother* or grandfather* or grand father* or aunt* or uncle* or cousin* or niece* or nephew*).ti,ab.
109.	Or/105-108
110.	((replacement or break* or holiday* or respite) adj3 (care* or service*)).ti,ab.
111.	((communit* or support* or psychosocial* or psycholog*) adj3 (service* or group* or system*)).ti,ab.
112.	((group* or support* or psychosocial* or psycholog*) adj3 (selfhelp or self help or therap*)).ti,ab.
113.	((psychosocial* or psycholog*) adj2 support*).ti,ab.
114.	*Self-Help/
115.	*Social support/
116.	*Counseling/
117.	(counseling or counselling*).ti,ab.
118.	(buddy* or buddies).ti,ab.

119.	((health* or medical*) adj2 check*).ti,ab.
120.	((spouse* or wife or wives or husband* or carer* or caregiver* or care giver* or significant other* or friend* or partner* or family or families or individual* or sibling* or brother* or sister* or relative or relatives or mothers* or daughters* or father* or son or sons or uncle* or aunt* or grand mother* or grandmother* or grandfather* or grand father* or aunt* or uncle* or cousin* or niece* or nephew*) adj3 (education or educate or educating or information or literature or leaflet* or booklet* or pamphlet* or website* or knowledge)).ti,ab.
121.	or/109-120
122.	48 and 109 and 120
123.	(service* adj3 (provision* or deliver* or addition* or method* or time* or timing or frequent* or frequenc* or review* or ident* or assess*)).ti,ab.
124.	48 and (93 or 104 or 123)
125.	69 or 82 or 122 or 124

1 **Cochrane Library (Wiley) search terms**

#1.	MeSH descriptor: [Palliative Care] this term only
#2.	MeSH descriptor: [Terminal Care] this term only
#3.	MeSH descriptor: [Hospice Care] this term only
#4.	palliat*:ti,ab
#5.	MeSH descriptor: [Terminally Ill] this term only
#6.	((terminal* or long term or longterm) near/2 (care* or caring or ill*)):ti,ab
#7.	((dying or terminal) near (phase* or stage*)):ti,ab
#8.	life limit*:ti,ab
#9.	MeSH descriptor: [Nursing Homes] explode all trees
#10.	MeSH descriptor: [Respite Care] this term only
#11.	((respite or day) near/2 (care or caring)):ti,ab
#12.	MeSH descriptor: [Hospices] this term only
#13.	hospice*:ti,ab
#14.	MeSH descriptor: [Patient Care Planning] this term only
#15.	MeSH descriptor: [Continuity of Patient Care] this term only
#16.	((advance* or patient*) near/3 (care or caring) near/3 (continu* or plan*)):ti,ab
#17.	MeSH descriptor: [Attitude to Death] explode all trees
#18.	(attitude* near/3 (death* or dying*)):ti,ab
#19.	MeSH descriptor: [Physician-Patient Relations] this term only
#20.	MeSH descriptor: [Long-Term Care] this term only
#21.	MeSH descriptor: [Delivery of Health Care] this term only
#22.	(end near/2 life):ti,ab
#23.	EOLC:ti,ab
#24.	((last or final) near/2 (year or month*) near/2 life):ti,ab
#25.	((dying or death) near/2 (patient* or person* or people or care or caring)):ti,ab
#26.	MeSH descriptor: [Advance Care Planning] explode all trees
#27.	(advance* near/2 (plan* or decision* or directive*)):ti,ab
#28.	(or #1-#27)
#29.	MeSH descriptor: [Social Welfare] explode all trees
#30.	MeSH descriptor: [Charities] explode all trees
#31.	MeSH descriptor: [Adult Day Care Centers] explode all trees

#32.	MeSH descriptor: [Community Health Nursing] explode all trees
#33.	MeSH descriptor: [Home Care Services] explode all trees
#34.	MeSH descriptor: [Senior Centers] explode all trees
#35.	MeSH descriptor: [Telemedicine] this term only
#36.	MeSH descriptor: [Remote Consultation] explode all trees
#37.	(telehealth or tele health or virtual hospital* or helpline* or help line* or rapid response team*):ti,ab
#38.	MeSH descriptor: [Mobile Health Units] explode all trees
#39.	((community based or community dwelling home or rural) near/3 (care or health care or healthcare)):ti,ab
#40.	(hospital-based home care or HBHC or hospital-based hospice care or acute hospital care):ti,ab
#41.	((hospitali*ation* or admission* or readmission* or admit*) near/3 (reduc* or avoid* or prevent* or inappropiate or increase* or risk*)):ti,ab
#42.	(home based versus hospital based):ti,ab
#43.	(hospital near/3 (domicil* or home)):ti,ab
#44.	(home hospitali*ation):ti,ab
#45.	MeSH descriptor: [Home Care Services, Hospital-Based] explode all trees
#46.	MeSH descriptor: [Home Health Nursing] explode all trees
#47.	MeSH descriptor: [Homemaker Services] explode all trees
#48.	MeSH descriptor: [Home Care Agencies] explode all trees
#49.	MeSH descriptor: [Home Health Aides] explode all trees
#50.	(social care):ti,ab
#51.	MeSH descriptor: [Nurses, Community Health] explode all trees
#52.	(nurs* near/4 (home-visit* or home visit* or home-based or home based)):ti,ab
#53.	((district* or communit* or home or visit*) near nurs*):ti,ab
#54.	(or #29-#53)
#55.	#28 and #54
#56.	(commission* near/2 (support* or service* or model*)):ti,ab
#57.	((service* or program* or co-ordinat* or co ordinat* or coordinat*) near/2 (model* or deliver* or strateg* or support* or access* or method* or system* or policies or policy or availab*)):ti,ab
#58.	MeSH descriptor: [Critical Pathways] explode all trees
#59.	((critical or clinic* or service* or care) near/2 path*):ti,ab
#60.	MeSH descriptor: [Patient Care Bundles] explode all trees
#61.	(care near/2 (bundle* or service* or package* or standard*)):ti,ab
#62.	(or #56-#61)
#63.	(assess* or criteria* or predict* or recogni* or identif* or refer*):ti,ab
#64.	#27 and #62 and #63
#65.	gold standard*:ti,ab
#66.	#27 and #65
#67.	(amber near/2 bundle):ti,ab
#68.	#64 or #66 or #67
#69.	MeSH descriptor: [Patient Care Team] explode all trees
#70.	MeSH descriptor: [Interdisciplinary Communication] explode all trees
#71.	(((interdisciplin* or inter-disciplin* or interprofession* or inter-profession* or multidisciplin* or multi-disciplin* or multi-profession* or multiprofession* or

	transprofession* or trans-profession*) near/2 (team* or staff* or meeting* or manag* or appointment* or system* or program* or practic* or advic* or advis* or caring or intervention* or ward* or round* or panel* or forum* or fora or communicat* or collaborat* or relat*)) or MDT or IDT):ti,ab
#72.	((integrat* or network*) near/2 (team* or staff* or meeting* or manag* or appointment* or system* or program* or practic* or advic* or advis* or caring or intervention* or ward* or round* or panel* or forum* or fora or communicat* or collaborat* or relat*)):ti,ab
#73.	(key near/2 work*):ti,ab
#74.	((healthcare or care) near/2 (lead or leader or leads or facilitat*)):ti,ab
#75.	((healthcare or care) near/1 profession*):ti,ab
#76.	MeSH descriptor: [Case Management] this term only
#77.	(case near/2 manage*):ti,ab
#78.	(co-ordinator* or coordinator* or coordinate* or co-ordinate*):ti,ab
#79.	(or #69-#78)
#80.	MeSH descriptor: [Continuity of Patient Care] this term only
#81.	MeSH descriptor: [Aftercare] this term only
#82.	MeSH descriptor: [Patient Discharge] this term only
#83.	MeSH descriptor: [Patient Handoff] this term only
#84.	MeSH descriptor: [Patient Transfer] this term only
#85.	MeSH descriptor: [Transitional Care] this term only
#86.	MeSH descriptor: [Patient Discharge Summaries] this term only
#87.	((patient* or person* or people or nursing* or clinic*) near (discharg* or handover* or hand* over* or handoff* or hand off* or signout* or sign* out* or signover* or sign* over*)):ti,ab
#88.	((care or caring or serv*) near/2 (continu* or change* or transition* or transfer*)):ti,ab
#89.	(discharg* near/2 (facilitat* or rapid* or pathway* or path way* or plan* or program*)):ti,ab
#90.	(or #80-#89)
#91.	MeSH descriptor: [Caregivers] this term only
#92.	MeSH descriptor: [Spouses] this term only
#93.	MeSH descriptor: [Family] this term only
#94.	(spouse* or wife or wives or husband* or carer* or caregiver* or care giver* or significant other* or friend* or partner* or family or families or individual* or sibling* or brother* or sister* or relative or relatives or mothers* or daughters* or father* or son or sons or uncle* or aunt* or grand mother* or grandmother* or grandfather* or grand father* or aunt* or uncle* or cousin* or niece* or nephew*):ti,ab
#95.	(or #91-#94)
#96.	((replacement or break* or holiday* or respite) near/3 (care* or service*)):ti,ab
#97.	((communit* or support* or psychosocial* or psycholog*) near/3 (service* or group* or system*)):ti,ab
#98.	((group* or support* or psychosocial* or psycholog*) near/3 (selfhelp or self help or therap*)):ti,ab
#99.	((psychosocial* or psycholog*) near/2 support*):ti,ab
#100.	MeSH descriptor: [Self-Help Groups] this term only
#101.	MeSH descriptor: [Social Support] explode all trees
#102.	MeSH descriptor: [Counseling] this term only
#103.	(counseling or counselling*):ti,ab
#104.	(buddy* or buddies):ti,ab
#105.	(health or medical*) near/3 check*:ti,ab

#106.	(spouse* or wife or wives or husband* or carer* or caregiver* or care giver* or significant other* or friend* or partner* or family or families or individual* or sibling* or brother* or sister* or relative or relatives or mothers* or daughters* or father* or son or sons or uncle* or aunt* or grand mother* or grandmother* or grandfather* or grand father* or aunt* or uncle* or cousin* or niece* or nephew*) near/3 (education or educate or educating or information or literature or leaflet* or booklet* or pamphlet* or website* or knowledge):ti,ab
#107.	(or #96-#106)
#108.	27 and 95 and 107
#109.	service* near/3 (provision* or deliver* or addition* or method* or time* or timing or frequent* or frequenc* or review* or ident* or assess*):ti,ab
#110.	#29 and (#79 or #90 or #109)
#111.	#55 or #68 or #108 or #110

1 **CINAHL (EBSCO) search terms**

S1.	MH Palliative care
S2.	MH Terminal care
S3.	MH Hospice care
S4.	TI palliat* OR AB palliat*
S5.	MW Terminally ill
S6.	TI (terminal* or long term or longterm) AND TI (care* or caring or ill*)
S7.	AB (terminal* or long term or longterm) AND AB (care* or caring or ill*)
S8.	TI (dying or terminal) AND TI (phase* or stage*)
S9.	AB (dying or terminal) AND AB (phase* or stage*)
S10.	TI life limit* OR AB life limit*
S11.	MH Nursing homes
S12.	TI (care or nursing) AND TI (home or homes)
S13.	AB (care or nursing) AND AB (home or homes)
S14.	MH Respite care
S15.	MH Respite care
S16.	AB (respite or day) AND AB (care or caring)
S17.	MH Hospices
S18.	TI Hospice* OR AB Hospice*
S19.	(MH "Patient Care Plans")
S20.	(MH "Continuity of Patient Care")
S21.	TI (advance* or patient*) AND TI (care or caring) AND TI (continu* or plan*)
S22.	AB (advance* or patient*) AND AB (care or caring) AND AB (continu* or plan*)
S23.	MH Attitude to Death
S24.	TI attitude* AND TI (death* or dying)
S25.	AB attitude* AND AB (death* or dying)
S26.	MH Physician-Patient Relations
S27.	(MH "Long Term Care")
S28.	(MH "Health Care Delivery")
S29.	TI end AND TI life OR AB end AND AB life
S30.	TI EOLC OR AB EOLC
S31.	TI (last or final) AND TI (year or month) AND TI life
S32.	AB (last or final) AND AB (year or month) AND AB life

S33.	TI (dying or death) AND TI (patient* or person* or people or care or caring)
S34.	AB (dying or death) AND AB (patient* or person* or people or care or caring)
S35.	S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10 OR S11 OR S12 OR S13 OR S14 OR S15 OR S16 OR S17 OR S18 OR S19 OR S20 OR S21 OR S22 OR S23 OR S24 OR S25 OR S26 OR 27 OR S28 OR S29 OR S30 OR S31 OR S32 OR S33 OR S34
S36.	(MM "Social Welfare")
S37.	(MH "Charities")
S38.	(MM "Adult Day Center (Saba CCC)") OR (MM "Housing for the Elderly") OR (MM "Older Adult Care (Saba CCC)")
S39.	(MH "Community Health Nursing+") OR (MM "Community Health Centers")
S40.	(MH "Home Health Care+") OR (MM "Home Health Aides") OR (MM "Home Health Care Information Systems") OR (MM "Home Health Aide Service (Saba CCC)")
S41.	(MM "Housing for the Elderly") OR (MM "Rural Health Centers") OR (MM "Community Health Centers")
S42.	(MH "Telemedicine+") OR (MH "Telehealth+")
S43.	(MM "Remote Consultation") OR (MM "Telephone Consultation (Iowa NIC)") OR (MM "Services for Australian Rural and Remote Allied Health")
S44.	telehealth or tele health or virtual hospital* or helpline* or help line* or rapid response team* or senior center*
S45.	(MM "Rural Health Personnel") OR (MM "Mobile Health Units")
S46.	remote consultation
S47.	((community based or community dwelling home or rural) n3 (care or health care or healthcare))
S48.	hospital-based home care or HBHC or hospital-based hospice care or acute hospital care
S49.	((hospitali?ation* or admission* or readmission* or admit*) n3 (reduc* or avoid* or prevent* or inappropiate or increase* or risk*))
S50.	home based versus hospital based
S51.	(hospital n3 (domicil* or home))
S52.	home hospitali?ation
S53.	home care service*
S54.	(MM "Home Health Agencies") OR (MM "Nursing Home Personnel")
S55.	(MM "Homemaker Services") OR (MM "Health Services for the Aged")
S56.	(MH "Home Health Care+") OR (MM "Home Care Equipment and Supplies") OR (MH "Nursing Homes") OR (MM "National Association for Home Care & Hospice") OR (MM "Nursing Home Patients")
S57.	social care
S58.	(MM "Hospitals, Community")
S59.	(MM "Home Nursing") OR (MM "Home Nursing, Professional")
S60.	(nurs* n4 (home-visit* or home visit* or home-based or home based))
S61.	((district* or communit* or home or visit*) n nurs*)
S62.	S36 OR S37 OR S38 OR S39 OR S40 OR S41 OR S42 OR S43 OR S44 OR S45 OR S46 OR S47 OR S48 OR S49 OR S50 OR S51 OR S52 OR S53 OR S54 OR S55 OR S56 OR S57 OR S58 OR S59 OR S60 OR S61
S63.	S35 AND S62
S64.	TI commission* AND TI ((support* or service* or model*))
S65.	AB commission* AND AB ((support* or service* or model*))
S66.	TI (service* or program* or co-ordinat* or co ordinat* or coordinat*) AND TI (model* or deliver* or strateg* or support* or access* or method* or system* or policies or policy

	or availab*)
S67.	AB (service* or program* or co-ordinat* or co ordinat* or coordinat*) AND AB (model* or deliver* or strateg* or support* or access* or method* or system* or policies or policy or availab*)
S68.	TI (critical or clinic* or service* or care) AND TI path*
S69.	AB (critical or clinic* or service* or care) AND AB path*
S70.	TI care AND TI (bundle* or service* or package* or standard*)
S71.	AB care AND AB (bundle* or service* or package* or standard*)
S72.	S64 OR S65 OR S66 OR S67 OR S68 OR S69 OR S70 OR S71
S73.	TI (assess* or criteria* or predict* or recogni* or identif* or refer*) OR AB (assess* or criteria* or predict* or recogni* or identif* or refer*)
S74.	S35 AND S72 AND S73
S75.	TI gold standard* OR AB gold standard*
S76.	S35 AND S75
S77.	TI amber AND TI bundle
S78.	AB amber AND AB bundle
S79.	S77 OR S78
S80.	S74 OR S76 OR S79
S81.	(MH "Multidisciplinary Care Team+")
S82.	MDT OR IDT
S83.	((interdisciplin* or inter-disciplin* or interprofession* or inter-profession* or multidisciplin* or multi-disciplin* or multi-profession* or multiprofession* or transprofession* or trans-profession*) n2 (team* or staff* or meeting* or manag* or appointment* or system* or program* or practic* or advic* or advis* or caring or intervention* or ward* or round* or panel* or forum* or fora or communicat* or collaborat* or relat*))
S84.	((integrat* or network*) n2 (team* or staff* or meeting* or manag* or appointment* or system* or program* or practic* or advic* or advis* or caring or intervention* or ward* or round* or panel* or forum* or fora or communicat* or collaborat* or relat*))
S85.	TI (key n2 work*) OR AB (key n2 work*)
S86.	TI (((healthcare or care) n2 (lead or leader or leads or facilitat*))) OR AB (((healthcare or care) n2 (lead or leader or leads or facilitat*)))
S87.	TI (((healthcare or care) n1 profession*)) OR AB (((healthcare or care) n1 profession*))
S88.	MH Case Management
S89.	TI (case n2 manage*) OR AB (case n2 manage*)
S90.	TI ((co-ordinator* or coordinator* or coordinate* or co-ordinate*)*)) OR AB ((co-ordinator* or coordinator* or coordinate* or co-ordinate*))
S91.	S81 OR S82 OR S83 OR S84 OR S85 OR S86 OR S87 OR S88 OR S89 OR S90
S92.	MH Continuity of Patient Care OR MH Aftercare OR MH Patient discharge OR MH Patient handoff OR MH Patient transfer OR MH Transitional care
S93.	(MM "Discharge Planning") OR (MM "Patient Discharge Summaries")
S94.	TI (((patient* or person* or people or nursing* or clinic*)) AND TX ((discharg* or handover* or hand* over* or handoff* or hand off* or signout* or sign* out* or signover* or sign* over*))
S95.	AB (((patient* or person* or people or nursing* or clinic*)) AND AB ((discharg* or handover* or hand* over* or handoff* or hand off* or signout* or sign* out* or signover* or sign* over*))
S96.	AB ((care or caring or serv*)) AND AB ((continu* or change* or transition* or transfer*))
S97.	TI ((care or caring or serv*)) AND TI ((continu* or change* or transition* or transfer*))

S98.	TI discharg* AND TI (facilitat* or rapid* or pathway* or path way* or plan* or program*))
S99.	AB discharg* AND AB (facilitat* or rapid* or pathway* or path way* or plan* or program*))
S100.	S92 OR S93 OR S94 OR S95 OR S96 OR S97 OR S98 OR S99
S101.	TI advance* AND TI (plan* or decision* or directive*)
S102.	AB advance* AND AB (plan* or decision* or directive*)
S103.	S101 OR S102
S104.	S36 AND (S91 OR S100 OR S103)
S105.	S63 OR S80 OR S104

1 **PsycINFO (ProQuest) search terms**

1.	(ti,ab(commission* NEAR/2 (support* OR service* OR model*)) OR ((service* OR program* OR co-ordinat* OR coordinat*) NEAR/2 (model* OR deliver* OR strateg* OR support* OR access* OR method* OR system* OR policies OR policy OR availab*))) AND (SU.EXACT("Palliative Care") OR SU.EXACT("Terminally Ill Patients") OR SU.EXACT("Hospice") OR ti,ab(palliat*) OR ti,ab((terminal* OR long-term OR longterm) NEAR/2 (care* OR caring OR ill*)) OR ti,ab((dying OR terminal) NEAR/1 (phase* OR stage*)) OR ti,ab(life-limit*) OR SU.EXACT("Nursing Homes") OR ti,ab((care OR nursing) NEAR/2 (home OR homes)) OR SU.EXACT("Respite Care") OR ti,ab((respite OR day) NEAR/2 (care OR caring)) OR ti,ab(hospice*) OR MJSUB.EXACT("Treatment Planning") OR MJSUB.EXACT("Continuum of Care") OR ti,ab((advance* OR patient*) NEAR/3 (care OR caring) NEAR/3 (continu* OR plan*)) OR MJSUB.EXACT("Long Term Care") OR ti,ab(attitude* NEAR/3 (death* OR dying*)) OR ti,ab(end NEAR/2 life) OR ti,ab(EOLC) OR ti,ab((last OR final) NEAR/2 (year OR month*) NEAR/2 life) OR ti,ab((dying OR death) NEAR/2 (patient* OR person* OR people OR care OR caring)))
2.	Adolescence (13-17 Yrs), Adulthood (18 Yrs & Older), Aged (65 Yrs & Older), Middle Age (40-64 Yrs), Thirties (30-39 Yrs), Very Old (85 Yrs & Older), Young Adulthood (18-29 Yrs)
3.	1 and 2
4.	Conference Proceedings, Journal Article, Peer Reviewed Journal
5.	3 and 4

2 **HMIC (Ovid) search terms**

1.	exp End of life care/
2.	(terminal* adj ill*).ti,ab.
3.	((dying or terminal) adj (phase* or stage*)).ti,ab.
4.	life limit*.ti,ab.
5.	(end adj2 life).ti,ab.
6.	EOLC.ti,ab.
7.	((last or final) adj2 (year or month*) adj2 life).ti,ab.
8.	((dying or death) adj2 (patient* or person* or people or care or caring)).ti,ab.
9.	or/2-8
10.	(exp child/ or exp Paediatrics/ or exp infant/) not (exp adolescent/ or exp adult/ or exp middle age/ or exp older people/)
11.	9 not 10
12.	limit 11 to English
13.	limit 12 to (audiovis or book or chapter dh helmis or circular or microfiche dh helmis or multimedias or website)
14.	limit 12 to (audiocass or books or cdrom or chapter or dept pubs or diskettes or folio pamp or "map" or marc or microfiche or multimedia or pamphlet or parly or press or

	press rel or thesis or trustdoc or video or videos or website)
15.	13 or 14
16.	12 not 15
17.	euthanasia/
18.	euthanasia.ti,ab.
19.	17 or 18
20.	16 not 19

1 **SPP (Ovid) search terms**

1.	palliat*.ti,ab.
2.	((dying or terminal) adj (phase* or stage*)).ti,ab.
3.	life limit*.ti,ab.
4.	hospice*.ti,ab.
5.	(advance* adj2 (plan* or decision* or directive*)).ti,ab.
6.	living will*.ti,ab.
7.	((advance* or patient*) adj3 (care or caring) adj3 (continu* or plan*)).ti,ab.
8.	(attitude* adj3 (death* or dying*)).ti,ab.
9.	(end adj2 life).ti,ab.
10.	EOLC.ti,ab.
11.	((last or final) adj2 (year or month*) adj2 life).ti,ab.
12.	((dying or death) adj2 (patient* or person* or people or care or caring)).ti,ab.
13.	(nursing adj2 (home or homes)).ti,ab.
14.	(terminal* adj2 ill*).ti,ab.
15.	(respite adj2 (care or caring)).ti,ab.
16.	or/1-15
17.	(child* or infant*).ti,ab.
18.	(adult* or adolescent*).ti,ab.
19.	17 not 18
20.	16 not 19
21.	limit 20 to (journal or journal article or online resource or online report or report)

2 **ASSIA (ProQuest) search terms**

1.	palliat*.ti,ab. ((ti,ab(commission* N/2 (support* or service* or model*)) OR ti,ab((service* or program* or co-ordinat* or coordinat*) N/2 (model* or deliver* or strateg* or support* or access* or method* or system* or policies or policy or availab*))) AND ((SU.EXACT("Care" OR "Clinical nursing" OR "Community homes" OR "Community nursery nursing" OR "Community nursing" OR "Compassionate care" OR "Continuing care" OR "District nursing" OR "Family centred care" OR "Geriatric wards" OR "Group care" OR "Health visiting" OR "Home care" OR "Home from home care" OR "Home health aides" OR "Home helps" OR "Hospices" OR "Hostel wards" OR "Informal care" OR "Integrated care pathways" OR "Intentional care" OR "Intermediate care" OR "Intermediate care centres" OR "Lack of care" OR "Learning disability nursing" OR "Length of stay" OR "Liaison nursing" OR "Long stay wards" OR "Long term care" OR "Long term home care" OR "Long term residential care" OR "Nurse led care" OR "Nursing" OR "Occupational health nursing" OR "Ontological care" OR "Out of home care" OR "Outreach nursing" OR "Palliative care" OR "Paranursing" OR "Pastoral care" OR "Patient care" OR "Primary nursing" OR "Private residential care" OR "Process centred care" OR "Quality of care" OR "Radical health visiting" OR "Residential care" OR "Residential group care" OR "Respite care" OR "Shared care" OR "Social care" "Temporary care" OR "Terminal care" OR "Wards") OR (SU.EXACT("Terminally ill elderly people") OR SU.EXACT("Terminally ill fathers") OR

	SU.EXACT("Terminally ill elderly men") OR SU.EXACT("Terminally ill elderly women") OR SU.EXACT("Terminally ill young adults") OR SU.EXACT("Terminally ill parents") OR SU.EXACT("Terminally ill women") OR SU.EXACT("Terminally ill widowed sisters") OR SU.EXACT("Terminally ill colleagues") OR SU.EXACT("Terminally ill young girls") OR SU.EXACT("Terminally ill people") OR SU.EXACT("Terminally ill men")) OR SU.EXACT("Advance directives" OR "Do not resuscitate orders" OR "Durable power of attorney for health care" OR "Living wills" OR "Treatment preferences" OR "Treatment needs")) OR (ti,ab((advance* or patient*) N/3 (care or caring) N/3 (continu* or plan*)) or ti,ab(attitude* N/3 (death* or dying*)) or ti,ab(end N/2 life) or ti,ab(EOLC) or ti,ab((last or final) N/2 (year or month*) N/2 life) or ti,ab((dying or death) N/2 (patient* or person* or people or care or caring))))) OR SU.EXACT("End of life decisions")

B.2 Health Economics literature search strategy

Health economic evidence was identified by conducting a broad search relating to end of life care in NHS Economic Evaluation Database (NHS EED – this ceased to be updated after March 2015) and the Health Technology Assessment database (HTA) with no date restrictions. NHS EED and HTA databases are hosted by the Centre for Research and Dissemination (CRD). Additional searches were run on Medline and Embase for health economics, economic modelling and quality of life studies.

Table 46: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline	2014 – 04 January 2019	Exclusions Health economics studies Health economics modelling studies Quality of life studies
Embase	2014 – 04 January 2019	Exclusions Health economics studies Health economics modelling studies Quality of life studies
Centre for Research and Dissemination (CRD)	HTA - Inception – 04 January 2019 NHSEED - Inception to March 2015	None

Medline (Ovid) search terms

1.	Palliative care/
2.	Terminal care/
3.	Hospice care/
4.	palliat*.ti,ab.
5.	Terminally Ill/
6.	((terminal* or long term or longterm) adj2 (care* or caring or ill*)).ti,ab.
7.	((dying or terminal) adj (phase* or stage*)).ti,ab.
8.	life limit*.ti,ab.
9.	Nursing Homes/
10.	((care or nursing) adj2 (home or homes)).ti,ab.

11.	Respite Care/
12.	((respite or day) adj2 (care or caring)).ti,ab.
13.	Hospices/
14.	hospice*.ti,ab.
15.	exp Advance Care Planning/
16.	(advance* adj2 (plan* or decision* or directive*)).ti,ab.
17.	living will*.ti,ab.
18.	*Patient care planning/
19.	*"Continuity of Patient Care"/
20.	((advance* or patient*) adj3 (care or caring) adj3 (continu* or plan*)).ti,ab.
21.	*Attitude to Death/
22.	(attitude* adj3 (death* or dying*)).ti,ab.
23.	*Physician-Patient Relations/
24.	*Long-Term Care/
25.	*"Delivery of Health Care"/
26.	(end adj2 life).ti,ab.
27.	EOLC.ti,ab.
28.	((last or final) adj2 (year or month*) adj2 life).ti,ab.
29.	((dying or death) adj2 (patient* or person* or people or care or caring)).ti,ab.
30.	or/1-29
31.	letter/
32.	editorial/
33.	news/
34.	exp historical article/
35.	Anecdotes as Topic/
36.	comment/
37.	case report/
38.	(letter or comment*).ti.
39.	or/31-38
40.	randomized controlled trial/ or random*.ti,ab.
41.	39 not 40
42.	animals/ not humans/
43.	exp Animals, Laboratory/
44.	exp Animal Experimentation/
45.	exp Models, Animal/
46.	exp Rodentia/
47.	(rat or rats or mouse or mice).ti.
48.	or/41-47
49.	30 not 48
50.	limit 49 to English language
51.	(exp child/ or exp pediatrics/ or exp infant/) not (exp adolescent/ or exp adult/ or exp middle age/ or exp aged/)
52.	50 not 51
53.	economics/
54.	value of life/

55.	exp "costs and cost analysis"/
56.	exp Economics, Hospital/
57.	exp Economics, medical/
58.	Economics, nursing/
59.	economics, pharmaceutical/
60.	exp "Fees and Charges"/
61.	exp budgets/
62.	budget*.ti,ab.
63.	cost*.ti.
64.	(economic* or pharmaco?economic*).ti.
65.	(price* or pricing*).ti,ab.
66.	(cost* adj2 (effectiv* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)).ab.
67.	(financ* or fee or fees).ti,ab.
68.	(value adj2 (money or monetary)).ti,ab.
69.	or/53-68
70.	exp models, economic/
71.	*Models, Theoretical/
72.	*Models, Organizational/
73.	markov chains/
74.	monte carlo method/
75.	exp Decision Theory/
76.	(markov* or monte carlo).ti,ab.
77.	econom* model*.ti,ab.
78.	(decision* adj2 (tree* or analy* or model*)).ti,ab.
79.	or/70-78
80.	quality-adjusted life years/
81.	sickness impact profile/
82.	(quality adj2 (wellbeing or well being)).ti,ab.
83.	sickness impact profile.ti,ab.
84.	disability adjusted life.ti,ab.
85.	(qal* or qtime* or qwb* or daly*).ti,ab.
86.	(euroqol* or eq5d* or eq 5*).ti,ab.
87.	(qol* or hql* or hqol* or h qol* or hrqol* or hr qol*).ti,ab.
88.	(health utility* or utility score* or disutilit* or utility value*).ti,ab.
89.	(hui or hui1 or hui2 or hui3).ti,ab.
90.	(health* year* equivalent* or hye or hyes).ti,ab.
91.	discrete choice*.ti,ab.
92.	rosser.ti,ab.
93.	(willingness to pay or time tradeoff or time trade off or tto or standard gamble*).ti,ab.
94.	(sf36* or sf 36* or short form 36* or shortform 36* or shortform36*).ti,ab.
95.	(sf20 or sf 20 or short form 20 or shortform 20 or shortform20).ti,ab.
96.	(sf12* or sf 12* or short form 12* or shortform 12* or shortform12*).ti,ab.
97.	(sf8* or sf 8* or short form 8* or shortform 8* or shortform8*).ti,ab.
98.	(sf6* or sf 6* or short form 6* or shortform 6* or shortform6*).ti,ab.
99.	or/80-98

100.	52 and (69 or 79 or 99)

1 **Embase (Ovid) search terms**

1.	*Palliative therapy/
2.	*Terminal care/
3.	*Hospice care/
4.	palliat*.ti,ab.
5.	*Terminally ill patient/
6.	((terminal* or long term or longterm) adj2 (care* or caring or ill*)).ti,ab.
7.	((dying or terminal) adj (phase* or stage*)).ti,ab.
8.	life limit*.ti,ab.
9.	*Nursing home/
10.	((care or nursing) adj2 (home or homes)).ti,ab.
11.	*Respite Care/
12.	((respite or day) adj2 (care or caring)).ti,ab.
13.	*Hospice/
14.	hospice*.ti,ab.
15.	*Patient care planning/
16.	(advance* adj2 (plan* or decision* or directive*)).ti,ab.
17.	living will*.ti,ab.
18.	*Patient care/
19.	((advance* or patient*) adj3 (care or caring) adj3 (continu* or plan*)).ti,ab.
20.	*Attitude to Death/
21.	(attitude* adj3 (death* or dying*)).ti,ab.
22.	*Doctor patient relation/
23.	*Long term care/
24.	*Health care delivery/
25.	(end adj2 life).ti,ab.
26.	EOLC.ti,ab.
27.	((last or final) adj2 (year or month*) adj2 life).ti,ab.
28.	((dying or death) adj2 (patient* or person* or people or care or caring)).ti,ab.
29.	or/1-28
30.	letter.pt. or letter/
31.	note.pt.
32.	editorial.pt.
33.	case report/ or case study/
34.	(letter or comment*).ti.
35.	or/30-34
36.	randomized controlled trial/ or random*.ti,ab.
37.	35 not 36
38.	animal/ not human/

39.	nonhuman/
40.	exp Animal Experiment/
41.	exp Experimental Animal/
42.	animal model/
43.	exp Rodent/
44.	(rat or rats or mouse or mice).ti.
45.	or/37-44
46.	29 not 45
47.	limit 46 to English language
48.	(exp child/ or exp pediatrics/ or exp infant/) not (exp adolescent/ or exp adult/ or exp middle age/ or exp aged/)
49.	47 not 48
50.	health economics/
51.	exp economic evaluation/
52.	exp health care cost/
53.	exp fee/
54.	budget/
55.	funding/
56.	budget*.ti,ab.
57.	cost*.ti.
58.	(economic* or pharmaco?economic*).ti.
59.	(price* or pricing*).ti,ab.
60.	(cost* adj2 (effectiv* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)).ab.
61.	(financ* or fee or fees).ti,ab.
62.	(value adj2 (money or monetary)).ti,ab.
63.	or/50-62
64.	statistical model/
65.	exp economic aspect/
66.	64 and 65
67.	*theoretical model/
68.	*nonbiological model/
69.	stochastic model/
70.	decision theory/
71.	decision tree/
72.	monte carlo method/
73.	(markov* or monte carlo).ti,ab.
74.	econom* model*.ti,ab.
75.	(decision* adj2 (tree* or analy* or model*)).ti,ab.
76.	or/66-75
77.	quality-adjusted life years/
78.	"quality of life index"/

79.	short form 12/ or short form 20/ or short form 36/ or short form 8/
80.	sickness impact profile/
81.	(quality adj2 (wellbeing or well being)).ti,ab.
82.	sickness impact profile.ti,ab.
83.	disability adjusted life.ti,ab.
84.	(qal* or qtime* or qwb* or daly*).ti,ab.
85.	(euroqol* or eq5d* or eq 5*).ti,ab.
86.	(qol* or hql* or hqol* or h qol* or hrqol* or hr qol*).ti,ab.
87.	(health utility* or utility score* or disutilit* or utility value*).ti,ab.
88.	(hui or hui1 or hui2 or hui3).ti,ab.
89.	(health* year* equivalent* or hye or hyes).ti,ab.
90.	discrete choice*.ti,ab.
91.	rosser.ti,ab.
92.	(willingness to pay or time tradeoff or time trade off or tto or standard gamble*).ti,ab.
93.	(sf36* or sf 36* or short form 36* or shortform 36* or shortform36*).ti,ab.
94.	(sf20 or sf 20 or short form 20 or shortform 20 or shortform20).ti,ab.
95.	(sf12* or sf 12* or short form 12* or shortform 12* or shortform12*).ti,ab.
96.	(sf8* or sf 8* or short form 8* or shortform 8* or shortform8*).ti,ab.
97.	(sf6* or sf 6* or short form 6* or shortform 6* or shortform6*).ti,ab.
98.	or/77-97
99.	49 and (63 or 76 or 98)

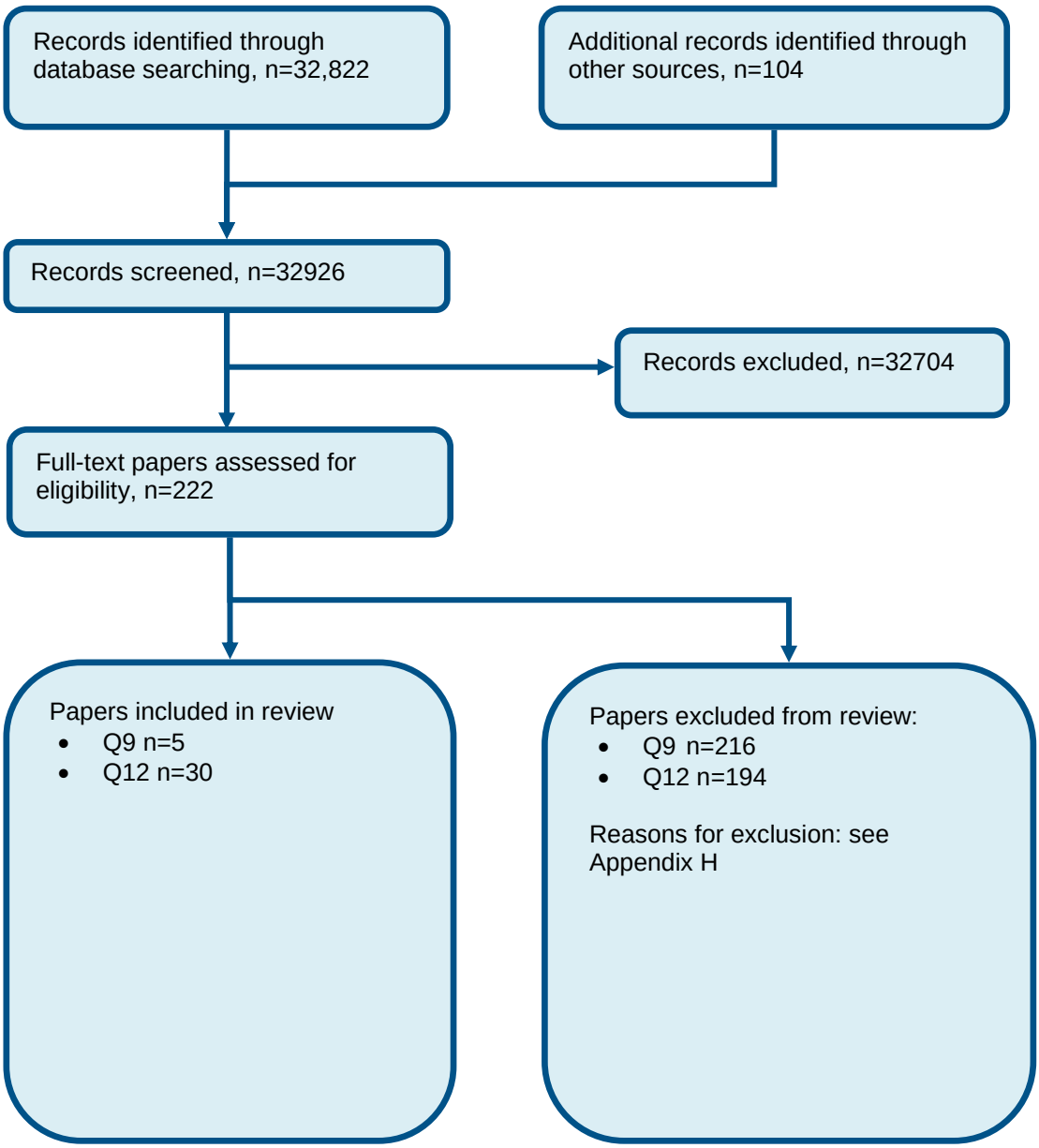
1 **NHS EED and HTA (CRD) search terms**

#1.	MeSH DESCRIPTOR Palliative Care IN NHSEED,HTA
#2.	MeSH DESCRIPTOR Terminal Care IN NHSEED,HTA
#3.	MeSH DESCRIPTOR Hospice Care IN NHSEED,HTA
#4.	(palliat*) IN NHSEED, HTA
#5.	MeSH DESCRIPTOR Terminally Ill IN NHSEED,HTA
#6.	(((terminal* or long term or longterm) adj2 (care* or caring or ill*))) IN NHSEED, HTA
#7.	(((dying or terminal) adj (phase* or stage*))) IN NHSEED, HTA
#8.	(life limit*) IN NHSEED, HTA
#9.	MeSH DESCRIPTOR Nursing Homes IN NHSEED,HTA
#10.	(((care or nursing) adj2 (home or homes))) IN NHSEED, HTA
#11.	MeSH DESCRIPTOR Respite Care IN NHSEED,HTA
#12.	(((respite or day) adj2 (care or caring))) IN NHSEED, HTA
#13.	MeSH DESCRIPTOR Hospices IN NHSEED,HTA
#14.	(hospice*) IN NHSEED, HTA
#15.	MeSH DESCRIPTOR Advance Care Planning EXPLODE ALL TREES IN NHSEED,HTA
#16.	((advance* adj2 (plan* or decision* or directive*))) IN NHSEED, HTA
#17.	(living will*) IN NHSEED, HTA
#18.	MeSH DESCRIPTOR Patient Care Planning IN NHSEED,HTA
#19.	MeSH DESCRIPTOR Continuity of Patient Care IN NHSEED,HTA

#20.	(((advance* or patient*) adj3 (care or caring) adj3 (continu* or plan*))) IN NHSEED, HTA
#21.	MeSH DESCRIPTOR Attitude to Death IN NHSEED,HTA
#22.	((attitude* adj3 (death* or dying*))) IN NHSEED, HTA
#23.	MeSH DESCRIPTOR Physician-Patient Relations IN NHSEED,HTA
#24.	MeSH DESCRIPTOR Long-Term Care IN NHSEED,HTA
#25.	MeSH DESCRIPTOR Delivery of Health Care IN NHSEED,HTA
#26.	((end adj2 life)) IN NHSEED, HTA
#27.	(EOLC) IN NHSEED, HTA
#28.	(((last or final) adj2 (year or month*) adj2 life)) IN NHSEED, HTA
#29.	(((dying or death) adj2 (patient* or person* or people or care or caring))) IN NHSEED, HTA
#30.	#1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14 OR #15 OR #16 OR #17 OR #18 OR #19 OR #20 OR #21 OR #22 OR #23 OR #24 OR #25 OR #26 OR #27 OR #28 OR #29
#31.	(#30) IN NHSEED
#32.	(#30) IN HTA

Appendix C: Clinical evidence selection

Figure 1: Flow chart of clinical study selection for the review of Additional services and inappropriate admissions



Appendix D: Clinical evidence tables

D.1 Availability of additional community services on a regular/routine basis

Study	Abel 2013[1]
Study type	Non-randomised comparative study
Number of studies (number of participants)	1 (n=969)
Countries and setting	Conducted in United Kingdom; Setting: A hospice in the south west of England
Line of therapy	Unclear
Duration of study	Intervention + follow up: 2.5 years
Method of assessment of guideline condition	Adequate method of assessment/diagnosis
Stratum	Adults (aged 18 years or over)
Subgroup analysis within study	Not applicable
Inclusion criteria	All patients who were known to the hospice who died between 01 January 2009 and 30 June 2011. All the patients had a life limiting disease and were referred to the hospice for specialist palliative care.
Exclusion criteria	Not reported
Recruitment/selection of patients	Retrospectively assessed data-set
Age, gender and ethnicity	Age - Mean (range): 75 (27-105). Gender (M:F): 501/468. Ethnicity:
Further population details	1. Any specific population: Not applicable
Indirectness of population	No indirectness
Interventions	(n=547) Intervention 1: Availability of additional community services on a regular/routine basis - Additional community services on a regular/routine basis. Advanced care planning. A single document for ACP, 'Planning Ahead', which combines a modified version of the Preferred Priorities For Care document with a Putting Affairs In Order guide and an Advance Decision To Refuse Treatment document. Duration 2.5 years. Concurrent medication/care: Specialist palliative care. Inpatient and outpatient services, visits from specialist palliative care community nurses at home and a day care centre. (n=422) Intervention 2: Availability of additional community services on a regular/routine basis - Additional

Study	Abel 2013[1]
	community services on a regular/routine basis. No advanced care planning.. Duration 2.5 years. Concurrent medication/care: Specialist palliative care. Inpatient and outpatient services, visits from specialist palliative care community nurses at home and a day care centre.
Funding	Funding not stated

RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: HOSPICE CARE (WITH ACP) versus HOSPICE CARE (WITHOUT ACP)

Protocol outcome 1: Length of stay
- Actual outcome for Adults (aged 18 years or over): Mean stay for those with or without an admission in the last year of life. at 1 year; Mean (Mean (95% CI) ACP: 18.1 (16.0 to 20.2) No ACP: 26.4 (22.8 to 30.0)); Risk of bias: All domain - High, Blinding - High, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ;

Protocol outcome 2: Number of hospital visits
- Actual outcome for Adults (aged 18 years or over): Mean number of admissions in the last year of life at 1 year; Risk of bias: All domain - High, Blinding - High, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ;
Protocol outcome 3: Number of visits to accident and emergency
- Actual outcome for Adults (aged 18 years or over): Number of patients who had ≥1 emergency admission in the last year of life. at 1 year; Group 1: 481/547, Group 2: 384/422; Risk of bias: All domain - High, Blinding - High, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ;
- Actual outcome for Adults (aged 18 years or over): Mean number of emergency admissions in the last year of life. at 1 year; Risk of bias: All domain - High, Blinding - High, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ;

Protocol outcome 4: Preferred and actual place of death
- Actual outcome for Adults (aged 18 years or over): Hospital deaths at 1 year; Risk of bias: All domain - High, Blinding - High, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: Serious indirectness, Comments: Not stated if preferred place of death;

Protocol outcomes not reported by the study	Quality of life; Number of unscheduled admissions; Use of community services; Length of survival; Staff satisfaction; Avoidable/inappropriate admissions to ICU ; Inappropriate attempts at cardiopulmonary resuscitation; Patient/carer reported outcomes (satisfaction); Preferred and actual place of care; Hospitalisation

Study (subsidiary papers)	Addington-hall 1992[2] (Raftery 1996[187])

Study type	RCT (Service randomised; Parallel)
Number of studies (number of participants)	2 (n=554)
Countries and setting	Conducted in United Kingdom; Setting: A South London health authority
Line of therapy	Not applicable
Duration of study	Intervention + follow up: 3 years (1987-1990)
Method of assessment of guideline condition	Adequate method of assessment/diagnosis: prognosis assessed by doctor or senior nurse
Stratum	Adults (aged 18 yrs. or over): stratification by number of general practitioners and postal district
Subgroup analysis within study	Stratified then randomised:
Inclusion criteria	Patient expected to live for one year or less and who were resident within the boundaries of the health authority entered the trial and were allocated to the coordination or control group depending on the general practice with which they were registered.
Exclusion criteria	Not stated
Recruitment/selection of patients	Each time any cancer patient was admitted to the single acute hospital (St George Hospital, Tooting) in the district, the research team was notified and was a doctor or senior nurse familiar with the patient's condition assessed the patient as having a prognosis of more or less than one year. Those attending outpatients clinics (oncology, radiotherapy, general surgery or urology) had their prognoses estimated by the doctors they saw.
Age, gender and ethnicity	Age - Other: N for intervention (n=104) and control group (n=99) respectively: age 18-49 n=3, 5; age 50-64 n=16, 19; age 65-74, n=32, 21; age >75, n=53, 54. Gender (M:F): 94/109. Ethnicity: not stated
Further population details	1. Any specific population: Not applicable
Extra comments	N for intervention (n=104) and control group (n=99), respectively: primary cancer breast 16, 14; lung 19, 22; colorectal 20, 19; prostate 15, 9; other 34, 35; died before the end of the study: 66, 77. . Initially 89 practices were allocated to the coordination group and 79 to the control group. In Sept 1987 when it became apparent that too few patients were entering the coordination group to keep the nurse coordinators fully employed, 13 randomly selected control group practices were transferred to the coordination group.
Indirectness of population	No indirectness
Interventions	(n=318) Intervention 1: Coordinator. Nurse coordinators. They were based in the community and introduced themselves to patients as nurses providing a link between the hospital, general practitioner and community services. They acted as 'brokers' of services: their role was to assess the need for services from the NHS, local authorities and voluntary sector agencies; to offer advice on how to obtain these services and to contact the agencies themselves if necessary; to ensure that services were provided and were well coordinated; and to monitor the changing needs of the patient and family for services. Patients were

	encouraged to contact the coordinators if they needed help or advice. The coordinators did not provide practical nursing care or advice, liaising with Macmillan or Marie Curie nurses as appropriate. Initially, two experienced district nurses who held the ENB certificate in care of the Dying patient were recruited as coordinators. One coordinator left during the trial and was replaced first by a health visitor and later by another district nurse, neither of whom held the ENB certificate. The coordinators were in post for one year before the evaluation began. . Duration 3 years. Concurrent medication/care: All recruited patients continued to receive routinely available services. The range of services available included inpatient and outpatient services in the local acute hospital, general practitioner and community nursing services, including both district nurses and Macmillan nurses (who specialise in palliative care); Marie curie nurses, services from the local hospice (Trinity hospice) which included inpatient beds and a home care team (four nursing sisters and medical support) and specialist cancer services from a nearby special health authority (Royal Marsden Hospitals in Sutton and Fulham, where patients were sent for radiotherapy). Social services, including social workers, meals on wheels and home helps, were provided by Wandsworth Borough Council. (n=236) Intervention 2: Usual care. No access to coordinator. Duration 3 years. Concurrent medication/care: All recruited patients continued to receive routinely available services. The range of services available included inpatient and outpatient services in the local acute hospital, general practitioner and community nursing services, including both district nurses and Macmillan nurses (who specialise in palliative care); Marie curie nurses, services from the local hospice (Trinity hospice) which included inpatient beds and a home care team (four nursing sisters and medical support) and specialist cancer services from a nearby special health authority (Royal Marsden Hospitals in Sutton and Fulham, where patients were sent for radiotherapy). Social services, including social workers, meals on wheels and home helps, were provided by Wandsworth Borough Council.
Funding	Academic or government funding (Medical research council)

RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: NURSE COORDINATOR versus USUAL CARE

Protocol outcome 1: Length of stay
- Actual outcome for Adults (aged 18 yrs or over): Inpatient days at end of follow up; Group 1: mean 24.1 days (SD 30.6); n=86, Group 2: mean 40 days (SD 48.7); n=81
Risk of bias: All domain - Very high, Selection - Very high, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ; Group 1 Number missing: 232, Reason: 147 died/too ill; 32 moved; 35 refused; 18 full service use data not located; Group 2 Number missing: 155, Reason: 98 died/too ill; 8 moved; 31 refused; 18 full service data not located

Protocol outcome 2: Hospitalisation
- Actual outcome for Adults (aged 18 yrs or over): Admissions at end of follow up; Group 1: mean 2.5 days (SD 3.3); n=86, Group 2: mean 3.3 days (SD 3); n=81
Risk of bias: All domain - Very high, Selection - Very high, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ; Group 1 Number missing: 232, Reason: 147 died/too ill; 32 moved; 35 refused; 18 full service use data not located; Group 2 Number missing: 155, Reason: 98 died/too ill; 8 moved; 31 refused; 18 full service data not located

Protocol outcome 3: Number of hospital visits
- Actual outcome for Adults (aged 18 yrs or over): Outpatient attendances at end of follow up; Group 1: mean 18 (SD 9); n=86, Group 2: mean 10.1 (SD 10.3); n=81
Risk of bias: All domain - Very high, Selection - Very high, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ; Group 1 Number missing: 232, Reason: 147 died/too ill; 32 moved; 35 refused; 18 full service use data not located; Group 2 Number missing: 155, Reason: 98 died/too ill; 8 moved; 31 refused; 18 full service data not located

Protocol outcome 4: Use of community services
- Actual outcome for Adults (aged 18 yrs or over): Home visits (district nurses, Macmillan nurses, hospital oncology nurse, hospice homecare team) at end of follow up; Group 1: mean 14.5 (SD 22); n=86, Group 2: mean 37.5 (SD 67.4); n=81
Risk of bias: All domain - Very high, Selection - Very high, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ; Group 1 Number missing: 214, Reason: 147 died/too ill; 32 moved; 35 refused; Group 2 Number missing: 137, Reason: 98 died/too ill; 8 moved; 31 refused
- Actual outcome for Adults (aged 18 yrs or over): People known to social workers (local authority) at end of follow up; Group 1: 33/86, Group 2: 35/81
Risk of bias: All domain - Very high, Selection - Very high, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ; Group 1 Number missing: 232, Reason: 147 died/too ill; 32 moved; 35 refused; 18 full service use data not located; Group 2 Number missing: 155, Reason: 98 died/too ill; 8 moved; 31 refused; 18 full service data not located
- Actual outcome for Adults (aged 18 yrs or over): People known to occupational therapists at end of follow up; Group 1: 43/86, Group 2: 37/81
Risk of bias: All domain - Very high, Selection - Very high, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ; Group 1 Number missing: 232, Reason: 147 died/too ill; 32 moved; 35 refused; 18 full service use data not located; Group 2 Number missing: 155, Reason: 98 died/too ill; 8 moved; 31 refused; 18 full service data not located
- Actual outcome for Adults (aged 18 yrs or over): Pts having contact with GP in 2 weeks before interview (home visits) at end of follow up; Group 1: 23/103, Group 2: 23/99
Risk of bias: All domain - Very high, Selection - Very high, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ; Group 1 Number missing: 232, Reason: 147 died/too ill; 32 moved; 35 refused; Group 2 Number missing: 155, Reason: 98 died/too ill; 8 moved; 31 refused
- Actual outcome for Adults (aged 18 yrs or over): Pts having contact with GP in 2 weeks before interview (surgery consultation) at end of follow up; Group 1: 13/103, Group 2: 18/99
Risk of bias: All domain - Very high, Selection - Very high, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ; Group 1 Number missing: 232, Reason: 147 died/too ill; 32 moved; 35 refused; Group 2 Number missing: 155, Reason: 98 died/too ill; 8 moved; 31 refused
- Actual outcome for Adults (aged 18 yrs or over): Pts having contact with hospice or Macmillan sister in 2 weeks before interview at end of follow up; Group 1: 7/103, Group 2: 11/99
Risk of bias: All domain - Very high, Selection - Very high, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ; Group 1 Number missing: 214, Reason: 147 died/too ill; 32 moved; 35 refused; Group 2 Number missing: 137, Reason: 98 died/too ill; 8 moved; 31 refused

- Actual outcome for Adults (aged 18 yrs or over): Pts having contact with district nurses in 2 weeks before interview at end of follow up; Group 1: 38/103, Group 2: 39/99
Risk of bias: All domain - Very high, Selection - Very high, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ; Group 1 Number missing: 214, Reason: 147 died/too ill; 32 moved; 35 refused; Group 2 Number missing: 137, Reason: 98 died/too ill; 8 moved; 31 refused

Protocol outcome 5: Preferred and actual place of death
- Actual outcome for Adults (aged 18 yrs or over): N of people dying at home at time of death; Group 1: 17/86, Group 2: 14/81
Risk of bias: All domain - Very high, Selection - Very high, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: Serious indirectness, Comments: preferred place of death not reported; Group 1 Number missing: 232, Reason: 147 died/too ill; 32 moved; 35 refused; 18 full service use data not located; Group 2 Number missing: 155, Reason: 98 died/too ill; 8 moved; 31 refused; 18 full service data not located
- Actual outcome for Adults (aged 18 yrs or over): N of people dying in hospital at time of death; Group 1: 29/86, Group 2: 36/81
Risk of bias: All domain - Very high, Selection - Very high, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: Serious indirectness, Comments: preferred place of death not reported; Group 1 Number missing: 232, Reason: 147 died/too ill; 32 moved; 35 refused; 18 full service use data not located; Group 2 Number missing: 155, Reason: 98 died/too ill; 8 moved; 31 refused; 18 full service data not located
- Actual outcome for Adults (aged 18 yrs or over): N of people dying in hospice at time of death; Group 1: 10/86, Group 2: 12/81
Risk of bias: All domain - Very high, Selection - Very high, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: Serious indirectness, Comments: preferred place of death not reported; Group 1 Number missing: 232, Reason: 147 died/too ill; 32 moved; 35 refused; 18 full service use data not located; Group 2 Number missing: 155, Reason: 98 died/too ill; 8 moved; 31 refused; 18 full service data not located
- Actual outcome for Adults (aged 18 yrs or over): N of people dying elsewhere (not home, hospital, hospice) at time of death; Group 1: 2/86, Group 2: 2/81
Risk of bias: All domain - Very high, Selection - Very high, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: Serious indirectness, Comments: preferred place of death not reported; Group 1 Number missing: 232, Reason: 147 died/too ill; 32 moved; 35 refused; 18 full service use data not located; Group 2 Number missing: 155, Reason: 98 died/too ill; 8 moved; 31 refused; 18 full service data not located

Protocol outcome 6: Length of survival
- Actual outcome for Adults (aged 18 yrs or over): Mean days between study entry and death at time of death; Mean; Intervention group)n=55), mean 211 days; control group (n=64), mean 232 days;
Risk of bias: All domain - Very high, Selection - Very high, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness; Group 1 Number missing: 232, Reason: 147 died/too ill; 32 moved; 35 refused; 18 full service use data not located; Group 2 Number missing: 155, Reason: 98 died/too ill; 8 moved; 31 refused; 18 full service data not located

Protocol outcome 7: Patient/carer reported outcomes (satisfaction)
- Actual outcome for Adults (aged 18 yrs or over): Carers agreeing with the statement 'care was well coordinated' at after bereavement; Group 1: 31/51, Group 2: 27/43
Risk of bias: All domain - Very high, Selection - Very high, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: Serious indirectness, Comments: n of people satisfied, not satisfaction score; Group 1 Number missing: 214, Reason: 147 died/too ill; 32

moved; 35 refused; Group 2 Number missing: 137, Reason: 98 died/too ill; 8 moved; 31 refused - Actual outcome for Adults (aged 18 yrs or over): Patients satisfied with care from hospital at end of follow up; Group 1: 62/104, Group 2: 45/99 Risk of bias: All domain - Very high, Selection - Very high, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: Serious indirectness, Comments: n of people satisfied, not satisfaction score; Group 1 Number missing: 214, Reason: 147 died/too ill; 32 moved; 35 refused; Group 2 Number missing: 137, Reason: 98 died/too ill; 8 moved; 31 refused - Actual outcome for Adults (aged 18 yrs or over): Patients satisfied with care from GP at end of follow up; Group 1: 72/104, Group 2: 63/99 Risk of bias: All domain - Very high, Selection - Very high, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: Serious indirectness, Comments: n of people satisfied, not satisfaction score; Group 1 Number missing: 214, Reason: 147 died/too ill; 32 moved; 35 refused; Group 2 Number missing: 137, Reason: 98 died/too ill; 8 moved; 31 refused - Actual outcome for Adults (aged 18 yrs or over): Patients satisfied with care from district nurses at end of follow up; Group 1: 63/104, Group 2: 40/99 Risk of bias: All domain - Very high, Selection - Very high, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: Serious indirectness, Comments: n of people satisfied, not satisfaction score; Group 1 Number missing: 214, Reason: 147 died/too ill; 32 moved; 35 refused; Group 2 Number missing: 137, Reason: 98 died/too ill; 8 moved; 31 refused - Actual outcome for Adults (aged 18 yrs or over): Carers satisfied with care from hospital at end of follow up; Group 1: 42/56, Group 2: 40/62 Risk of bias: All domain - Very high, Selection - Very high, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: Serious indirectness, Comments: n of people satisfied, not satisfaction score; Group 1 Number missing: 214, Reason: 147 died/too ill; 32 moved; 35 refused; Group 2 Number missing: 137, Reason: 98 died/too ill; 8 moved; 31 refused - Actual outcome for Adults (aged 18 yrs or over): Carers satisfied with care from GP at end of follow up; Group 1: 38/56, Group 2: 42/62 Risk of bias: All domain - Very high, Selection - Very high, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: Serious indirectness, Comments: n of people satisfied, not satisfaction score; Group 1 Number missing: 214, Reason: 147 died/too ill; 32 moved; 35 refused; Group 2 Number missing: 137, Reason: 98 died/too ill; 8 moved; 31 refused - Actual outcome for Adults (aged 18 yrs or over): Carers satisfied with care from district nurses at end of follow up; Group 1: 33/56, Group 2: 27/62 Risk of bias: All domain - Very high, Selection - Very high, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: Serious indirectness, Comments: n of people satisfied, not satisfaction score; Group 1 Number missing: 214, Reason: 147 died/too ill; 32 moved; 35 refused; Group 2 Number missing: 137, Reason: 98 died/too ill; 8 moved; 31 refused	
Protocol outcomes not reported by the study	Quality of life; Number of unscheduled admissions; Staff satisfaction; Avoidable/inappropriate admissions to ICU; Inappropriate resuscitation; Preferred and actual place of care; Number of visits to accident and emergency

Study	Aiken 2006[5]
Study type	RCT (Patient randomised; Parallel)
Number of studies (number of participants)	1 (n=192)
Countries and setting	Conducted in USA; Setting: Seven MCOs in the Phoenix, Arizona metropolitan area
Line of therapy	Not applicable
Duration of study	Intervention + follow up: enrolment 2 years (1999-2001) + follow up 6 months
Method of assessment of guideline condition	Adequate method of assessment/diagnosis
Stratum	Adults (aged 18 yrs. or over):
Subgroup analysis within study	Stratified then randomised: Randomisation was carried out within diagnosis
Inclusion criteria	People residing at home, members of one of the seven MCOs in the Phoenix, Arizona, metropolitan area. Patients diagnosed with chronic heart failure (CHF) or chronic obstructive pulmonary disease (COPD) who might live for up to 2 years beyond enrolment, based on expert judgment that drew on available prognostic data. All participants were required to be 18 years or older. Patients with CHF were required to be diagnosed with either class IIIB heart failure (symptoms with any activity) or class IV heart failure (symptoms at rest). Patients with COPD were required to have oxygen saturations of less than 88% on room air, or baseline pO2 less than 55 on room air, and to be on continuous oxygen. Across the two diseases, all patients were required to exhibit marked limitation of physical functioning, in that any activity resulted in fatigue, palpitation, dyspnea, or angina. All patients were required to have exhibited recent exacerbation of their conditions as evidenced by treatment in an emergency department, urgent care facility, or hospital within the 3 months prior to enrolment. For purposes of data collection by phone interview, patients were required to have a telephone in the home, and to either speak English or to have a translator present in the home.
Exclusion criteria	Not stated
Recruitment/selection of patients	Patients could be referred by community agencies, hospitals, the MCOs, physicians, family/friends, or by self-referral.
Age, gender and ethnicity	Age - Mean (SD): Intervention group 68(14), control group 70(13). Gender (M:F): 69/121. Ethnicity: 80% intervention group and 84% control group were Caucasian
Further population details	1. Any specific population: Not applicable
Extra comments	.
Indirectness of population	Serious indirectness: Life expectancy up to 2 years
Interventions	(n=101) Intervention 1: Case manager. Registered nurse case managers, each with a caseload of 30-35 patients, provided 'PhoenixCare' services. Phoenixcare delivered home-based services focused on disease and symptom management, patient and caregiver education on disease management and social and

Study	Aiken 2006[5]
	psychological support. Registered nurse case managers delivered the primary PhoenixCare services and assumed a leadership role in coordinating PhoenixCare services with the patients' primary care physician, with any case managers provided by the patient's MCO, and with community agencies. A medical director, social worker, and pastoral counsellor provided support to case managers, who coordinated care planning with PhoenixCare members, primary care physicians, health plan case manager (if there was one), patient/family and community agencies. Three distinct care protocols addressed phases of service delivery: 1) admission and initial case management of medically unstable patients; 2) management of stable patients following stabilisation, 3) support of unstable patients experiencing an exacerbation episode. All three protocols provided disease and symptom management, educational services, and support services. . Duration 6 months follow up. Concurrent medication/care: Patients did not relinquish any health care services for which they were otherwise eligible (n=91) Intervention 2: Usual care. Usual care provided by the MCO, including medication and technical treatment. The focus of MCO case management was medical and disease-oriented, including medication and lab monitoring, weight/blood pressure and blood glucose monitoring, and implementation of prior authorization mechanisms. Services were delivered by phone by all seven MCOs and through occasional home visits (in 5 MCOs). Other support services included disease and symptom education, nutrition, and psychological counselling, transportation and coordination of medical service. Each MCO provided its own individual case management to some portion of their clients. Duration 6 months follow up. Concurrent medication/care: not stated.
Funding	Other (This was a project of the Robert Wood Johnson Foundation. It was also supported in part by the Flinn Foundation, Phoenix, Arizona, and St Luke Health Initiatives, Phoenix, Arizona.)

RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: CASE MANAGER versus USUAL CARE

Protocol outcome 1: Quality of life
- Actual outcome for Adults (aged 18 yrs. or over): SF36 at 3 months; Other: COPD patients in the intervention group reported greater Vitality than COPD controls; Risk of bias: All domain – Very high, Selection – Very high, Blinding - High, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness
- Actual outcome for Adults (aged 18 yrs. or over): SF36 at 9 months; Other: Control patients declined in both Physical function and General health while intervention patients did not. Superior Physical functioning and General health emerged in the intervention above control participants. ; Risk of bias: All domain – Very high, Selection – Very high, Blinding - High, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness

Protocol outcome 2: Number of visits to accident and emergency
- Actual outcome for Adults (aged 18 yrs. or over): Emergency department visits per month at 6 months follow up; Group 1: mean 0.11 (SD 0.34); n=101,

Study	Aiken 2006[5]
Group 2: mean 0.1 (SD 0.31); n=91; Risk of bias: All domain – Very high, Selection – Very 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	Hospitalisation ; Number of hospital visits ; Number of unscheduled admissions ; Use of community services ; Preferred and actual place of death ; Length of survival ; Staff satisfaction ; Avoidable/inappropriate admissions to ICU ; Inappropriate resuscitation ; Patient/carer reported outcomes (satisfaction) ; Preferred and actual place of care ; Length of stay

	Ahlner-elmqvist 2004[4]
Study type	Non-randomised comparative study
Number of studies (number of participants)	1 (n=297)
Countries and setting	Conducted in Sweden; Setting: patients from the Departments of Oncology, Respiratory Medicine, Haematology, Surgery, Otorhinolaryngology, Urology and Gynaecology at Malmo¨ University Hospital
Line of therapy	Not applicable
Duration of study	4 years (recruitment in 1995-98, follow up ended in 1999)
Method of assessment of guideline condition	Adequate method of assessment/diagnosis
Stratum	Adults (aged 18 yrs. or over)
Subgroup analysis within study	Not applicable
Inclusion criteria	People who were above 18 years of age, had a histological verified malignant disease, were informed about their diagnoses and were in a palliative care situation
Exclusion criteria	life expectancy less than two months, life expectancy more than 12 months or non-Swedish speaking
Recruitment/selection of patients	Patients were informed about their diagnoses and got information about the possibility to get care at home. They were also informed that additional hospital treatment would be possible if needed. Then, the physician in charge referred those who explicitly wished to receive home care to the AHC team or the patient applied himself or herself. In the course of one to three days after the application was received, the team contacted the patient to plan the home care. Weekly meetings between the departments' professionals and the AHC team were also performed, to discuss the admittance of identified and referred patients
Age, gender and ethnicity	Age - Median (range): intervention group 67 (38-88), control group 68 (28-85). Gender (M:F): 136/144. Ethnicity:
Further population details	1. Any specific population: Not applicable
Indirectness of population	No indirectness

	Ahlner-elmqvist 2004[4]
Interventions	(n=119) Intervention 1: Availability of additional community services on a regular/routine basis - Additional community services on a regular/routine basis. The hospital-based AHC service was affiliated to the Department of Oncology at Malmo¨ University Hospital. The AHC service was a seven-days-a-week resource, complementary to the existing inpatient and community health care services, and was initially able to take care of 25 housebound patients at a time. The staff included a team of nine experienced nurses, an oncologist, a physiotherapist, a social worker and a secretary. A priest was associated on a consultation basis. All the professionals had long experience from advanced cancer care, but had no formal palliative care education or training. The latter also applies to the oncologist. Palliative medicine is still not a recognized speciality in Sweden. Hence there was no specific education programme within the area when the study was initiated. However, for all team professionals, a palliative care training programme was introduced before the AHC started. The nurses worked day and evening shifts and were available for emergency services during the night. The AHC oncologist and the other team members worked daytime hours. During evenings, nights and weekends, the physician on call at the Oncology Department served the AHC. If necessary the hospital oncologist could visit the patient at home outside the working hours of the AHC oncologist. Otherwise, the AHC team visits were planned according to the patient's needs and with a high degree of flexibility. In addition to symptom treatment, counselling and emotional, social and family supports were provided. Home visits could include interventions such as injections, intravenous fluid therapy, blood transfusions, chemotherapy, nasogastric intubation and catheterization of the urine bladder and various other forms of technical support. Three 'back-up' beds were available for the 25 AHC patients, two beds at the hospice and one at the oncology unit. . Duration 1 year follow-up. Concurrent medication/care: Not stated (n=178) Intervention 2: No additional community services available on a regular/routine basis (usual care) - Usual care. Conventional care: home care services including primary care centres served by general practitioners (GPs) and district nurses. Generally, patients in need of medical treatment have to visit these primary care centres and the GP only makes visits at home in exceptional circumstances. It is recognized that home care on a 24-hour basis is difficult to provide due to organizational limitations in primary care. Consequently, if a patient needs advanced medical and nursing care, he or she has to be admitted to hospital or may be offered a bed in a hospice. At the time of the study, the Dept. of Oncology at Malmo University department consisted of an outpatient's clinic, a day care unit, two inpatient oncology units (49 beds) and a hospice (16 beds). The hospice is located outside the hospital campus, 1 km away from the hospital. It is a seven-days-a-week unit and its service is based on providing support care and comfort in the last phase of an incurable disease. The staff include experienced nurses, a physician, a social worker and a priest on a consultation basis. Patients can be referred for both medical and psychosocial reasons and are normally admitted in the last palliative phase . Duration 1 year follow-up. Concurrent medication/care: Not stated

	Ahlner-elmqvist 2004[4]
Funding	-- (Supported by grants from The Swedish Cancer Society (grants no. 3650-B95-01XAC), The Vardal Foundation for Health Care Sciences and Allergy Research (grant no.V98 262), the SSSH Foundation, The Association for Cancer and Traffic Victims (grant no. C24405) and Malmo¨ University Hospital Funds)
RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: ADDITIONAL COMMUNITY SERVICES ON A REGULAR/ROUTINE BASIS (ADVANCED HOME CARE) versus USUAL CARE (COMMUNITY AND/OR HOSPITAL) Protocol outcome 1: Length of stay - Actual outcome for Adults (aged 18 yrs. or over): Length of stay (hospital) at end of follow-up; Risk of bias: 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; Baseline details: Differences in performance status (Karnofski performance index higher in the control group), time from diagnosis (longer in the home group), survival time after enrolment (shorter in the home group); Protocol outcome 2: Preferred and actual place of death - Actual outcome for Adults (aged 18 yrs. or over): Place of death (home) at end of follow-up; Group 1: 53/117, Group 2: 17/163; 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: Serious indirectness, Comments: Preferred place of death not reported; Baseline details: Differences in performance status (Karnofski performance index higher in the control group), time from diagnosis (longer in the home group), survival time after enrolment (shorter in the home group); - Actual outcome for Adults (aged 18 yrs. or over): Place of death (hospice) at end of follow-up; Group 1: 33/117, Group 2: 44/163; 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: Serious indirectness, Comments: Preferred place of death not reported; Baseline details: Differences in performance status (Karnofski performance index higher in the control group), time from diagnosis (longer in the home group), survival time after enrolment (shorter in the home group); - Actual outcome for Adults (aged 18 yrs. or over): Place of death (hospital) at end of follow-up; Group 1: 26/117, Group 2: 102/163; 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: Serious indirectness, Comments: Preferred place of death not reported; Baseline details: Differences in performance status (Karnofski performance index higher in the control group), time from diagnosis (longer in the home group), survival time after enrolment (shorter in the home group);	
Protocol outcomes not reported by the study	Quality of life ; Number of hospital visits ; Number of visits to accident and emergency ; Number of unscheduled admissions ; Use of community services ; Length of survival ; Staff satisfaction ; Avoidable/inappropriate admissions to ICU ; Inappropriate attempts at cardiopulmonary resuscitation ; Patient/carer reported outcomes (satisfaction) ; Preferred and actual place of care ; Hospitalisation

1
2

Study	Aoun 2013[9]
Study type	RCT (Patient randomised; Parallel)
Number of studies (number of participants)	1 (n=58)
Countries and setting	Conducted in Australia; Setting: Silver Chain Hospice Care Service
Line of therapy	Not applicable
Duration of study	Intervention + follow up: Data collection 18 months
Method of assessment of guideline condition	Adequate method of assessment/diagnosis
Stratum	Adults (aged 18 yrs. or over)
Subgroup analysis within study	Not applicable
Inclusion criteria	Cancer or non-cancer diagnosis requiring home-based palliative care, living at home alone, no family carer, understanding and speaking English, no cognitive impairment (clinical judgement of the nurse), no personal alarm at home, telephone landline (if randomised to the PA group
Exclusion criteria	NA
Recruitment/selection of patients	Potential participants were identified from the Silver Chain Hospice Care Service, the largest provider of home-based palliative care in Western Australia
Age, gender and ethnicity	Age - Other: not stated. Gender (M:F): 22/21. Ethnicity:
Further population details	1. Any specific population: Not stated / Unclear
Extra comments	Patients were terminally ill. NB data on the PA group has been extracted for Q9
Indirectness of population	No indirectness
Interventions	(n=19) Intervention 1: Availability of additional community services on a regular/routine basis - Additional community services on a regular/routine basis. Patients in the Care Aid (CA) support group each received an extra 30 hours of CA support in the 3 months-intervention period, particularly at weekends and after-hours when the routine service is limited by fewer staff being available. Four CA were recruited to participate in the project and received training to address the study requirement. In the study, CAs assisted with transport to doctor-s appointments, blood tests, visits to community pharmacists, shopping and transport. Inside the home, support included laundry, bed making, preparing meals, providing company during mealtime, social support and conversation, assisting with correspondence and personal care assistance. Patients also received standard care.. Duration 3 months. Concurrent medication/care: Not stated. (n=20) Intervention 2: No additional community services available on a regular/routine basis (usual care) - Usual care. Standard care: patients received the same care as patients who had a carer (they were not treated any differently because they were alone). SC is provided by an interdisciplinary team comprising

Study	Aoun 2013[9]
	general practitioners with a special interest in palliative care, palliative care specialist nurses, counsellors, chaplains, CAs, social workers and volunteers, who work with the patients to control symptoms or address psychosocial needs. Typically, nurses visit patients weekly or fortnightly and CAs visit one to three times per week depending on patients' needs. Duration 3 months. Concurrent medication/care: Not stated
Funding	Academic or government funding (Australian research council linkage grant, Silver chain hospice care service and Mandurah Rotary Club)
RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: ADDITIONAL COMMUNITY SERVICES ON A REGULAR/ROUTINE BASIS (CARE AIDE SUPPORT) versus USUAL CARE Protocol outcome 1: Quality of life - Actual outcome for Adults (aged 18 yrs. or over): QoL Index at 12 weeks; Risk of bias: All domain - Very high, Selection - Low, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ; Baseline details: CA group was more likely to receive regular help from visiting adults or children; Protocol outcome 2: Patient/carer reported outcomes (satisfaction) - Actual outcome for Adults (aged 18 yrs. or over): Patients' satisfaction with QoL at 12 weeks; Risk of bias: All domain - Very high, Selection - Low, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ; Baseline details: CA group was more likely to receive regular help from visiting adults or children;	
Protocol outcomes not reported by the study	Hospitalisation ; Number of hospital visits ; Number of visits to accident and emergency ; Number of unscheduled admissions ; Use of community services ; Preferred and actual place of death ; Length of survival ; Staff satisfaction ; Avoidable/inappropriate admissions to ICU ; Inappropriate attempts at cardiopulmonary resuscitation ; Preferred and actual place of care ; Length of stay

Study (subsidiary papers)	Bakitas 2009[17] (Bakitas 2009[16])
Study type	RCT (Patient randomised; Parallel)
Number of studies (number of participants)	1 (n=322)
Countries and setting	Conducted in USA; Setting: 2 sites: Norris Cotton Cancer Centre, VA medical centre
Line of therapy	Not applicable
Duration of study	Intervention + follow up: Recruitment November 2003-May 2007. Patients were followed up every three months until they died
Method of assessment of guideline	Adequate method of assessment/diagnosis

Study (subsidiary papers)	Bakitas 2009[17] (Bakitas 2009[16])
condition	
Stratum	Adults (aged 18 yrs. or over)
Subgroup analysis within study	Not applicable
Inclusion criteria	Patients with a new diagnosis of advanced or recurrent life-limiting cancer (prognosis of approx. 1 year). Eligible if they were within 8 to 12 weeks of a new diagnosis of GI tract (unresectable stage III or IV), lung (stage IIIB or IV non-small cell or extensive small cell), genitourinary tract (stage IV), or breast (stage IV and visceral crisis, lung or liver metastasis, estrogen receptor -ve, human epidermal growth factor receptor 2 positive) cancer.
Exclusion criteria	Patients with impaired cognition (<17 on a modified Mini-Mental state Examination), an Axis I psychiatric disorder (schizophrenia, bipolar disorder), or active substance use were excluded.
Recruitment/selection of patients	See population
Age, gender and ethnicity	Age - Mean (SD): 65.3 (11). Gender (M:F): Define. Ethnicity: 99% White
Further population details	1. Any specific population: Any specific population (People in whom life-prolonging therapies are still an active option).
Extra comments	Patients with a new diagnosis of advanced or recurrent life-limiting cancer. Recruited as soon as possible after diagnosis. .
Indirectness of population	No indirectness
Interventions	(n=161) Intervention 1: Availability of additional community services on a regular/routine basis - Additional community services on a regular/routine basis. ENABLE (Educate, Nurture, Advise, Before Life Ends). Advance palliative care nurse specialists educated participants about key palliative care principles and crisis prevention via practice problem solving/decision-making skills, symptom management, communication and advance care planning. Coordinated referrals to improve patients' end of life care experience. Referrals and services generally increased as illness progressed. The intervention was primarily conducted by telephone in order to be accessible to the rural population. Designed to facilitate a smooth transition from mostly anti-cancer treatment to mostly palliative care. Intervention included education via manual. The nurse educator contacted the participant weekly for the first four weeks to review each module in the manual. After the completion of the four structured sessions the nurse phoned the participant at least monthly. The nurse educator also triaged medical complaints and offered to arrange care and services as needed, including palliative and hospice care. Monthly contacts continued as long as the participant was alive. In the later stages the nurse communicated with the caregiver. . Duration Average length of follow up was 12 months. Concurrent medication/care: Concurrent cancer treatment (n=161) Intervention 2: No additional community services available on a regular/routine basis (usual care) - Usual care. Patients were allowed to use all usual oncology, palliative care and other medical centres

Study (subsidiary papers)	Bakitas 2009[17] (Bakitas 2009[16])
	without restrictions. The cancer centre had a consultative interdisciplinary palliative care team comprised of a physician and nurse practitioners. Oncologists could refer patients for assessments by this team for symptoms and supportive care while receiving anti-cancer treatments. Patients and family members were often followed up through to death and bereavement. From 2003-2005, the team expanded to include additional physicians, nurse practitioners and a dedicated social worker, chaplain, coordinator/volunteers and administrative staff. Towards the end of the study enrolment, automatic PCT consultation at the time of diagnosis became a routine part of the clinical pathways. The VAMC site also had an Advanced Cancer Illness Care Committee which provided consultation to oncology staff. . Duration Average duration was 12 months. Concurrent medication/care: Concurrent cancer treatment
Funding	Academic or government funding (National Cancer Institute)

RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: ADDITIONAL COMMUNITY SERVICES ON A REGULAR/ROUTINE BASIS (CARE COORDINATION VIA TELEPHONE) versus USUAL CARE

Protocol outcome 1: Quality of life
- Actual outcome for Adults (aged 18 yrs. or over): Functional Assessment of Chronic Illness Therapy for Palliative Care at Until death; 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: 32, Reason: death 15 withdrawals 15 (in addition to those who did not complete baseline assessment) (as above); Group 2 Number missing: 56, Reason: death 20 withdrawals 9
- Actual outcome for Adults (aged 18 yrs. or over): Functional Assessment of Chronic Illness Therapy for Palliative Care - patient who died during study at Until death; 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: 32, Reason: death 15 withdrawals 15 (in addition to those who did not complete baseline assessment) (as above); Group 2 Number missing: 56, Reason: death 20 withdrawals 9

Protocol outcome 2: Length of stay
- Actual outcome for Adults (aged 18 yrs. or over): Number of days in hospital at Until death; 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: 32, Reason: death 15 withdrawals 15 (in addition to those who did not complete baseline assessment) (as above); Group 2 Number missing: 56, Reason: death 20 withdrawals 9

Protocol outcome 3: Number of visits to accident and emergency
- Actual outcome for Adults (aged 18 yrs. or over): Number of emergency department visits at Until death; 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: 32, Reason: death 15 withdrawals 15 (in addition to those who did not complete baseline assessment) (as above); Group 2 Number missing: 56, Reason: death 20 withdrawals 9

Study (subsidiary papers)	Bakitas 2009[17] (Bakitas 2009[16])
Protocol outcome 4: Length of survival - Actual outcome for Adults (aged 18 yrs. or over): Length of survival at Until death; 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: 32, Reason: death 15 withdrawals 15 (in addition to those who did not complete baseline assessment) (as above); Group 2 Number missing: 56, Reason: death 20 withdrawals 9 - Actual outcome for Adults (aged 18 yrs. or over): N of people alive at 14.6 months; Group 1: 112/161, Group 2: 119/161; 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: 32, Reason: death 15 withdrawals 15 (in addition to those who did not complete baseline assessment) (as above); Group 2 Number missing: 56, Reason: death 20 withdrawals 9	
Protocol outcomes not reported by the study	Number of hospital visits ; Number of unscheduled admissions ; Use of community services ; Preferred and actual place of death ; Staff satisfaction ; Avoidable/inappropriate admissions to ICU ; Inappropriate attempts at cardiopulmonary resuscitation ; Patient/carer reported outcomes (satisfaction) ; Preferred and actual place of care ; Hospitalisation

Study	Bentur 2014[22]
Study type	Non-randomised comparative study
Number of studies (number of participants)	1 (n=193)
Countries and setting	Conducted in Israel; Setting: Northern district of Clalit Health Service
Line of therapy	Unclear
Duration of study	Other: January - September 2009
Method of assessment of guideline condition	Adequate method of assessment/diagnosis
Stratum	Adults (aged 18 yrs or over)
Subgroup analysis within study	Not applicable
Inclusion criteria	Participants who lived in the community and died of metastatic cancer between January and September 2009.
Exclusion criteria	Not reported
Recruitment/selection of patients	Family members contacted for approval.
Age, gender and ethnicity	Age - Mean (SD): 69.5 (13.9). Gender (M:F): 108/85. Ethnicity: 73% Jews; 27% Arabs

Further population details	1. Any specific population: Not applicable
Indirectness of population	No indirectness
Interventions	(n=40) Intervention 1: Availability of additional community services on a regular/routine basis - Additional community services on a regular/routine basis. Referral to home hospice unit (HHU) care. A 24hr service provided by a multidisciplinary palliative care team that includes physicians, nurses and social workers who visit the patients home once a week or more as needed.. Duration NA. Concurrent medication/care: Not reported. Indirectness: No indirectness Comments: Background/concomitant care not reported (n=153) Intervention 2: No additional community services available on a regular/routine basis (usual care) - Usual care. Non-home hospice care. Duration NA. Concurrent medication/care: Usual hospice care. Indirectness: No indirectness Comments: Background/concomitant care not reported. No information on no-home hospice care
Funding	Other (Funding from Guy and Nora Barron, Michigan, and The Myer-JDC-Brookdale)

RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: HOME HOSPICE CARE versus USUAL CARE

Protocol outcome 1: Hospitalisation
- Actual outcome for Adults (aged 18 yrs or over): Patients with at least one hospitalisation in the last 6 months of life. at 6 months; Group 1: 36/40, Group 2: 127/153
Risk of bias: All domain - High, Blinding - High, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ;

Protocol outcome 2: Number of visits to accident and emergency
- Actual outcome for Adults (aged 18 yrs or over): Patients with at least one ED admission in the last 6 months of life. at 6 months; Group 1: 21/40, Group 2: 80/153
Risk of bias: All domain - High, Blinding - High, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ;

Protocol outcome 3: Preferred and actual place of death
- Actual outcome for Adults (aged 18 yrs or over): Patients who died at home. at 6 months; Group 1: 22/40, Group 2: 40/153
Risk of bias: All domain - High, Blinding - High, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: Serious indirectness, Comments: Actual place of death, no reference to preference. ;

Protocol outcomes not reported by the study	Quality of life ; Number of hospital visits ; Number of unscheduled admissions ; Use of community services ; Length of survival ; Staff satisfaction ; Avoidable/inappropriate admissions to ICU ; Inappropriate attempts at cardiopulmonary

resuscitation ; Patient/carer reported outcomes (satisfaction) ; Preferred and actual place of care ; Length of stay

Study	Brian cassel 2016[30]
Study type	Non-randomised comparative study
Number of studies (number of participants)	1 (n=1443)
Countries and setting	Conducted in USA; Setting: 'Transitions' program, health system (Sharp Healthcare) in southern California
Line of therapy	Not applicable
Duration of study	Intervention + follow up: 2 years
Method of assessment of guideline condition	Adequate method of assessment/diagnosis
Stratum	Adults (aged 18 yrs or over)
Subgroup analysis within study	Not applicable
Inclusion criteria	The evaluation was limited to Transitions participants and comparison participants who had Medicare Advantage, one or more of four diseases (cancer, COPD, HF, dementia), and 2 years of usage data before death
Exclusion criteria	The sample was limited to individuals who died between 2009 and 2014. Because the study was using the first 6 months of the 24 months usage data as a basis for matching, and it was desired that the intervention not contaminate the data, 76 intervention participants who had used Transition services for >18 months before death were excluded. 49 participants who enrolled in Transitions in the final 30 days of life were also excluded because some of the outcome measures focused on this period.
Recruitment/selection of patients	Identified through primary care providers, specialists, case managers, home health, or Sharp extended care (skilled nursing program) staff using general and disease-specific criteria.
Age, gender and ethnicity	Age - Other: Mean >81 y. Gender (M:F): 608/835. Ethnicity: 1094 white
Further population details	1. Any specific population: Any specific population (A soubgroup of participants had dementia).
Indirectness of population	Serious indirectness: Last 2 years of life
Interventions	(n=495) Intervention 1: Availability of additional community services on a regular/routine basis - Additional community services on a regular/routine basis. Transitions is a concurrent care, home-based program designed for individuals with advanced chronic illness who would benefit from support provided by a trained specialty PC team comprising doctors, nurses, spiritual care prociders and social workers. The program has 4 components: 1) in-home medical consultation, 2) ongoing evidence-based prognostication of further survival, 3) caregiver support, 4) advance healthcare planning. The team provides pain and nonpain symptom management, education to promote individual and family awareness of illness trajectory and treatment choices, and psychosocial and spiritual support. The program had 2 phases: a) acute phase: a registered nurse helps the individual and the family to develop structured medical goals, and a social worker

	helps them to develop a structured list of caregiver and family goal. individuals receive 4-6 weekly home visits from the registered nurse, 1-3 home visits from social workers, and home visits from spiritual care provider if needed. 2) maintenance phase: when the identified goals have been achieved, people continue to receive home visits, although less frequently, supplemented with scheduled telephone calls for case management. . Duration 2 years. Concurrent medication/care: PC is added to traditional disease-focused care. Transition participants continue to see their primary care provider and specialist as needed. Indirectness: No indirectness (n=2749) Intervention 2: No additional community services available on a regular/routine basis (usual care) - Usual care. No access to Transitions program.. Duration 2 years. Concurrent medication/care: Controls kept on consulting generalist and specialist as needed.. Indirectness: No indirectness
Funding	Academic or government funding (National cancer institute cancer center support grant, California Healthcare Foundiation. The funders did not play any role in the content of the paper)

RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: ADDITIONAL COMMUNITY SERVICES ON A REGULAR/ROUTINE BASIS versus USUAL CARE

Protocol outcome 1: Hospitalisation
- Actual outcome for Adults (aged 18 yrs or over): Number of hospital days/month (cancer group) at 1-18 months before death; Group 1: mean 0.69 (SD 1.84); n=37, Group 2: mean 2.62 (SD 3.44); n=111
Risk of bias: All domain - Very high, Selection - High, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ; Group 1 Number missing: 368; Group 2 Number missing: 1075
- Actual outcome for Adults (aged 18 yrs or over): Number of hospital days/month (COPD group) at 1-18 months before death; Group 1: mean 0.9 (SD 1.73); n=65, Group 2: mean 1.89 (SD 2.31); n=189
Risk of bias: All domain - Very high, Selection - High, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ; Group 1 Number missing: 368; Group 2 Number missing: 1075
- Actual outcome for Adults (aged 18 yrs or over): Number of hospital days/month (HF group) at 1-18 months before death; Group 1: mean 0.72 (SD 1.58); n=174, Group 2: mean 2.17 (SD 2.76); n=499
Risk of bias: All domain - Very high, Selection - High, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ; Group 1 Number missing: 368; Group 2 Number missing: 1075
- Actual outcome for Adults (aged 18 yrs or over): Number of hospital days/month (dementia group) at 1-18 months before death; Group 1: mean 0.75 (SD 2.11); n=92, Group 2: mean 1.68 (SD 2.56); n=276
Risk of bias: All domain - Very high, Selection - High, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ; Group 1 Number missing: 368; Group 2 Number missing: 1075

Protocol outcome 2: Number of hospital visits

- Actual outcome for Adults (aged 18 yrs or over): Number of hospitalisations/month (cancer group) at 1-18 months before death; Group 1: mean 0.14 (SD 0.33); n=37, Group 2: mean 0.39 (SD 0.4); n=111
Risk of bias: All domain - Very high, Selection - High, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ; Group 1 Number missing: 368; Group 2 Number missing: 1075
- Actual outcome for Adults (aged 18 yrs or over): Number of hospitalisations/month (COPD group) at 1-18 months before death; Group 1: mean 0.15 (SD 0.3); n=65, Group 2: mean 0.35 (SD 0.38); n=189
Risk of bias: All domain - Very high, Selection - High, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ; Group 1 Number missing: 368; Group 2 Number missing: 1075
- Actual outcome for Adults (aged 18 yrs or over): Number of hospitalisations/month (HF group) at 1-18 months before death; Group 1: mean 0.11 (SD 0.27); n=97, Group 2: mean 0.34 (SD 0.35); n=499
Risk of bias: All domain - Very high, Selection - High, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ; Group 1 Number missing: 368; Group 2 Number missing: 1075
- Actual outcome for Adults (aged 18 yrs or over): Number of hospitalisations/month (dementia group) at 1-18 months before death; Group 1: mean 0.11 (SD 0.27); n=92, Group 2: mean 0.27 (SD 0.32); n=276
Risk of bias: All domain - Very high, Selection - High, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ; Group 1 Number missing: 368; Group 2 Number missing: 1075

Protocol outcome 3: Number of unscheduled admissions
- Actual outcome for Adults (aged 18 yrs or over): N of people admitted within 30 days of death (overall) at 30 d before death; Group 1: 77/368, Group 2: 760/1075
Risk of bias: All domain - Very high, Selection - High, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: Serious indirectness, Comments: No details on unscheduled; Group 1 Number missing: 368; Group 2 Number missing: 1075

Protocol outcome 4: Preferred and actual place of death
- Actual outcome for Adults (aged 18 yrs or over): N of people dying in hospital (overall) at NA; Group 1: 31/368, Group 2: 615/1075
Risk of bias: All domain - Very high, Selection - High, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: Serious indirectness, Comments: No details on preferred place; Group 1 Number missing: 368; Group 2 Number missing: 1075

Protocol outcome 5: Length of survival
- Actual outcome for Adults (aged 18 yrs or over): Days to death at 1-18 months before death; Mean; (Intervention group (n=368): mean 201.2; control group (n=1075): mean 200.7));
Risk of bias: All domain - Very high, Selection - High, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ; Group 1 Number missing: 368; Group 2 Number missing: 1075

Protocol outcome 6: Avoidable/inappropriate admissions to ICU
- Actual outcome for Adults (aged 18 yrs or over): N of people in ICU during admission at 30 d before death; Group 1: 43/368, Group 2: 535/1075
Risk of bias: All domain - Very high, Selection - High, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low;

Indirectness of outcome: Serious indirectness, Comments: No details on avoidable/inappropriate; Group 1 Number missing: 368; Group 2 Number missing: 1075	
Protocol outcomes not reported by the study	Quality of life ; Number of visits to accident and emergency ; Use of community services ; Staff satisfaction ; Inappropriate attempts at cardiopulmonary resuscitation ; Patient/carer reported outcomes (satisfaction) ; Preferred and actual place of care ; Length of stay

Study	Brumley 2003[33]
Study type	RCT (Patient randomised; Parallel)
Number of studies (number of participants)	1 (n=297)
Countries and setting	Conducted in USA; Setting: Southern California TriCentral Service Hospice
Line of therapy	Not applicable
Duration of study	Intervention + follow up: 2 years (September 2002-March 2004)
Method of assessment of guideline condition	Adequate method of assessment/diagnosis: Physicians are asked to refer any patient to the TCPC Program if the physician 'would not be surprised if this patient died in the next year'
Stratum	Adults (aged 18 yrs or over)
Subgroup analysis within study	Not applicable
Inclusion criteria	Kaiser permanente (KP) hospice homebound patients who had a diagnosis of a life threatening disease, primarily Chronic obstructive pulmonary disease (COPD), Chronic heart failure (CHF), or cancer; two or more energency department visits or hospital admissions in the past year, and limited life expectancy (not more than approximately one year to live)
Exclusion criteria	NA
Recruitment/selection of patients	Referrals originate from many sources, including physicians, discharge planners, home health nurses, and social workers
Age, gender and ethnicity	Age - Other: not stated. Gender (M:F): Not stated. Ethnicity: 18% Asian/Pacific Islanders, 13% Hawaiian, 4% Latino, 2% other
Further population details	1. Any specific population: Not applicable
Indirectness of population	No indirectness
Interventions	(n=210) Intervention 1: Availability of additional community services on a regular/routine basis - Additional community services on a regular/routine basis. The TriCentral Palliative Care (TCPC) program is an interdisciplinary home-based program for patients at the end of life. The program offers enhanced pain control, symptom management and psychosocial support to improve quality of life. By blending palliative care and curative measures, the TCP program provides gradual transition for patients allowing them to retain their primary physician while receiving home visits from the palliative care team and physician. The program uses an interdisciplinary approach that focuses on the patient and family and in which care is provided by a core team consisting of a physician, nurse and social worker with expertise in pain control, other symptom management and psychosocial intervention. Patients are assigned a palliative care physician who coordinates care from a variety of health care practicioners (including the patients' primary care

	physician), thus preventing service fragmentation. Home visits are provided by all team members (including physicians) to provide medical care, support and education as needed by patients and their caregivers. Ongoing care management to fill gaps in care is provided to ensure that the patinets' medical, social and spiritual needs are being met. Telephone support and afterhours visits are available 24/7, as needed by the patient. ACP that empowers patients and their family to make informed decisions and choices of care about EOLC is provided.. Duration 1.5 years. Concurrent medication/care: Usual primary care. Indirectness: No indirectness (n=348) Intervention 2: No additional community services available on a regular/routine basis (usual care) - Usual care. Kaiser Permanente hospice patients who did not receive the TCPC program. Duration 1.5 years. Concurrent medication/care: NA. Indirectness: No indirectness
Funding	Other (The study was funded by the Kaiser Permanente Garfield Memorial Fund)

RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: ADDITIONAL COMMUNITY SERVICES ON A REGULAR/ROUTINE BASIS versus USUAL CARE

Protocol outcome 1: Number of hospital visits
- Actual outcome for Adults (aged 18 yrs or over): Hospital visits at end of follow-up; Group 1: mean 2.359 (SD 10.96); n=161, Group 2: mean 9.352 (SD 10.82); n=139
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: 51, Reason: did not die; Group 2 Number missing: 209, Reason: did not die

Protocol outcome 2: Number of visits to accident and emergency
- Actual outcome for Adults (aged 18 yrs or over): Emergency department visits at end of follow-up; Group 1: mean 0.93 (SD 2.51); n=161, Group 2: mean 2.297 (SD 0.92); n=139
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: 51, Reason: did not die; Group 2 Number missing: 209, Reason: did not die

Protocol outcome 3: Use of community services
- Actual outcome for Adults (aged 18 yrs or over): Physician visits at end of follow-up; Group 1: mean 5.335 (SD 13.97); n=161, Group 2: mean 11.089 (SD 13.81); n=139
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: 51, Reason: did not die; Group 2 Number missing: 209, Reason: did not die
- Actual outcome for Adults (aged 18 yrs or over): Skilled nursing care visits at end of follow-up; Group 1: mean 0.851 (SD 11); n=161, Group 2: mean 4.575 (SD 10.87); n=139
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: 51, Reason: did not die; Group 2 Number missing: 209, Reason: did not die
- Actual outcome for Adults (aged 18 yrs or over): Total home health visits at end of follow-up; Group 1: mean 35.048 (SD 31.83); n=161, Group 2: mean 13.247 (SD

31.44); n=139 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: 51, Reason: did not die; Group 2 Number missing: 209, Reason: did not die Protocol outcome 4: Preferred and actual place of death - Actual outcome for Adults (aged 18 yrs or over): People dying at home at end of follow-up; Group 1: 138/159, Group 2: 79/139 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: Serious indirectness, Comments: Preferred place of death not reported; Group 1 Number missing: 51, Reason: did not die; Group 2 Number missing: 209, Reason: did not die	
Protocol outcomes not reported by the study	Quality of life ; Hospitalisation ; Number of unscheduled admissions ; Length of survival ; Staff satisfaction ; Avoidable/inappropriate admissions to ICU ; Inappropriate attempts at cardiopulmonary resuscitation ; Patient/carer reported outcomes (satisfaction) ; Preferred and actual place of care ; Length of stay

Study	Brumley 2007[32]
Study type	RCT (Patient randomised; Parallel)
Number of studies (number of participants)	1 (n=297)
Countries and setting	Conducted in USA; Setting: Two group-model, closed-panel, non-profit health maintenance organisations (HMOs) providing integrated healthcare services in Hawaii and Colorado. Colorado site (Denver): > 500 physicians (all medical specialties) in 16 separate ambulatory medical offices spread across a great metropolitan area; HMO contracts with outside providers for ED, hospital home health and hospice care. Hawaii site (Oahu): 18 medical offices, 317 medical group physicians; HMO provides all outpatient and most inpatient care (217-bed medical center, internal home health agency); outside provider referral for hospice care.
Line of therapy	Not applicable
Duration of study	Intervention + follow up: 2 years (September 2002-March 2004)
Method of assessment of guideline condition	Adequate method of assessment/diagnosis: To determine life expectancy, the primary care physician care was asked, 'would you be surprised if this patient died in the next year?'. Patients with physician responses indicating no surprise if the patient died within the next year were included in the study
Stratum	Adults (aged 18 yrs or over)
Subgroup analysis within study	Stratified then randomised
Inclusion criteria	Patients eligible to participate in the study must have a primary diagnosis of chronic heart failure, chronic obstructive pulmonary disease or cancer and a life expectancy of 12 months or less, have visited the emergency department or hospital at least once within the previous year, and scored 70% or less on the Palliative Performance Scale (modified Karnofski scale ranking health condition from 0, death to 100, normal used to assess severity of illness).
Exclusion criteria	Not stated
Recruitment/selection of patients	Participants were enrolled and followed from Spetember 2002 to August 2004. DIscharge planners, primary care physicians, and other specialty physicians referred potentially eligible terminally ill patients to the study.
Age, gender and ethnicity	Age - Mean (SD): Intervention group 73.9 (11.1), control group 73.7 (13). Gender (M:F): Intervention group 80/65; control group 71/81. Ethnicity: 18% Asian/Pacific Islanders, 13% Hawaiian, 4% Latino, 2% other
Further population details	1. Any specific population: Not applicable
Extra comments	Primary diagnosis in intervention (n=145) and control group (n=152), respectively: cancer 64, 74; CHF 45, 52; COPD 36, 26. Baseline characteristics (mean (SD)) in intervention (n=145) and control group (n=152), respectively: Palliative performance scale score 57.8 (13.1), 58.5 (12.0); satisfaction 40.8(5.2), 39.3 (6.2)
Indirectness of population	No indirectness

Interventions	(n=155) Intervention 1: Availability of additional community services on a regular/routine basis - Additional community services on a regular/routine basis. The IHPC program is an interdisciplinary home-based program designed to provide treatment with the primary intent of enhancing comfort, managing symptoms and improving quality of life. The program uses an interdisciplinary team approach: core care team consists of patient and family, physician, nurse and a social worker with expertise in symptom management and biopsychosocial intervention; responsible for coordinating and managing care across all settings and providing assessment, evaluation, planning, care delivery, follow up, monitoring and continuous reassessment of care. Upon admission, the team assesses the physical, medical, psychological, social and spiritual needs of the patient and family. All patients received initial assessments from physicians, nurses and social workers. Additional team members, including spiritual counselor, or chaplain, bereavement, coordinator, home health aide, pharmacist, dietitian, volunteer, physical therapist, occupational therapist, and speech therapist, join the core care team in service provision as needed. The team convenes to develop a care plan in accordance with the wishes of the patient and the family. Frequency of medical visits is based on individual needs of the patients. Physicians conduct home visits and are available along with nursing services on a 24-hrs on-call basis. In addition, advanced care planning is provided that involves patients and their families in making informed decisions and choices about care goals and EOLC. The team provides education, support and medical care to the patients and families. Additionally, patients and families are trained in the use of medications, self management of skills and crisis intervention in the home with the goal of stabilising the patient and minimising excessive ED visits and acute care admissions.. Duration 2 years. Concurrent medication/care: Customary and standard care within individual health benefit limits in addition to IHPC program. Indirectness: No indirectness (n=155) Intervention 2: No additional community services available on a regular/routine basis (usual care) - Usual care. Standard care to meet the needs of the patients and followed Medicare guidelines for home healthcare criteria. These services included various amounts and levels of home health services, acute care services, primary care services and hospice care. Patients were treated for conditions and symptoms when they presented them to the attending physicians. Additionally, they received ongoing home care when they met the Medicare-certified criteria for an acute condition.. Duration 2 years. Concurrent medication/care: Not stated . Indirectness: No indirectness
Funding	Other (The study was funded by the Kaiser Permanente Garfield Memorial Fund)

RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: ADDITIONAL COMMUNITY SERVICES ON A REGULAR/ROUTINE BASIS versus USUAL CARE

Protocol outcome 1: Hospitalisation
- Actual outcome for Adults (aged 18 yrs or over): People hospitalised at end of follow-up; Group 1: 52/145, Group 2: 94/152
Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness; Baseline details: No significant differences between groups in baseline measures other than satisfaction (those randomised to

intervention demonstrated significantly higher satisfaction with services at baseline than those assigned to usual care);

Protocol outcome 2: Number of visits to accident and emergency
- Actual outcome for Adults (aged 18 yrs or over): People accessing emergency department at end of follow-up; Group 1: 29/145, Group 2: 50/152
Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: Serious indirectness, Comments: People accessing service, not n of visits; Baseline details: No significant differences between groups in baseline measures other than satisfaction (those randomised to intervention demonstrated significantly higher satisfaction with services at baseline than those assigned to usual care);

Protocol outcome 3: Use of community services
- Actual outcome for Adults (aged 18 yrs or over): People enrolled in hospice at end of follow-up; Group 1: 36/145, Group 2: 55/152
Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ; Baseline details: No significant differences between groups in baseline measures other than satisfaction (those randomised to intervention demonstrated significantly higher satisfaction with services at baseline than those assigned to usual care);

Protocol outcome 4: Preferred and actual place of death
- Actual outcome for Adults (aged 18 yrs or over): People dying at home at end of follow-up; Mean; (OR 2.2 (1.3-3.7). 75% (n=223) of people included in the final analysis died during the study period; for 98% (n=219) of these site of death data was available. Intervention group: 71% died at home; control group: 51% died at home. OR data: controlling for age, survival time and medical condition. N for each group not reported.));
Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: Serious indirectness, Comments: Preferred place of death not reported; Baseline details: No significant differences between groups in baseline measures other than satisfaction (those randomised to intervention demonstrated significantly higher satisfaction with services at baseline than those assigned to usual care);

Protocol outcome 5: Length of survival
- Actual outcome for Adults (aged 18 yrs or over): Survival after enrollment at end of follow-up; Group 1: mean 196 (SD 164); n=145, Group 2: mean 242 (SD 200); n=152
Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ; Baseline details: No significant differences between groups in baseline measures other than satisfaction (those randomised to intervention demonstrated significantly higher satisfaction with services at baseline than those assigned to usual care);

Protocol outcome 6: Patient/carer reported outcomes (satisfaction)
- Actual outcome for Adults (aged 18 yrs or over): Satisfaction with care at 90 days; OR; (OR 3.37 (0.65-4.96). N for groups not reported (only total N=149)));
Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness; Baseline details: No significant differences between groups in baseline measures other than satisfaction (those randomised to intervention demonstrated significantly higher satisfaction with services at baseline than those assigned to usual care);

	Quality of life ; Number of hospital visits ; Number of unscheduled admissions ; Staff satisfaction ; Avoidable/inappropriate admissions to ICU ; Inappropriate attempts at cardiopulmonary resuscitation ; Preferred and actual place of care ; Length of stay
Protocol outcomes not reported by the study	

Study	Chitnis 2013[46]
Study type	Non-randomised comparative study
Number of studies (number of participants)	1 (n=59076)
Countries and setting	Conducted in United Kingdom; Setting: The Marie Curie Nursing Service (MCNS), part of the Marie Curie Cancer Care charity, provides end-of-life nursing care and support to people in their own home. The service provides care to around 28 000 people annually
Line of therapy	Not applicable
Duration of study	Intervention + follow up: People who received care between 2009-2011
Method of assessment of guideline condition	Adequate method of assessment/diagnosis: median time from first MCNS visit was 7 days, range 0-365 days
Stratum	Adults (aged 18 yrs or over)
Subgroup analysis within study	Not applicable
Inclusion criteria	The intervention group consisted of people who received MCNS care in England between January 2009 and November 2011, and who died in the same period. Controls were selected based on the same inclusion and exclusion criteria as the intervention group, but also could not have received MCNS care. controls must have died within 90 days of the case, be the same sex, and be matched on recent history of cancer (i.e. a case with cancer recorded in the prior three years could only be matched to a control that also had a recent history of cancer).
Exclusion criteria	Patients aged 18 or less, those who died in a care home and those who had not been admitted to hospital at some point between 2000 and death. By definition MCNS patients could not be in hospital on the day that they first received Marie Curie care: therefore, a constraint was included to ensure that a control could only be selected if they were not in the middle of a hospital spell on the index date
Recruitment/selection of patients	Inpatient, outpatient and emergency department data was sourced from the Hospital Episode Statistics (HES), covering all NHS-funded care provided in hospitals in England. We obtained date and place of death from the HES-linked mortality file that holds data extracted from death certificates by the Office for National Statistics. The NHS Information Centre for health and social care (IC) acted as a trusted third party, and linked a dataset of all those who received MCNS care between January 2009 and November 2011 to HES datasets.
Age, gender and ethnicity	Age - Mean (SD): intervention group 74.8(12.1); control group 74.7(11.4). Gender (M:F): 31310/27766. Ethnicity: intervention group: 89.2% white, control group: 91.2% white
Further population details	1. Any specific population: Not applicable

Extra comments	For each MCNS patient the first visit date was taken as the study index date. For each possible control selected in the first stage, the index date was defined as the same point relative to death as for the intervention patient, i.e. if the intervention patient had their first visit nine days before death then the index date for the controls was nine days before their death
Indirectness of population	No indirectness
Interventions	(n=29538) Intervention 1: Availability of additional community services on a regular/routine basis - Additional community services on a regular/routine basis. The MCNS is funded by NHS commissioners and donations and provides hands-on nursing care and emotional support for people in their own homes, day and night at the end of life. It aims to provide care that makes it possible for people to spend their last days of life at home rather than in hospital. Although originally it focused on caring for people with cancer, it is now available to people with other conditions. The service is provided by registered nurses and healthcare assistants, and people are referred to the service by community nursing services. The MCNS offers various models of care; however, the vast majority of people in this study were receiving the standard package of care consisting of a 9-h day or overnight shift of care.. Duration unclear. Concurrent medication/care: not stated. Indirectness: No indirectness (n=29538) Intervention 2: No additional community services available on a regular/routine basis (usual care) - Usual care. MCNS not availble. Duration unclear. Concurrent medication/care: not stated. Indirectness: No indirectness
Funding	Academic or government funding (The study was funded by Marie Curie Cancer Care. The study design was agreed between the Nuffield trust and Marie Curie Cancer care. Full controil of the analysis, interpretation of the results and publication rights were retained by the Nuffield trust. Marie Curie Cancer Care were not involved in the preparation of this manuscript nor in the decision to submit for publication)

RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: ADDITIONAL COMMUNITY SERVICES ON A REGULAR/ROUTINE BASIS versus USUAL CARE

Protocol outcome 1: Number of hospital visits
- Actual outcome for Adults (aged 18 yrs or over): N of people who attended outpatient at between first MCNS visit and death; Group 1: 2481/29538, Group 2: 5524/29538; 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 outcome 2: Number of visits to accident and emergency
- Actual outcome for Adults (aged 18 yrs or over): N of people who attended A&E at between first MCNS visit and death; Group 1: 2334/29538, Group 2: 8447/29538; 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 outcome 3: Number of unscheduled admissions - Actual outcome for Adults (aged 18 yrs or over): N of people with emergency admissions at between first MCNS visit and death; Group 1: 3249/29538, Group 2: 10338/29538; 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 outcome 4: Preferred and actual place of death - Actual outcome for Adults (aged 18 yrs or over): N of people dying on hospital at NA; Group 1: 2363/29538, Group 2: 12111/29538; 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: Serious indirectness, Comments: no details on preference; - Actual outcome for Adults (aged 18 yrs or over): N of people dying at home at NA; Group 1: 22744/29538, Group 2: 10338/29538; 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: Serious indirectness, Comments: no details on preference;	
Protocol outcomes not reported by the study	Quality of life ; Hospitalisation ; Use of community services ; Length of survival ; Staff satisfaction ; Avoidable/inappropriate admissions to ICU ; Inappropriate attempts at cardiopulmonary resuscitation ; Patient/carer reported outcomes (satisfaction) ; Preferred and actual place of care ; Length of stay

Study	Costantini 2003[54]
Study type	Non-randomised comparative study
Number of studies (number of participants)	1 (n=567)
Countries and setting	Conducted in Italy; Setting: The PHCT is a nonprofit association available in the town of Genoa since 1984 (G Ghirotti Association for the Research and Treatment of Pain and for Palliative Care). The service is free and at the time of the study had 12 physicians, seven registered nurses, three psychologists and 25 volunteers.
Line of therapy	Not applicable
Duration of study	Intervention + follow up: 180 days
Method of assessment of guideline condition	Adequate method of assessment/diagnosis: last 180 days before death
Stratum	Adults (aged 18 yrs or over)
Subgroup analysis within study	Not applicable
Inclusion criteria	Referral criteria to the PHCT included a diagnosis of advanced terminal cancer requiring palliative care, age 1-18 years, and family and patient consent to be followed at home by the PHCT. The control group Patients not followed by the PHCT received usual care from hospitals, their general practitioners and other health services. No other teams with specific expertise in palliative care existed at the time of the study in Genoa.
Exclusion criteria	People who lived permamently in institutions other than hospital (for example, homes of relderly and psychiatric hospital)
Recruitment/selection of patients	Referrals are accepted from both professionals, in hospitals and the community, and informal carers in the whole area of the municipality. Cases were identified by cross matching the Liguria Mortality register for people who died of cancer in 1991 files with the clinical records of the PHCT. We included all cancer patients who received PHCT at home for at least one day, irrespective of whether they were followed until death.
Age, gender and ethnicity	Age - Mean (range): intervention 70 (39-96) control 72 (42-103). Gender (M:F): Define. Ethnicity:
Further population details	1. Any specific population: Not applicable
Extra comments	.
Indirectness of population	No indirectness
Interventions	(n=189) Intervention 1: Availability of additional community services on a regular/routine basis - Additional community

	services on a regular/routine basis. Palliative home care teams (PHCT). 12 physicians, seven registered nurses, three psychologists and 25 volunteers. Duration 180 days. Concurrent medication/care: Not stated. Indirectness: No indirectness (n=378) Intervention 2: No additional community services available on a regular/routine basis (usual care) - Usual care. Usual care no access to PHCT. Duration 180 days. Concurrent medication/care: NOt stated . Indirectness: No indirectness
Funding	Academic or government funding (International Union Against Cancer (UICC) who awarded IJH an International Cancer Fellowship, which allowed the collaboration of Higginson and Costantini.)
RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: ADDITIONAL COMMUNITY SERVICES ON A REGULAR/ROUTINE BASIS (PHCT) versus USUAL CARE Protocol outcome 1: Length of stay - Actual outcome for Adults (aged 18 yrs or over): Days in hospital at 180 days before death; Mean; (Median (95%CI) for intervention group and control group, respectively: 19.0 (15-23), 30.3 (26-34))); 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 ; Baseline details: There were no differences in age, marital status or gender, all important confounding variables in hospitalization. A lower educational level (or associated lower social class, or deprivation) was found in the PHC group;	
Protocol outcomes not reported by the study	Quality of life ; Number of hospital visits ; Number of visits to accident and emergency ; Number of unscheduled admissions ; Use of community services ; Preferred and actual place of death ; Length of survival ; Staff satisfaction ; Avoidable/inappropriate admissions to ICU ; Inappropriate attempts at cardiopulmonary resuscitation ; Patient/carer reported outcomes (satisfaction) ; Preferred and actual place of care ; Hospitalisation

Study	Gray 1987[94]
Study type	Non-randomised comparative study
Number of studies (number of participants)	1 (n=196)
Countries and setting	Conducted in Australia; Setting: Patients home, nursing home, hospital (unspecified)
Line of therapy	Adjunctive to current care
Duration of study	--: Diagnosis after 1981, death in 1983
Method of assessment of guideline condition	Adequate method of assessment/diagnosis
Stratum	Adults (aged 18 yrs or over)
Subgroup analysis within study	Not applicable
Inclusion criteria	Patients of Hospital Palliative Care Service (HPCS) who were listed on the Cancer Registry of the Health Department of Western Australia as dying of cancer in 1983. Control group were listed on the Cancer Registry of the Health Department of Western Australia as dying of cancer in 1983 and were matched on 3 digits of the respective ICD-9 codes.
Exclusion criteria	Not reported.
Recruitment/selection of patients	Patients on the Cancer Registry of the Health Department of Western Australia. Hospital Palliative Care Service (HPCS) and matched patients dying without the home hospice care.
Age, gender and ethnicity	Age - Mean (SD): 63.3 (14.9). Gender (M:F): 63/35. Ethnicity:
Further population details	1. Any specific population: Not stated / Unclear
Extra comments	.
Indirectness of population	No indirectness
Interventions	(n=98) Intervention 1: Availability of additional community services on a regular/routine basis - Additional community services on a regular/routine basis. Hospital Palliative Care Service (HPCS) provides care for patients dying in their home and support for family or friends. Medical care can be provided by the patients own GP, the HPCS GP, or a combination of both. The nursing staff work on a day, evening, night shift system. The HPCS liason sister coordinates the work of all who care for the patient, liases with the doctors, organises volunteers when needed, and has a responsibility to the family members during the final stages of illness. Both doctors and nurses can be contacted at all times through a pager by those in the patients home. . Duration Up to 2 years. Concurrent medication/care: Not stated (n=98) Intervention 2: No additional community services available on a regular/routine basis (usual care) - Usual care.

	Control group received usual care (no HPCS). No more information. Duration Up to 2 years. Concurrent medication/care: Not reported. Indirectness: No indirectness
Funding	Other (Cancer Foundation of Western Australia Inc.)
RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: ADDITIONAL COMMUNITY SERVICES ON A REGULAR/ROUTINE BASIS versus USUAL CARE Protocol outcome 1: Length of stay - Actual outcome: Mean number of institutional days in last 90 days of life at Up to 2 years; MD; -9.6 (p: 0.005), Comments: HPCS: 19.9, Control: 28.4); Risk of bias: All domain - High, Selection - Very high, Blinding - High, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ; Protocol outcome 2: Preferred and actual place of death - Actual outcome: % of patients dying at home at Up to 2 years; Group 1: 59/98, Group 2: 16/98 Risk of bias: All domain - High, Selection - Very high, Blinding - High, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: Serious indirectness, Comments: Place of death is reported but not whether this was the preferred place of death; Protocol outcome 3: Length of survival - Actual outcome: Survival time at Up to 2 years; Mean; (HPCS: 292 Usual care: 194) days, Comments: Variance not reported); Risk of bias: All domain - High, Selection - Very 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 ; Number of hospital visits ; Number of visits to accident and emergency ; Number of unscheduled admissions ; Use of community services ; Staff satisfaction ; Avoidable/inappropriate admissions to ICU ; Inappropriate attempts at cardiopulmonary resuscitation ; Patient/carer reported outcomes (satisfaction) ; Preferred and actual place of care ; Hospitalisation

Study (subsidiary papers)	Hughes 2000[106] (Hughes 1992[104])
Study type	Non-randomised comparative study
Number of studies (number of participants)	1 (n=171)
Countries and setting	Conducted in USA; Setting: Patients who were hospitalised but discharged home
Line of therapy	Not applicable
Duration of study	Intervention + follow up: Oct 1994 - Sept 1998
Method of assessment of guideline condition	Adequate method of assessment/diagnosis
Stratum	Adults (aged 18 yrs or over)
Subgroup analysis within study	Not applicable
Inclusion criteria	People who lived within the 25 to 35 mile catchment areas served by the programme. Presence of an available caregiver
Exclusion criteria	Not reported
Age, gender and ethnicity	Age - Mean (SD): . Gender (M:F): HBHC white 93% control 85%. Ethnicity: White HSBC93% Control 85%
Further population details	1. Any specific population: Not applicable
Extra comments	Hospitalised patients with a terminal diagnoses.
Indirectness of population	No indirectness
Interventions	(n=86) Intervention 1: Availability of additional community services on a regular/routine basis - Additional community services on a regular/routine basis. The program encompasses an interdisciplinary team that is led by a physician and includes nurses, a social worker, a physical therapist, a dietician and health technicians. The program rientated, interdisciplinary patient care plans at team meetings and schedules visits according to patient need. The HSBC physician also manages the HSBC patients both in and out of hospital. The model emphasises the provision of comprehensive services based on need, the importance of timely communication about patients across team members and the instruction and involvement of infromal caregivers to the maximum possible extent. Model compliance: target care to high-risk patients 93.8%, designate primary care manager within team 93.8%, provide 24-hr contact for patients 68.8%, prior approval of scheduled hospital readmission 68.8%, transfer stable readmitted patients to step-down beds 75%, involve HBPC team in readmission discharge 56.2%. Duration 6 months. Concurrent medication/care: Not stated (n=85) Intervention 2: Availability of additional community services on a regular/routine basis - Additional community services on a regular/routine basis. Service deliver by skilled nursing team. No other details provided. Duration 6

	months. Concurrent medication/care: Not stated . Indirectness: No indirectness
Funding	Funding not stated

RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: ADDITIONAL COMMUNITY SERVICES ON A REGULAR/ROUTINE BASIS versus ADDITIONAL COMMUNITY SERVICES ON A REGULAR/ROUTINE BASIS

Protocol outcome 1: Length of stay
- Actual outcome for Adults (aged 18 yrs or over): VA services - intensive care hospital days at NA; Group 1: mean 0.13 (SD 0.86); n=86, Group 2: mean 0.45 (SD 3.8); n=85
Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: Serious indirectness ; Baseline details: Malignant neoplasms HBHC 73% control 80%;
- Actual outcome for Adults (aged 18 yrs or over): VA services - rehabilitation days at NA; Group 1: mean 0 (SD 0); n=86, Group 2: mean 0.14 (SD 1.3); n=85
Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: Serious indirectness ; Baseline details: Malignant neoplasms HBHC 73% control 80%;
- Actual outcome for Adults (aged 18 yrs or over): VA services - intermediate bed days at NA; Group 1: mean 4 (SD 8); n=86, Group 2: mean 2.52 (SD 7.9); n=85
Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: Serious indirectness ; Baseline details: Malignant neoplasms HBHC 73% control 80%;
- Actual outcome for Adults (aged 18 yrs or over): VA services - general bed days at NA; Group 1: mean 5.63 (SD 10); n=86, Group 2: mean 12.06 (SD 15.2); n=85
Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: Serious indirectness ; Baseline details: Malignant neoplasms HBHC 73% control 80%;
- Actual outcome for Adults (aged 18 yrs or over): VA services - total days at NA; Group 1: mean 9.94 (SD 13.3); n=86, Group 2: mean 15.86 (SD 20.1); n=85
Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: Serious indirectness ; Baseline details: Malignant neoplasms HBHC 73% control 80%;
- Actual outcome for Adults (aged 18 yrs or over): VA services - emergency room visits at NA; Group 1: mean 0.57 (SD 0.8); n=86, Group 2: mean 0.72 (SD 0.9); n=85
Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: Serious indirectness ; Baseline details: Malignant neoplasms HBHC 73% control 80%;
- Actual outcome for Adults (aged 18 yrs or over): VA services - extended care days at NA; Group 1: mean 0.38 (SD 3.6); n=86, Group 2: mean 0 (SD 0); n=85
Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: Serious indirectness ; Baseline details: Malignant neoplasms HBHC 73% control 80%;
- Actual outcome for Adults (aged 18 yrs or over): VA services - outpatient clinic visits at NA; Group 1: mean 0.73 (SD 1.9); n=86, Group 2: mean 2.59 (SD 6.1); n=85
Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: Serious indirectness ; Baseline details: Malignant neoplasms HBHC 73% control 80%;

Protocol outcome 2: Length of survival

- Actual outcome for Adults (aged 18 yrs or over): Mortality at 6 months; Group 1: 68/86, Group 2: 66/85 Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: Serious indirectness ; Baseline details: Malignant neoplasms HBHC 73% control 80%; - Actual outcome for Adults (aged 18 yrs or over): Length of survival at NA; Group 1: mean 76.2 (SD 67.1); n=86, Group 2: mean 83.1 (SD 68.1); n=85 Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: Serious indirectness ; Baseline details: Malignant neoplasms HBHC 73% control 80%; - Actual outcome for Adults (aged 18 yrs or over): Length of survival - people who died at NA; Group 1: mean 48 (SD 43.3); n=68, Group 2: mean 54.5 (SD 47.7); n=66 Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: Serious indirectness ; Baseline details: Malignant neoplasms HBHC 73% control 80%;	
Protocol outcomes not reported by the study	Quality of life ; Number of hospital visits ; Number of visits to accident and emergency ; Number of unscheduled admissions ; Use of community services ; Preferred and actual place of death ; Staff satisfaction ; Avoidable/inappropriate admissions to ICU ; Inappropriate attempts at cardiopulmonary resuscitation ; Patient/carer reported outcomes (satisfaction) ; Preferred and actual place of care ; Hospitalisation

Study	**Kim 2009[120]**
Study type	NRS
Number of studies (number of participants)	1 (n=76)
Countries and setting	Conducted in America
Line of therapy	Unclear
Duration of study	Intervention + follow up: 36 months (18 months pre/18 months post)
Method of assessment of guideline condition	Adequate method of assessment/diagnosis
Stratum	Adults (aged 18 years or over)
Subgroup analysis within study	Not applicable
Inclusion criteria	18 years of age or over, a diagnosis of being in a terminal stage of cancer with a predicted life expectancy of less than 6 months, and having no difficulty with communication.
Exclusion criteria	Not reported
Recruitment/selection of patients	Terminally ill patients identified through the cancer database were approached.
Age, gender and ethnicity	Age - Mean (SD): 65 years (SD 10.67) in the palliative care group and 67 years (SD 10.59) in the nonpalliative care group. Gender (M:F): 43/32.

Further population details	NA
Extra comments	.
Indirectness of population	No indirectness
Interventions	Additional community services on a regular/routine basis. The home-based palliative care team. Those who have less than 6 months life expectancy are approached by the palliative care team established by the community health centre and asked if they would like to receive palliative care from the centre. For those who requested palliative care, the team, consisting of two nurses and one physician on an 8-hour-per-day basis and 82 trained volunteers, provided management of symptoms and psychological and spiritual counselling via home visits. N=30 No additional community services available on a regular/routine basis (usual care). Usual care. Those who refused the offer of the home palliative care service from the community health centre Home-bound, terminally ill cancer patients in the cancer database who had less than 6 months of life expectancy. N=46
Funding	Funding not reported

RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: ADDITIONAL COMMUNITY SERVICES IN ACUTE/EMERGENCY SCENARIO (PEACH) versus USUAL CARE

Protocol outcome 1: Quality of life of person in last year of life
- Actual outcome for Adults (aged 18 years or over): QoL: Physical symptoms (mean); Group 1: 3.89 (1), Group 2: 3.37 (0.92) Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness;
- Actual outcome for Adults (aged 18 years or over): QoL: Social relationships (mean); Group 1: 3.72 (0.64), Group 2: 3.52 (0.89) Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness;
- Actual outcome for Adults (aged 18 years or over): QoL: Preparation (mean); Group 1: 2.37 (0.82), Group 2: 2.49 (0.0.82) Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness;
- Actual outcome for Adults (aged 18 years or over): QoL: Control (mean); Group 1: 3.74 (0.54), Group 2: 3.73 (0.54) Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness;
- Actual outcome for Adults (aged 18 years or over): QoL: Completion (mean); Group 1: 3.48 (0.64), Group 2: 3.31 (0.77) Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness;

Protocol outcome 2: Length of stay
- Actual outcome for Adults (aged 18 years or over): Admission days in past 6 months (mean); Group 1: 21.31 (50.14), Group 2: 17.89 (49.99) Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness;

Hospitalisation ; Number of visits to accident and emergency ; Number of unscheduled admissions ; Use of community services ; Length of survival ; Staff satisfaction ; Avoidable/inappropriate admissions to ICU ; Inappropriate attempts at cardiopulmonary resuscitation ; Patient/carer reported outcomes (satisfaction) ; Preferred and actual place of care	
Protocol outcomes not reported by the study	

Study	Leppert 2012[131]
Study type	Non-randomised comparative study
Number of studies (number of participants)	1 (n=78)
Countries and setting	Conducted in Poland; Setting: PCU of the Chair and Department of Palliative Medicine of Poznan University of Medical Science, or patients homes.
Line of therapy	Unclear
Duration of study	Not clear:
Method of assessment of guideline condition	Adequate method of assessment/diagnosis
Stratum	Adults (aged 18 yrs or over)
Subgroup analysis within study	Not applicable
Inclusion criteria	Diagnosed with advanced lung cancer (either stage IV nonsmall cell lung cancer or extensive disease small cell lung cancer) who were treated at home or at a palliative care unit (PCU). Able to fill in questionnaire and communicate with nurses.
Exclusion criteria	Diagnosed with lung cancer at earlier stages, without histological diagnosis of lung cancer, patients currently treated with surgery, radiotherapy, or chemotherapy, patients with brain metastates, patients with cognitive impairment.
Recruitment/selection of patients	Consecutive patients
Age, gender and ethnicity	Age - Mean (SD): PCU 65.96 (8.02) Home care 67.66 (10.66). Gender (M:F): 29/21. Ethnicity:
Further population details	1. Any specific population: Systematic review: mixed
Indirectness of population	Serious indirectness: No life expectancy prognosis - advanced cancer
Interventions	(n=25) Intervention 1: Availability of additional community services on a regular/routine basis - Additional community services on a regular/routine basis. Patients under the home palliative care program were followed up by a nurse twice a week and by a physician every 2 weeks. Access to other members of the multidisciplinary team, such as physiotherapists, psychologists, social workers, chaplains and volunteers. . Duration NA. Concurrent medication/care: Usual care (n=25) Intervention 2: Availability of additional community services on a regular/routine basis - Additional community services on a regular/routine basis. Patients at the PCU were followed up daily by physicians and nurses. Access to other members of the multidisciplinary team, such as physiotherapists, psychologists, social workers, chaplains and volunteers.. Duration NA. Concurrent medication/care: Usual care. Indirectness: No indirectness

Funding	No funding
RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: HOME CARE versus PALLIATIVE CARE UNIT Protocol outcome 1: Quality of life - Actual outcome for Adults (aged 18 yrs or over): EORTC QLQ-C30: Global QoL at 14 days; Group 1: mean 16 (SD 16.95); n=25, 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 ; - Actual outcome for Adults (aged 18 yrs or over): EORTC QLQ-C30: Global QoL at 28 days; Group 1: mean 12 (SD 14.75); n=25, 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	Hospitalisation ; Number of hospital visits ; Number of visits to accident and emergency ; Number of unscheduled admissions ; Use of community services ; Preferred and actual place of death ; Length of survival ; Staff satisfaction ; Avoidable/inappropriate admissions to ICU ; Inappropriate attempts at cardiopulmonary resuscitation ; Patient/carer reported outcomes (satisfaction) ; Preferred and actual place of care ; Length of stay

Study	**Lustbader 2017[138]**
Study type	NRS
Number of studies (number of participants)	1 (n=651)
Countries and setting	Conducted in America; Setting: Queens, Nassau, and Suffolk Counties
Line of therapy	Unclear
Duration of study	Intervention + follow up: 18 months
Method of assessment of guideline condition	Adequate method of assessment/diagnosis
Stratum	Adults (aged 18 years or over)

Subgroup analysis within study	Not applicable
Inclusion criteria	Patients living in Queens, Nassau, and Suffolk Counties with 12 months of continuous Medicare claims data before death were included.
Exclusion criteria	Not reported
Recruitment/selection of patients	MSSP ACO patients at ProHEALTH, data retrieved from Medicaid records.
Age, gender and ethnicity	Age – Mean: 86 Gender (M:F): 325/326. Ethnicity: white 93%
Further population details	NA
Extra comments	.
Indirectness of population	Serious indirectness, unclear if control population was palliative
Interventions	(n=82) Intervention 1. Additional community services available in an acute/emergency scenario. Home-based palliative care (HBPC) program implemented within an Accountable Care Organization. The HBPC team comprised six registered nurses, two social workers, two doctors, one data analyst, and three administrative staff. Most patients got at least one house call and two telephone calls per month with additional outreach from team members as needed. The team engaged in serious illness conversations about goals of care with patients over time with documentation of treatment preferences. There were twice-weekly in person team meetings and a one-hour weekly one-to-one with the nurse, social worker, and palliative care physician to review the nurse caseload in detail. (n=569) Intervention 2. No additional community services available on a regular/routine basis (usual care). Usual care. Decedents with 12 months of continuous Medicare claims data before death.
Funding	Not reported.

RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: ADDITIONAL COMMUNITY SERVICES IN ACUTE/EMERGENCY SCENARIO (PEACH) versus USUAL CARE

Protocol outcome 1: Hospitalisation
- Actual outcome for Adults (aged 18 years or over): Number of hospitalisations (per 1000 patients); Group 1: 3037, Group 2: 4634 Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No

indirectness; Protocol outcome 2: Accident and emergency visits - Actual outcome for Adults (aged 18 years or over): Number of ED visits (per 1000 patients); Group 1: 878, Group 2: 1097 Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness; Protocol outcome 3: Use of community services - Actual outcome for Adults (aged 18 years or over): Service utilisation (Hospice enrolment); Group 1: 47/82, Group 2: 211/569 Risk of bias: All domain - High, Selection - High, Blinding - Low, 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 ; Number of unscheduled admissions ; Length of survival ; Staff satisfaction ; Avoidable/inappropriate admissions to ICU ; Inappropriate attempts at cardiopulmonary resuscitation ; Patient/carer reported outcomes (satisfaction) ; Preferred and actual place of care

Study	**Leppert 2014[130]**
Study type	Non-randomised comparative study
Number of studies (number of participants)	1 (n=129)
Countries and setting	Conducted in Poland; Setting: PCU of the Chair and Department of Palliative Medicine of Poznan University of Medical Science, Day care centre or patients' homes.
Line of therapy	Unclear
Duration of study	Not clear:
Method of assessment of guideline condition	Adequate method of assessment/diagnosis
Stratum	Adults (aged 18 yrs. or over)
Subgroup analysis within study	Not applicable
Inclusion criteria	Advanced cancer patients treated at home, at an in-patient palliative care unit, and at a day care centre.
Exclusion criteria	Diagnosed with lung cancer at earlier stages, without histological diagnosis of lung cancer, patients currently treated with surgery, radiotherapy, or chemotherapy, patients with brain metastases, patients with cognitive impairment.
Recruitment/selection of patients	Consecutive advanced cancer patients referred to the Chair and Department of Palliative Medicine in Poznan (PCU, home, and DCC) were invited to participate

Age, gender and ethnicity	Age - Mean (SD): PCU 65.96 (8.02) Home care 67.66 (10.66). Gender (M:F): 29/21. Ethnicity:
Further population details	1. Any specific population: Systematic review: mixed
Indirectness of population	Serious indirectness: No life expectancy prognosis - advanced cancer
Interventions	Intervention 1. Patients admitted to the PCU were those who could not be treated at home due to symptom burden or social problems; patients were followed up with every day by physicians and nurses, with other staff members available depending on patients' needs. N=51 Intervention 2. Patients treated at home were unable to attend the outpatient clinic; nurses visited them at home at least twice a week, physicians visited at least twice a month, and other team members visited the patients whenever it was necessary. N=51 Intervention 3. Patients treated at DCC were able to attend DCC twice a week; follow-up with a nurse was provided at each visit, with physician follow-up twice a month and follow-up with other staff members upon patient request. N=27
Funding	No funding

RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: HOME CARE versus PALLIATIVE CARE UNIT

Protocol outcome 1: Quality of life at Define

- Actual outcome for Adults (aged 18 yrs. or over): EORTC QLQ-C15-PAL: Global QoL at baseline; Group 1: mean 35.62 (SD 10.55); n=51, Group 2: mean 35.62 (SD 8.18); n=51, Group 3: mean 44.44 (SD 11.32); n=27, 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

- Actual outcome for Adults (aged 18 yrs. or over): EORTC QLQ-C15-PAL: Global QoL at 7 days; Group 1: mean 51.63 (SD 11.18); n=51, Group 2: mean 53.27 (SD 8.18); n=51, Group 3: mean 65.43 (SD 10.26); n=27, 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	Hospitalisation at Define; Number of hospital visits at Define; Number of visits to accident and emergency at Define; Number of unscheduled admissions at Define; Use of community services at Define; Preferred and actual place of death at Define; Length of survival at Define; Staff satisfaction at Define; Avoidable/inappropriate admissions to ICU at Define; Inappropriate attempts at cardiopulmonary resuscitation at Define; Patient/carer reported outcomes (satisfaction) at Define; Preferred and actual place of care at Define; Length of stay at Define

Study	Melin-johansson 2010[152]
Study type	Non-randomised comparative study
Number of studies (number of participants)	(n=63)
Countries and setting	Conducted in Sweden; Setting:
Line of therapy	Not applicable
Duration of study	Follow up (post intervention): 14 months
Method of assessment of guideline condition	Adequate method of assessment/diagnosis
Stratum	Adults (aged 18 yrs or over)
Subgroup analysis within study	Not applicable
Inclusion criteria	Patients with incurable cancer. Every eligible patient referred to the palliative care team was considered for participation in the study. Patients needed to be aware of diagnosis and prognosis, aged 18 years or older, speaking Swedish, able to complete questionnaires independently, and intention to be cared for in their private homes
Exclusion criteria	patients with expected survival of less than 1 month; patientss with other diagnosis than cancer, patients who failed to give informed consent.
Recruitment/selection of patients	Consecutive sampling frame
Age, gender and ethnicity	Age - Median (range): 72 (24-90). Gender (M:F): 36/27. Ethnicity:
Further population details	1. Any specific population: Not applicable
Indirectness of population	No indirectness
Interventions	(n=63) Intervention 1: Availability of additional community services on a regular/routine basis - Additional community services on a regular/routine basis. AFTER INTERVENTION (14 days after designation to PHT). The palliative homecare team (PHT) is composed of 7 full time registered nurses and 2 part-time physicians, with specific training in palliative care and long clinical experience of caring for this population. The PHT coordinates care in different geographical areas in the county, and with other categories of staff as district nurses, physio, OT, curators and a priest. The intention of the PHT is to minimise patient and family suffering by delivering effective, individualised palliative care, to support the patients' wish to stay at home and maintain an acceptable level of QoL. It is a 5-days a week consultative service working daytime hours and complementary to hospitalised care and community healthcare services. The nurse in the team has weekly phone contact with patients and family and makes home visits, sometimes with a physician. Interventions at home could include IV fluid therapy, blood transfusions, chemotherapy and other forms of technical support. The team also uses specific methods for symptom control (for example, for pain) and provides psychological,

	social and emotional support. . Duration 2 weeks. Concurrent medication/care: During evenings, nights and weekends, the district nurses on call in the county are in charge of care. . Indirectness: No indirectness (n=63) Intervention 2: No additional community services available on a regular/routine basis (usual care) - Usual care. BEFORE INTERVENTION: standard care. Duration 1 week before referral. Concurrent medication/care: not stated. Indirectness: No indirectness
Funding	Academic or government funding (Swedish cancer society, Mid Sweden University)
RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: ADDITIONAL COMMUNITY SERVICES ON A REGULAR/ROUTINE BASIS (AFTER INTERVENTION) versus USUAL CARE (BEFORE INTERVENTION) Protocol outcome 1: Quality of life - Actual outcome for Adults (aged 18 yrs or over): Global QoL (AQEL questionnaire) at 2 weeks after vs 1 week before intervention; Mean; (Mean (IQR) for after and before intervention, respectively: 5.70 (4), 4.98 (4))); 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	Hospitalisation ; Number of hospital visits ; Number of visits to accident and emergency ; Number of unscheduled admissions ; Use of community services ; Preferred and actual place of death ; Length of survival ; Staff satisfaction ; Avoidable/inappropriate admissions to ICU ; Inappropriate attempts at cardiopulmonary resuscitation ; Patient/carer reported outcomes (satisfaction) ; Preferred and actual place of care ; Length of stay

Study	**Ng 2017[165] Wong 2017[230]**
Study type	Randomised controlled trial
Number of studies (number of participants)	1 (n=84)
Countries and setting	Conducted in China
Line of therapy	Not applicable
Duration of study	Intervention + follow up: 12 weeks

Method of assessment of guideline condition	Adequate method of assessment/diagnosis
Stratum	Adults (aged 18 years or over)
Subgroup analysis within study	Not applicable
Inclusion criteria	End stage heart failure patients (III/IV), with one-year life expectancy.
Exclusion criteria	NS
Recruitment/selection of patients	Retrospective analysis of anonymised data, all patients who died between 2008 and 2009
Age, gender and ethnicity	Age (mean): 78.3 (10). Gender (M:F): 43/41.
Further population details	1. Any specific population: Not applicable
Indirectness of population	No indirectness
Interventions	(n=43) Intervention 1: Home-base Palliative Heart Failure; physical and psychological symptom assessment and management, social support, spiritual aspects of care, setting goals of care, and discussions of treatment preference and end-of-life issues. Structure included post-discharge home visits and telephone calls delivered by a PC case manager. (n=41) Intervention 2: Pre-discharge palliative care referral consultation and standard discharge planning including a scheduled outpatient PC clinic. Usual care group received two social calls.
Funding	Hong Kong University Grants Committee

RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: ADDITIONAL COMMUNITY SERVICES ON A REGULAR/ROUTINE BASIS versus USUAL CARE

Ng 2017 outcomes

Protocol outcome 1: Quality of life of person in last year of life
- Actual outcome for Adults (aged 18 years or over): MQOL-HK: global; Group 1:7.49 (7.15-7.83), Group 2: 6.61 (6.17-7.05); Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness;
- Actual outcome for Adults (aged 18 years or over): CHQ-C: total score; Group 1: 5.41 (4.52-6.01), Group 2: 5.31 (4.69-5.80); Risk of bias: All domain - High,

Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness; Protocol outcome 2: Patient satisfaction - Actual outcome for Adults (aged 18 years or over): Patient satisfaction: global; Group 1: 4 (3.22-4.5) n=37, Group 2: 2.76 (2.27-3.77) n=30; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness; Wong 2017 outcomes Protocol outcome 1: Quality of life of person in last year of life - Actual outcome for Adults (aged 18 years or over): SF-6D: Group 1:0.612 (0.556-0.668), Group 2: 0.603 (0.556-0.650); Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness; - Actual outcome for Adults (aged 18 years or over): QALY: Group 1: 0.0147 (0.0064-0.0229), Group 2: 0.0070 (-0.0002-0.0142); Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness; Protocol outcome 2: Number of visits to accident and emergency - Actual outcome for Adults (aged 18 years or over): Number of emergency room visits: n (mean): Group 1: 31 (0.7), Group 2: 59 (1.4); Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness; Protocol outcome 3: Length of stay - Actual outcome for Adults (aged 18 years or over): Length of hospital stay per patient (mean): Group 1: 5.1 (1.8-8.4), Group 2: 11.8 (7.1-16.4); Risk of bias: All domain - High, Selection - High, Blinding - Low, 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 ; Hospitalisation ; Number of hospital visits ; Number of visits to accident and emergency ; Number of unscheduled admissions ; Use of community services ; Length of survival ; Staff satisfaction ; Avoidable/inappropriate admissions to ICU ; Inappropriate attempts at cardiopulmonary resuscitation ; Patient/carer reported outcomes (satisfaction) ; Preferred and actual place of care ; Length of stay

Study	Noble 2015[168]
Study type	Non-randomised comparative study
Number of studies (number of participants)	1 (n=971)
Countries and setting	Conducted in United Kingdom
Line of therapy	Not applicable
Duration of study	Intervention + follow up: 1 year
Method of assessment of guideline condition	Adequate method of assessment/diagnosis
Stratum	Adults (aged 18 yrs or over)
Subgroup analysis within study	Not applicable
Inclusion criteria	The study cohort was constructed from patients who died during the study period (August 2008–August 2009), within the West Sussex, Surrey and Hampshire PCT areas in the south-east of England, with cancer as known cause of death, who could be matched to both the Public Health Mortality File and the Commissioning Data Set. This resulted in a 201-patient cohort for Midhurst, and 770 patients in the Hospice group
Exclusion criteria	NS
Recruitment/selection of patients	Retrospective analysis of anonymised data, all patients who died between 2008 and 2009
Age, gender and ethnicity	Age - Other: not stated. Gender (M:F): not stated. Ethnicity: NS
Further population details	1. Any specific population: Not applicable
Indirectness of population	No indirectness
Interventions	(n=201) Intervention 1: Availability of additional community services on a regular/routine basis - Additional community services on a regular/routine basis. The Midhurst Macmillan Specialist Palliative Care Service is a medical consultant-led multi-disciplinary team, re-configured as a community service following the closure of the King Edward VII Hospital, West Sussex, UK in 2006 and modelled on the Motala hospital-based home care programme in Sweden (Beck-Friis & Strang 1993). The Midhurst service is one of only two in the UK that involves a medical consultant-led multi-disciplinary team that aims to provide round-the-clock, 'hands-on' care and advice at home, in community hospitals and in nursing or residential homes. The range of palliative interventions includes intravenous infusions, paracentesis and intrathecal analgesia. The service aims were: to put in place a sustainable and affordable specialist palliative care service for the population within the Midhurst and surrounding areas; to reduce acute hospital interventions and inpatienthospice stays; to ensure that patient choice is maximised by providing as much treatment and support in the home/ community setting as possible . Duration unclear. Concurrent medication/care: not stated. Indirectness: No indirectness

	(n=770) Intervention 2: No additional community services available on a regular/routine basis (usual care) - Usual care. Patients who accessed a normal hospice. Duration unclear. Concurrent medication/care: Not stated. Indirectness: No indirectness
Funding	Academic or government funding (MacMillan Cancer Support)
RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: ADDITIONAL COMMUNITY SERVICES ON A REGULAR/ROUTINE BASIS versus USUAL CARE Protocol outcome 1: Preferred and actual place of death - Actual outcome for Adults (aged 18 yrs or over): People dying at home at unclear; Group 1: 143/201, Group 2: 539/770 Risk of bias: All domain - Very high, Selection - Very high, Blinding - High, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: Serious indirectness, Comments: no details on preferred;	
Protocol outcomes not reported by the study	Quality of life ; Hospitalisation ; Number of hospital visits ; Number of visits to accident and emergency ; Number of unscheduled admissions ; Use of community services ; Length of survival ; Staff satisfaction ; Avoidable/inappropriate admissions to ICU ; Inappropriate attempts at cardiopulmonary resuscitation ; Patient/carer reported outcomes (satisfaction) ; Preferred and actual place of care ; Length of stay

Study	Pattenden 2013[180]
Study type	Non-randomised comparative study
Number of studies (number of participants)	1 (n=99)
Countries and setting	Conducted in United Kingdom; Setting: The nurses and MCHCAs were working in two English primary care trusts (PCTs): Poole, and Bradford and Airedale. Six BHF HFSNs were involved in the study in Bradford and two in Poole. Poole PCT covers both rural and city areas and has high numbers of elderly people. Bradford and Airedale PCT has a mostly urban population with significant areas of deprivation and high numbers of residents from ethnic minority groups. There were significant differences in the HFSN service configuration at the two sites. In Bradford, the heart failure and palliative care services were already working in partnership with palliative care, and the HFSNs had organised a weekly Heart Failure Support Group in the MC hospice day unit. In Poole, prior to establishing BT, the HFSNs had primarily received their caseloads from cardiologists and had fewer severely ill and elderly patients than their counterparts in Bradford, and concentrated more on newly diagnosed CHF patients. However, from the start of BT they began to obtain more referrals from 'care of the elderly' wards, GPs and district nurses which increased the proportion of patients in their caseload with an NYHA severity classification of III or IV and multiple co-morbidities.
Line of therapy	Not applicable
Duration of study	Intervention + follow up: Median survival from referral to intervention: 31-48 days
Method of assessment of guideline condition	Adequate method of assessment/diagnosis
Stratum	Adults (aged 18 yrs or over)
Subgroup analysis within study	Not applicable
Inclusion criteria	Cases: Patients had to meet all these criteria: NYHA III or IV, patients thought to be in the last year of life by their referrer, repeated hospital admissions, difficult physical/psychological symptoms despite optimal therapy, needing extra care or support, willing to have the service. Control groups were a convenience sample identified retrospectively by the HFSNs from their service caseloads in Poole and Bradford. The nurses reviewed their caseloads from September 2004 to August 2006 and selected all NYHA level III and IV patients who would have been considered eligible for a palliative care service such as BT. Data on patient outcome (date and place of death) were sourced separately and matched to resource use estimates using the patients NHS number.
Exclusion criteria	Not stated
Recruitment/selection of patients	Patients could be referred to the new service bytHeart Failure SPecialist Nurses (HFSN), district niurses, community matrons and GPs

Age, gender and ethnicity	Age - Mean (SD): Intervention group (Bradford) 79.9(9.3), intervention group (Poole) 83.5(10.4), control group (Bradford) 76.0*12.4), control group (Poole) 81.7(5.4). Gender (M:F): 113/84. Ethnicity: 85% white in Bradord, 100% in Poole
Further population details	1. Any specific population: Not applicable
Indirectness of population	No indirectness
Interventions	(n=99) Intervention 1: Availability of additional community services on a regular/routine basis - Additional community services on a regular/routine basis. 'Better Together' (BT): a 2-year collaboration between BHF HFSNs, Marie Curie Cancer Care nurses (MCNs) and Marie Curie Cancer Care healthcare assistants (MCHCAs) working together alongside cardiologists, care of the elderly sconsultants, district nurses and GPs to enable home/based end of life care. The BHF and MCCC established a supportive and palliative care service. Staff from both organisations underwent joint training to learn about each other's working practices. BHF HFSNs provided selfmanagement education and advice to patients and their carers. They managed symptoms through clinical assessment and regular medication monitoring and review. MCNs provided practical palliative physical nursing care, including the administration of prescribed medications for pain relief and agitation, and psychological support from referral until the end of life. They also liaised with district nurses and other support services for the provision of comfort aids. MCHCAs provided respite care, including basic physical care and psychological support, to patients and carers. Day or night shifts could be booked days or weeks in advance and patients could use the service occasionally (to avoid a readmission), regularly (for respite or last weeks of care) or as a one-off during a particular spell of ill health, but were then discharged until the service was needed again. Duration unclear. Concurrent medication/care: Not stated. Indirectness: No indirectness (n=98) Intervention 2: No additional community services available on a regular/routine basis (usual care) - Usual care. Historical control group (no Better together service). Duration unclear. Concurrent medication/care: Not stated. Indirectness: No indirectness
Funding	Academic or government funding (British Heart Foundation and MarieCurie Cancer Care funded the BetterTogether pilot study and research. The sponsors had no involvement in producing this manuscript but the BHF approved the final paper)

RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: ADDITIONAL COMMUNITY SERVICES ON A REGULAR/ROUTINE BASIS versus USUAL CARE

Protocol outcome 1: Length of stay
- Actual outcome for Adults (aged 18 yrs or over): Length of stay (Bradford) at unclear: Group 1: mean 7.1 (SD 7.7): n=62, Group 2: mean 9.5 (SD 11.9): n=76

Risk of bias: All domain - Very high, Selection - High, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness; Baseline details: Age; Key confounders: matching on data costs; - Actual outcome for Adults (aged 18 yrs or over): Length of stay (Pool) at unclear; Group 1: mean 12.3 (SD 14.7); n=37, Group 2: mean 11.3 (SD 12.4); n=22 Risk of bias: All domain - Very high, Selection - High, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness; Baseline details: Age; Key confounders: matching on data costs; Protocol outcome 2: Number of unscheduled admissions - Actual outcome for Adults (aged 18 yrs or over): Number of patients admitted at unclear; Group 1: 41/99, Group 2: 63/98 Risk of bias: All domain - Very high, Selection - High, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: Serious indirectness, Comments: No details on unscheduled; Baseline details: Age; Key confounders: matching on data costs; - Actual outcome for Adults (aged 18 yrs or over): Number of admissions per patients (Bradford) at unclear; Group 1: mean 2 (SD 1.5); n=62, Group 2: mean 2.3 (SD 1.8); n=76 Risk of bias: All domain - Very high, Selection - High, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: Serious indirectness, Comments: No details on unscheduled; Baseline details: Age; Key confounders: matching on data costs; - Actual outcome for Adults (aged 18 yrs or over): Number of admissions per patients (Pool) at unclear; Group 1: mean 1.4 (SD 0.6); n=37, Group 2: mean 2.4 (SD 1.2); n=22 Risk of bias: All domain - Very high, Selection - High, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: Serious indirectness, Comments: No details on unscheduled; Baseline details: Age; Key confounders: matching on data costs;	
Protocol outcomes not reported by the study	Quality of life ; Number of hospital visits ; Number of visits to accident and emergency ; Use of community services ; Preferred and actual place of death ; Length of survival ; Staff satisfaction ; Avoidable/inappropriate admissions to ICU ; Inappropriate attempts at cardiopulmonary resuscitation ; Patient/carer reported outcomes (satisfaction) ; Preferred and actual place of care ; Hospitalisation

Study	Riolfi 2014[190]
Study type	Non-randomised comparative study
Number of studies (number of participants)	1 (n=402)
Countries and setting	Conducted in Italy; Setting: Italy, community intervention
Line of therapy	Adjunctive to current care
Duration of study	--:
Method of assessment of guideline condition	Adequate method of assessment/diagnosis
Stratum	Adults (aged 18 yrs or over)
Subgroup analysis within study	Not applicable
Inclusion criteria	Predicted life expectancy three months
Exclusion criteria	People on life prolonging cancer therapy
Recruitment/selection of patients	People who were offered the intervention. These were people who lived in a specific region of Italy. The outcomes of this group were compared with people living in a different region where the service was not implemented
Age, gender and ethnicity	Age - Mean (SD): No palliative care 75.1 (11.9) Palliative care 72.1 (11.9). Gender (M:F): Not reported. Ethnicity: Not reported
Further population details	1. Any specific population: Not applicable
Extra comments	People who died of cancer in 2011.
Indirectness of population	No indirectness
Interventions	(n=160) Intervention 1: Availability of additional community services on a regular/routine basis - Additional community services on a regular/routine basis. The service consisted of two palliative care physicians and 30 specialist nurses who cooperate with GPs. GPs have to guarantee their on-call availability and they do not always recommend activating home care for their patients either because of the burden of this kind of care or because they do not recognise the terminal phase of illness. The intensity of care depends on the patient's condition: at least one specialist medical examination a week is guaranteed for all terminally ill patients being cared for at home and this specialist medical exam is conducted daily in the last days of life. Nurses are called into deal with medication and infusion therapies. The services of a palliative care physician or nurse are assured from Monday to Friday (8am to 8pm). On Saturdays and Sundays there is a nurse on call 8am to 8pm. During the night and weekends patients and caregivers and colleagues can always contact a palliative care physician by phone . Duration Predicted life expectancy of three months. Concurrent medication/care: None. Indirectness: No indirectness

	(n=242) Intervention 2: No additional community services available on a regular/routine basis (usual care) - Usual care. GPs acted as gatekeepers to the health system. Traditionally GPs have worked in solo practices. The outcomes of the comparison group were for people treated before the palliative home care team was implemented. Duration People with a life expectancy of three months. Concurrent medication/care: None reported. Indirectness: No indirectness Comments: The service prior to the intervention is not well described
Funding	No funding

RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: ADDITIONAL COMMUNITY SERVICES ON A REGULAR/ROUTINE BASIS versus USUAL CARE

Protocol outcome 1: Length of stay
- Actual outcome for Adults (aged 18 yrs or over): Time spent in hospital in last two months of life at Two months; Group 1: mean 4.4 days (SD 10.4); n=160, Group 2: mean 19.6 days (SD 18.9); n=242
Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low;
Indirectness of outcome: No indirectness;

Protocol outcome 2: Hospitalisation
- Actual outcome for Adults (aged 18 yrs or over): Number of hospitalisations in the last two months of life at Two months; Group 1: mean 0.4 (SD 0.7); n=160, Group 2: mean 1.3 (SD 1); n=242
Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low;
Indirectness of outcome: No indirectness ;

Protocol outcome 3: Preferred and actual place of death
- Actual outcome for Adults (aged 18 yrs or over): Place of death - hospital at Not applicable; Group 1: 37/160, Group 2: 178/242
Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low;
Indirectness of outcome: Serious indirectness, Comments: Place of death is reported but not whether this was the preferred place of death;
- Actual outcome for Adults (aged 18 yrs or over): Place of death - home at Not applicable; Group 1: 86/160, Group 2: 19/242
Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low;
Indirectness of outcome: Serious indirectness, Comments: Place of death is reported but not whether this was the preferred place of death;
- Actual outcome for Adults (aged 18 yrs or over): Place of death - nursing home at Not applicable; Group 1: 13/160, Group 2: 30/242
Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low;
Indirectness of outcome: Serious indirectness, Comments: Place of death is reported but not whether this was the preferred place of death;
- Actual outcome for Adults (aged 18 yrs or over): Place of death - country hospital at Not applicable; Group 1: 24/160, Group 2: 15/242
Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low;

Indirectness of outcome: Serious indirectness, Comments: Place of death is reported but not whether this was the preferred place of death;	
Protocol outcomes not reported by the study	Quality of life ; Number of visits to accident and emergency ; Number of unscheduled admissions ; Use of community services ; Length of survival ; Staff satisfaction ; Avoidable/inappropriate admissions to ICU ; Inappropriate attempts at cardiopulmonary resuscitation ; Patient/carer reported outcomes (satisfaction) ; Preferred and actual place of care ; Number of hospital visits

Study (subsidiary papers)	Sahlen 2016[192] (Brannstrom 2013[29])
Study type	RCT (Patient randomised; Parallel)
Number of studies (number of participants)	(n=72)
Countries and setting	Conducted in Sweden; Setting: Advanced home care unit providing services Monday - Friday, based in a county hospital.
Line of therapy	Unclear
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	Confirmed diagnosis of CHF according to criteria of European Society of Cardiology, NYHA functional class 3 symptoms, one of: hospitalised episode of worsening heart failure that resolved with the injection/infusion of diuretics or addition of other heart failure treatment in the preceding 6 months; the need for frequent or continual iv support; chronically poor quality of life; signs of cardiac cachexia; and life expectancy of <1 year.
Exclusion criteria	People who did not want to take part to the study; people with severe communication problems, people with severe dementia; people with other serious diseases in where heart failure is of secondary importance; people with other life-threatening illnesses as their primary diagnosis and an expected short survival time; people whose primary care centre responsible for their care is geographically located > 30 km from the hospital; people who are already participating in another clinical trial.
Age, gender and ethnicity	Age - Other: . Gender (M:F): NA. Ethnicity:
Further population details	1. Any specific population: Not applicable
Extra comments	. Full methods reported in previous study 'Brannstrom et al., 2013. A new model for integrated heart failure and palliative advanced homecare - rationale and design of a prospective randomised study.
Indirectness of population	No indirectness
Interventions	(n=36) Intervention 1: Availability of additional community services on a regular/routine basis - Additional community services on a regular/routine basis. Patients offered a multidisciplinary approach involving collaboration between specialists in palliative and heart failure care, that is specialised nurses, palliative care nurses, cardiologist, palliative care physician, physiotherapist, and occupational therapist. The programme included patient education on self-care maintenance and management of heart failure, and establishment of an ACP, designed with pts and revised regularly. Key individuals for

	example, nurse and physician were identified for each patient (point of contact). Out of hours providers were informed of the identity of these pts and know how to respond to calls.. Duration 6 months. Concurrent medication/care: Full access to hospital-based emergency care.. Indirectness: No indirectness (n=36) Intervention 2: No additional community services available on a regular/routine basis (usual care) - Usual care. Standard care, usually provided by a primary health care centre or the nurse-led heart failure clinic at the hospital.. Duration 6 months. Concurrent medication/care: Full access to hospital-based emergency care.. Indirectness: No indirectness
Funding	Academic or government funding (Swedish Association of Local Authorities and Regions, and the Strategic Research Program in Health Care Services)
RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: ADDITIONAL COMMUNITY SERVICES ON A REGULAR/ROUTINE BASIS versus USUAL CARE Protocol outcome 1: Quality of life - Actual outcome: QALY at 6 months; Group 1: mean 0.006 QALYs (SD 0.056); n=36, Group 2: mean -0.024 QALYs (SD 0.056); n=36; Comments: p=0.026 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	Hospitalisation ; Number of hospital visits ; Number of visits to accident and emergency ; Number of unscheduled admissions ; Use of community services ; Preferred and actual place of death ; Length of survival ; Staff satisfaction ; Avoidable/inappropriate admissions to ICU ; Inappropriate attempts at cardiopulmonary resuscitation ; Patient/carer reported outcomes (satisfaction) ; Preferred and actual place of care ; Length of stay

Study	Seow 2008[202]
Study type	Non-randomised comparative study
Number of studies (number of participants)	1 (n=89)
Countries and setting	Conducted in USA; Setting: Managed care organisation in Maryland.
Line of therapy	Mixed line
Duration of study	Other: NA
Method of assessment of guideline condition	Adequate method of assessment/diagnosis
Stratum	Adults (aged 18 yrs. or over)
Subgroup analysis within study	Not applicable
Inclusion criteria	Current cancer diagnosis, over 18 years old, had a date of enrolment or refusal to the program, and had confirmed date of death while insured under the managed care organisation.
Exclusion criteria	Referred to the program for 1 week or less (deemed too short a time period to benefit from case management)
Recruitment/selection of patients	Enrolees of a Maryland-mandated Medicaid insurance program administered by the managed care organisation.
Age, gender and ethnicity	Age - Mean (SD): 52 (10.54). Gender (M:F): 36/53. Ethnicity:
Further population details	1. Any specific population: Not applicable
Indirectness of population	No indirectness
Interventions	(n=69) Intervention 1: Case manager. The Omega Life Program (OLP) - Nurse case managers lead the program and provided an initial and on-going holistic assessment of physical, psychosocial, and spiritual needs of patient and family. Case managers educate patients and families about various topics, including advance directives, hospice options, insurance and prescription benefits, and symptom management. Patients and families are taught to contact case managers for information and needs rather than emergencies. Patients are followed by the case manager from enrolment through to death. The case manager also coordinates care between multiple providers, integrate various providers into the care team, and serve as the main point of contact for the patient and the families to help them navigate the health system.. Duration >1 week. Concurrent medication/care: NA (n=20) Intervention 2: Usual care. Patients referred to the OLP who elected not to enrol. Continued to receive usual care. . Duration <1 week. Concurrent medication/care: NA

Funding	Study funded by industry (ConnectCare3/ The Beacon Group)
RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: CASE MANAGER versus USUAL CARE Protocol outcome 1: Hospitalisation - Actual outcome for Adults (aged 18 yrs. or over): Odds of having one or more hospital admission at >1 weeks; OR 0.138 (95%CI 0.03 to 0.57) (P 0.006); Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness; Protocol outcome 2: Length of survival - Actual outcome for Adults (aged 18 yrs. or over): Deaths since referral (8-30 days) at 8-30 days; Group 1: 28/69, Group 2: 3/20; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness; - Actual outcome for Adults (aged 18 yrs. or over): Deaths since referral (31-120 days) at 31-120 days; Group 1: 20/69, Group 2: 8/20; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness; - Actual outcome for Adults (aged 18 yrs. or over): Deaths since referral (120+ days) at 120+ days; Group 1: 21/69, Group 2: 9/20; Risk of bias: All domain - High, Selection - High, Blinding - Low, 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 ; Number of hospital visits ; Number of visits to accident and emergency ; Number of unscheduled admissions ; Use of community services ; Preferred and actual place of death ; Staff satisfaction ; Avoidable/inappropriate admissions to ICU ; Inappropriate resuscitation ; Patient/carer reported outcomes (satisfaction) ; Preferred and actual place of care ; Length of stay

Study	**Seow 2014[201]**
Study type	Non-randomised comparative study
Number of studies (number of participants)	1 (n=6218)
Countries and setting	Conducted in Canada; Setting: Community-based services in Ontario, Canada. 11 specialist palliative care teams providing services in patients' homes. Administrative databases (Vital Statistics, Discharge Abstract Database, National Ambulatory Care Reporting SYstem, Home Care Database, Statistics Canada)
Line of therapy	Not applicable
Duration of study	Intervention + follow up: 2 years (2009-2011)

Method of assessment of guideline condition	Adequate method of assessment/diagnosis
Stratum	Adults (aged 18 years or over)
Subgroup analysis within study	Not applicable:
Inclusion criteria	Intervention group: Patients of palliative care specialist teams that a) provide interdisciplinary, home based palliative care, b) were the only such team in their respective region, c) had little or no change in staffing between 2009 until 2012, d) had broad admission criteria, that is, not limited to one disease such as cancer, e) admitted more than 50 patients/year, f) were available to patients 24/7, g) had the same core members of their team as the past randomised trials. Control group: a) for teams beginning after 2009, patients in the intervention group were assigned a match from the pool of decedents within the same health region in an earlier period, fiscal years 2007-2009, so factors related to health system delivery were the same; b) for teams starting before 2009, decedents in the intervention group were assigned a match from the pool of decedents from a neighbouring region that was similar in size, geography, and access to services during the same study period (2009-2011) but did not have a palliative care team available.
Exclusion criteria	Patients were excluded if they were alive after fiscal year 2011, were < 18 years old, or had an invalid or missing provincial health insurance number.
Recruitment/selection of patients	Propensity score matching was used: the propensity score is each individual's probability of using a specialist team given the values of his pre-intervention, baseline covariates. Matching on propensity scores can estimate the effect of the intervention, which is unbiased by differences in measured preintervention covariates, thus aiming to simulate a randomised trial using observational data.
Age, gender and ethnicity	Age - Median (IQR): Intervention group: 75 (64-84) years; control group: 74 (63-83) years. Gender (M:F): 3009/3209. Ethnicity: not stated
Further population details	1. Any specific population:
Extra comments	.
Indirectness of population	No indirectness
Interventions	(n=3109) Intervention 1: Out of hours service. Type: specialist palliative care team. Team: despite variations in team composition, all 11 teams had the same team core members: nurses, palliative care physicians, and family physicians. Description: the team provided interdisciplinary, home-based palliative care to people with palliative care needs not limited to a single disease, for example, cancer. There was variation in care provided, but core features of services in the intervention group were 24/7 care and collaboration between health professionals.. Duration 2 years. Concurrent medication/care: Usual care (n=3109) Intervention 2: Out of hours service. Usual care: home based palliative care delivered by the public homecare system, without involvement from palliative care teams. Usual care can be fragment and inconsistent in quality. The

	homecare agency coordinates care and contracts the delivery of services, mainly nursing and personal support at end of life. Little coordination between service providers. Contacting providers and receiving care after office hours or weekend is difficult.. Duration 2 years. Concurrent medication/care: Usual care
Funding	Academic or government funding (This study was funded by a grant from the Canadian Institutes of Health Research and used databases maintained by the Institute for Clinical Evaluative Sciences, which receives funding by the Ontario Ministry of Health and Long term Care.)
RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: SPECIALIST PALLIATIVE CARE TEAM (24/7) versus USUAL CARE Protocol outcome 1: Hospitalisation - Actual outcome for Adults (aged 18 years or over): People in hospital in the last 2 weeks of life at last 2 weeks of life ; Group 1: 970/3109, Group 2: 1219/3109; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness; Protocol outcome 2: Number of visits to accident and emergency - Actual outcome for Adults (aged 18 years or over): Emergency department visits in the last 2 weeks of life at last 2 weeks of life ; Group 1: 896/3109, Group 2: 1070/3109; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness; Protocol outcome 3: Preferred and actual place of death - Actual outcome for Adults (aged 18 years or over): People dying in hospital at end of follow up; Group 1:503/3109, Group 2: 887/3109; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: Serious indirectness	
Protocol outcomes not reported by the study	Quality of life ; Number of hospital visits ; Number of unscheduled admissions ; Use of community services ; Length of survival ; Staff satisfaction ; Avoidable/inappropriate admissions to ICU ; Inappropriate resuscitation ; Length of stay

Study	Sessa 1996[203]
Study type	Non-randomised comparative study
Number of studies (number of participants)	1 (n=993)
Countries and setting	Conducted in Switzerland; Setting: Servizio Oncologico Cantonale (SOC) - the referral center for medical oncology in the Ticino region of southern Switzerland.
Line of therapy	Not applicable
Duration of study	Follow up (post intervention): 3 months
Method of assessment of guideline condition	Adequate method of assessment/diagnosis: age at death: 16% <50 years, 51% 50-70 years, 33% > 70 years
Stratum	Adults (aged 18 yrs or over)
Subgroup analysis within study	Not applicable
Inclusion criteria	patients's wish to be treated by home care services, an expected survival generally less than 3 months, concurrence of the family for the patient to remain at home, availability of one relative or friend of reference, and sufficient cooperation with the family doctor. The following cases were included in the analysis: patients whose treatment had been taken over by the SOC; patients for whose treatment the advice oof a specialist in the SOC had been and was regularly sought, together with clinician controls if necessary.
Exclusion criteria	not stated
Recruitment/selection of patients	review of clinical data of patients who died between Jan 1991 and July 1993 in the Ticino region of southern Switzerland. Consecutive series of cancer patients seen in the referral centre.
Age, gender and ethnicity	Age - Other: . Gender (M:F): 56%/42%. Ethnicity:
Further population details	1. Any specific population: Not applicable
Extra comments	.
Indirectness of population	No indirectness
Interventions	(n=317) Intervention 1: Availability of additional community services on a regular/routine basis - Additional community services on a regular/routine basis. Home-care program users. Community nurses are organised into 5 geographically grouped structures corresponding to the districts of the region and are supported by local public funds. Public home-care services for cancer patients are thus available in the entire region, operated through the collaboration of community nurses, family doctors available, specialists and social workers from the cancer center, and patients'relatives and friends. Contact between patients and the community nurses is established by the SOC, usually with the agreement of family doctors. In each district, one nurse from the oncology outpatient clinic is responsible for

	coordination between community and hospital services of the home-care program. The SOC personnel responsible for the local home-care program (physicians, nurses, social workers) meet weekly with community nurses; SOC physicians are responsible for keeping family doctors informed about problems discussed and decisions taken during these meetings.. Duration 3 months before death. Concurrent medication/care: Not stated. Indirectness: No indirectness (n=676) Intervention 2: No additional community services available on a regular/routine basis (usual care) - Usual care. Home care non-users. Duration 3 months before death. Concurrent medication/care: Not stated. Indirectness: No indirectness
Funding	Funding not stated

RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: ADDITIONAL COMMUNITY SERVICES ON A REGULAR/ROUTINE BASIS versus USUAL CARE

Protocol outcome 1: Length of stay
- Actual outcome for Adults (aged 18 yrs or over): Days of hospital stay at 3 months before death; Mean; (Median hospital stay (10th-90th percentile): intervention group 17 (0-57) days; control group 28 (1-75) days));
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; Baseline details: as reported;

Protocol outcome 2: Number of unscheduled admissions
- Actual outcome for Adults (aged 18 yrs or over): People with 1-2 hospitalisations at 3 months before death; Group 1: 216/317, Group 2: 527/676
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: Serious indirectness, Comments: no info on unscheduled; Baseline details: as reported;
- Actual outcome for Adults (aged 18 yrs or over): People with ≥3 hospitalisations at 3 months before death; Group 1: 38/317, Group 2: 88/676
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: Serious indirectness, Comments: no info on unscheduled; Baseline details: as reported;

Protocol outcome 3: Preferred and actual place of death
- Actual outcome for Adults (aged 18 yrs or over): Place of death (n of people dying at the hospital) at NA; Group 1: 162/317, Group 2: 504/676
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: Serious indirectness, Comments: no info on preferences; Baseline details: as reported;
- Actual outcome for Adults (aged 18 yrs or over): Place of death (n of people dying at home) at NA; Group 1: 138/317, Group 2: 74/676
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: Serious indirectness, Comments: no info on preferences; Baseline details: as reported;
- Actual outcome for Adults (aged 18 yrs or over): Place of death (n of people dying at nursing home or private clinic) at NA; Group 1: 16/317, Group 2: 91/676

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: Serious indirectness, Comments: no info on preferences; Baseline details: as reported;	
Protocol outcomes not reported by the study	Quality of life ; Number of hospital visits ; Number of visits to accident and emergency ; Use of community services ; Length of survival ; Staff satisfaction ; Avoidable/inappropriate admissions to ICU ; Inappropriate attempts at cardiopulmonary resuscitation ; Patient/carer reported outcomes (satisfaction) ; Preferred and actual place of care ; Hospitalisation

Study	Smeenk 1998[207]
Study type	Non-randomised comparative study
Number of studies (number of participants)	1 (n=62)
Countries and setting	Conducted in Netherlands; Setting: Eindhoven transmural care
Line of therapy	Not applicable
Duration of study	Not clear: 1 year
Method of assessment of guideline condition	Adequate method of assessment/diagnosis
Stratum	Adults (aged 18 yrs or over)
Subgroup analysis within study	Not applicable
Inclusion criteria	Patients who were admitted to the multidisciplinary oncology ward of the hospital and who met the following inclusion criteria: cancer, an estimated prognosis of less than 6 months, age 18 years or older, and being fully informed of diagnosis. Cancer patients admitted to hospital and who were living in Eindhoven were allocated to intervention group, and those from the surrounding areas to the control group
Exclusion criteria	Nit stated
Recruitment/selection of patients	Patients included from January 1994 till February 1995
Age, gender and ethnicity	Age - Mean (SD): Intervention group: 64.4 (10.9), control group: 63.7(9.8). Gender (M:F): 70/46. Ethnicity:
Further population details	1. Any specific population: Any specific population (Patients in whom active treatment is still a choice (n=29 are people who are still receiving chemotherapy/operative therapy/radiotherapy/hormonal therapy)).
Indirectness of population	No indirectness
Interventions	(n=79) Intervention 1: Availability of additional community services on a regular/routine basis - Additional community services on a regular/routine basis. Transmural home care intervention programme: it was specifically aimed at assisting the primary care team and consisted of 4 main items: a) A SPECIALIST NURSE COORDINATOR: the key person in the programme. She prepares the necessary patients discharge arrangements. Patient's wishes and care needs are assessed by her as well as the possibility of patient support by professional caregivers. She has daily contacts with caregivers, from medical specialists to home helpers. She monitors the care provision process, tracks down and solves possible defaults or shortcomings. b) THE 24 HOURS TELEPHONE SERVICE: this is installed in the multidisciplinary oncology ward and manned by nurses trained to give assistance to patients on the phone. the service can be contacted for advice if problems arise at home, by direct line, and a specialist can also be contacted if needed. c) ACCESS TO A TRANSMURAL HOME TEAM: if specific nursing problems cannot be solved by the primary care team, support is

	provided by trained nurses from the hospitals transmural home team on request by the GP. The team consists of nurses from the hospital's casualty and day care departments. During on call hours they can be called by semaphone. d) HOME CARE DOSSIER: informed consent, a list of caregivers involved in the care of the patient, a preliminary discharge report for the general practicioner, a nursing transfer report for the community nurse, a transfer report for home helpers dealing mainly with the patient's self-care capacity or the support available from his informal caregivers, the medication list, a dietician's report, and a multidisciplinary report. Caregivers from primary and hospital care teams are asked to collaborate in reporting findings and actions.. Duration unclear. Concurrent medication/care: standard community care: the primary care team consists of a GP (available 24 hrs a day), a community nurse (available 24 hrs/day), a home help service, and a medical aid supply service which can provide special equipment for use at home for the patient, for example, special beds, equipment for epidural analgesia, etcetera. . Indirectness: No indirectness (n=37) Intervention 2: No additional community services available on a regular/routine basis (usual care) - Usual care. standard community care: the primary care team consists of a GP (available 24 hrs a day), a community nurse (available 24 hrs/day), a home help service, and a medical aid supply service which can provide special equipment for use at home for the patient, for example, special beds, equipment for epidural analgesia, etcetera. . Duration unclear. Concurrent medication/care: standard community care. Indirectness: No indirectness
Funding	Academic or government funding (National committee of chronic diseases in the Netherlands, Scientific fund of the Catharina hospital, Eindhoven.)

RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: ADDITIONAL COMMUNITY SERVICES ON A REGULAR/ROUTINE BASIS versus USUAL CARE

Protocol outcome 1: Quality of life
- Actual outcome for Adults (aged 18 yrs or over): QoL at unclear; Mean; (the intervention programme contributed significantly (p=0.065) towards a better physical functioning));
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 ; Key confounders: 'no significant confounders could be identified for this outcome measure';

Protocol outcome 2: Length of stay
- Actual outcome for Adults (aged 18 yrs or over): Days in hospital at rehospitalisation at unclear; Group 1: mean 5.8 (SD 12.8); n=79, Group 2: mean 11.5 (SD 17.1); n=37
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 ; Key confounders: 'no significant confounders could be identified for this outcome measure';

Protocol outcome 3: Preferred and actual place of death

- Actual outcome for Adults (aged 18 yrs or over): N of people dying at home at unclear; Group 1: 64/79, Group 2: 24/37 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, Comments: no info on preference; Key confounders: 'no significant confounders could be identified for this outcome measure'; Protocol outcome 4: Length of survival - Actual outcome for Adults (aged 18 yrs or over): Days of survival at unclear; Group 1: mean 101.2 (SD 141.5); n=79, Group 2: mean 68.8 (SD 82.5); n=37 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 ; Key confounders: 'no significant confounders could be identified for this outcome measure';	
Protocol outcomes not reported by the study	Number of hospital visits ; Number of visits to accident and emergency ; Number of unscheduled admissions ; Use of community services ; Staff satisfaction ; Avoidable/inappropriate admissions to ICU ; Inappropriate attempts at cardiopulmonary resuscitation ; Patient/carer reported outcomes (satisfaction) ; Preferred and actual place of care ; Hospitalisation

Study	Wong 2013[232]
Study type	Non-randomised comparative study
Number of studies (number of participants)	1 (n=44)
Countries and setting	Conducted in Singapore; Setting: a tertiary hospital in Singapore
Line of therapy	Not applicable
Duration of study	Intervention + follow up: mean 15 (SD8) months
Method of assessment of guideline condition	Adequate method of assessment/diagnosis
Stratum	Adults (aged 18 yrs or over)
Subgroup analysis within study	Not applicable
Inclusion criteria	end-stage HF patients (NYHA class II and IV despite optimal medical treatment and/or cardiac resynchronisation therapy), expected 1 year survival, symptoms or end-of-life psychosocial needs likely to benefit from a multidisciplinary approach, with potential for adequate and safe care at home.
Exclusion criteria	Define
Recruitment/selection of patients	registry data on all end-stage HF patients recruited into the palliative care programme in a single tertiary care hospital between July 2008 and July 2010
Age, gender and ethnicity	Age - Other: Mean 79 y. Gender (M:F): 14/27. Ethnicity:
Further population details	1. Any specific population: Not applicable
Extra comments	.
Indirectness of population	No indirectness
Interventions	(n=44) Intervention 1: Availability of additional community services on a regular/routine basis - Additional community services on a regular/routine basis. (AFTER INTERVENTION) Home palliative care programme: a multidisciplinary team consisting of a doctor, a nurse and/or a counsellor. Patient contacts ranged from weekly to monthly home visitations by the ACP members depending on patinet's acuity of conditions. Oral medications could be modified or initiated to maximally palliate patients' HF and/or general symptoms. Telephonic consults were made available 24/7to facilitate updates of clinical conditions and delivery of advice and education. . Duration unclear. Concurrent medication/care: the patients were also followed in hospital-based chronic disease management programme (CDMP) for HF at regular intervals, between weekly and 2-monthly, depending on clinical indications. . Indirectness: No indirectness (n=44) Intervention 2: No additional community services available on a regular/routine basis (usual care) - Usual care.

	Before intervention. Duration unclear. Concurrent medication/care: not stated. Indirectness: No indirectness
Funding	Funding not stated
RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: ADDITIONAL COMMUNITY SERVICES ON A REGULAR/ROUTINE BASIS (AFTER INTERVENTION) versus NO ADDITIONAL COMMUNITY SERVICES ON A REGULAR/ROUTINE BASIS (BEFORE INTERVENTION) Protocol outcome 1: Hospitalisation - Actual outcome for Adults (aged 18 yrs or over): Mean all cause hospitalization at follow-up; Mean; (after intervention: 1.0 per patient; before intervention 3.6 per patient)); Risk of bias: All domain - Very high, Selection - High, Blinding - High, Incomplete outcome data - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ; - Actual outcome for Adults (aged 18 yrs or over): Mean HF-related hospitalization at follow-up; Mean; (after intervention: 0.6 per patient; before intervention: 2.0 per patient)); Risk of bias: All domain - Very high, Selection - High, Blinding - High, Incomplete outcome data - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ;	
Protocol outcomes not reported by the study	Quality of life ; Number of hospital visits ; Number of visits to accident and emergency ; Number of unscheduled admissions ; Use of community services ; Preferred and actual place of death ; Length of survival ; Staff satisfaction ; Avoidable/inappropriate admissions to ICU ; Inappropriate attempts at cardiopulmonary resuscitation ; Patient/carer reported outcomes (satisfaction) ; Preferred and actual place of care ; Length of stay

Study	**Youens 2017[238]**
Study type	Non-randomised comparative study
Number of studies (number of participants)	1 (n=28561)
Countries and setting	Conducted in Australia
Line of therapy	Not applicable
Duration of study	Intervention + follow up: 10 years
Method of assessment of guideline condition	Adequate method of assessment/diagnosis
Stratum	Adults (aged 18 yrs. or over) (inclusion criteria >1 months of age at death)
Subgroup analysis within study	Not applicable

Inclusion criteria	All decedents between January 2001 and December 2011 in whom cancer was recorded as the cause of death on the WA Cancer registry record, whose usual place of residence was within the area covered by the PCS
Exclusion criteria	Not reported
Recruitment/selection of patients	Patient data retrieved from WA Cancer registry record.
Age, gender and ethnicity	Age: <50: 1921, 50-74: 12808, 75+: 13832 Gender: Male 16016 / Female 12545
Further population details	1. Any specific population: Not applicable
Extra comments	.
Indirectness of population	No indirectness
Interventions	Additional community services on a regular/routine basis. Community based Palliative Care Service (PCS). An interdisciplinary service with teams comprising nurses, doctors, care aids, counsellors, chaplains, social workers, and volunteers, in which clinical nurses are case coordinators. Teams are available to provide care around the clock. The service focuses on alleviating physical symptoms and providing psychological and spiritual support for people with terminal illness. N=16530 No additional community services available on a regular/routine basis (usual care). Usual care. Those who did not access community based PCS. N=12031
Funding	Funding not stated

RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: ADDITIONAL COMMUNITY SERVICES ON A REGULAR/ROUTINE BASIS (AFTER INTERVENTION) versus NO ADDITIONAL COMMUNITY SERVICES ON A REGULAR/ROUTINE BASIS (BEFORE INTERVENTION)

Protocol outcome 1: Preferred and actual place of death
- Actual outcome for Adults (aged 18 yrs. or over): Place of death in hospital at follow-up; Group 1: 8421/16530, Group 2: 9130/12031 Risk of bias: All domain - Very high, Selection - High, Blinding - High, Incomplete outcome data - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: Serious indirectness
- Actual outcome for Adults (aged 18 yrs. or over): Place of death out of hospital at follow-up; Group 1: 8109/16530, Group 2: 2901/12031 Risk of bias: All domain - Very high, Selection - High, Blinding - High, Incomplete outcome data - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: Serious indirectness
Protocol outcome 2: Hospitalisation
- Actual outcome for Adults (aged 18 yrs. or over): Rate ratio all cause hospitalization at follow-up 12 months before death; 1.01 (95% 0.96-1.05) Risk of bias: All domain - Very high, Selection - High, Blinding - High, Incomplete outcome data - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness
- Actual outcome for Adults (aged 18 yrs. or over): Rate ratio all cause unplanned hospitalization at follow-up 12 months before death; 0.94 (95% 0.91-0.97) Risk of bias: All domain - Very high, Selection - High, Blinding - High, Incomplete outcome data - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness
- Actual outcome for Adults (aged 18 yrs. or over): Rate ratio all cause ED presentations at follow-up 12 months before death; 0.92 (95% 0.89-0.96) Risk of bias: All

domain - Very high, Selection - High, Blinding - High, Incomplete outcome data - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness Protocol outcome 3: Length of stay - Actual outcome for Adults (aged 18 yrs. or over): Mean length of stay (days) for inpatient hospitalisation at follow-up 12 months before death; -4.19 (95% -4.58 to -3.88) Risk of bias: All domain - Very high, Selection - High, Blinding - High, Incomplete outcome data - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness	
Protocol outcomes not reported by the study	Quality of life ; Use of community services ; Length of survival ; Staff satisfaction ; Avoidable/inappropriate admissions to ICU ; Inappropriate attempts at cardiopulmonary resuscitation ; Patient/carer reported outcomes (satisfaction) ; Preferred and actual place of care

D.2 Availability of additional community services in an acute/emergency scenario

	Aoun 2013[9]
Study type	RCT (Patient randomised; Parallel)

	Aoun 2013[9]
Number of studies (number of participants)	1 (n=58)
Countries and setting	Conducted in Australia; Setting: Silver Chain Hospice Service
Line of therapy	Not applicable
Duration of study	Intervention + follow up: Data collection 18 months
Method of assessment of guideline condition	Adequate method of assessment/diagnosis
Stratum	Adults (aged 18 years or over)
Subgroup analysis within study	Not applicable
Inclusion criteria	Cancer or non-cancer diagnosis requiring home-based palliative care, living at home alone, no family carer, understanding and speaking English, no cognitive impairment (clinical judgement of the nurse), no personal alarm at home, telephone landline (if randomised to the PA group
Exclusion criteria	NA
Recruitment/selection of patients	Potential participants were identified from the Silver Chain Hospice Care Service, the largest provider of home-based palliative care in Western Australia
Age, gender and ethnicity	Age - Other: not stated. Gender (M:F): 22/21. Ethnicity:
Further population details	1. Any specific population: Not stated / Unclear
Extra comments	Patients were terminally ill. NB data on the CA group has been extracted for Q12
Indirectness of population	No indirectness
Interventions	(n=19) Intervention 1: Availability of additional community services in an acute/emergency scenario - Additional community services in acute/emergency scenario. People in the personal alarm group (PA) were provided with a button that the patient would press in an emergency. Currently, patients who are considered at risk are advised to have a PA for which they must pay. The alarm is connected to the SCHCS call centre so that when the patient activates the alarm, a SCHCS nurse responds. . Duration 3 months. Concurrent medication/care: Not stated (n=20) Intervention 2: No additional community services available in acute/emergency scenario (usual care) - Usual care. Standard care: patients received the same care as patients who had a carer (they were not treated any differently because they were alone). SC is provided by an interdisciplinary team comprising general practitioners with a special interest in palliative care, palliative care specialist nurses, counsellors, chaplains, CAs, social workers and volunteers, who work with the patients to control symptoms or address psychosocial needs. Typically, nurses visit patients weekly or fortnightly and CAs visit one to three times per week depending on patients' needs.. Duration 3 months. Concurrent medication/care: not stated

	Aoun 2013[9]
Funding	Academic or government funding (Australian research council linkage grant, Silver chain hospice care service and Mandurah Rotary Club)
RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: ADDITIONAL COMMUNITY SERVICES IN ACUTE/EMERGENCY SCENARIO (PERSONAL ALARM) versus USUAL CARE Protocol outcome 1: Quality of life - Actual outcome for Adults (aged 18 years or over): QoL Index at 12 weeks; Median (range) for CA and control group, respectively: 6 (2-10); 5 (0-9); Risk of bias: All domain - Very high, Selection - Low, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ; Baseline details: CA group was more likely to receive regular help from visiting adults or children; Protocol outcome 2: Patient/carer reported outcomes (satisfaction) - Actual outcome for Adults (aged 18 years or over): Patients' satisfaction with QoL at 12 weeks; Median (range) for CA and control group, respectively: 5.5 (3-10); 5 (0-9); Risk of bias: All domain - Very high, Selection - Low, Blinding - High, Incomplete outcome data - High, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ; Baseline details: CA group was more likely to receive regular help from visiting adults or children;	
Protocol outcomes not reported by the study	Hospitalisation ; Number of hospital visits ; Number of visits to accident and emergency ; Number of unscheduled admissions ; Use of community services ; Preferred and actual place of death ; Length of survival ; Staff satisfaction ; Avoidable/inappropriate admissions to ICU ; Inappropriate attempts at cardiopulmonary resuscitation ; Preferred and actual place of care ; Length of stay

Study (subsidiary papers)	**Casarett, 2015[41]**
Study type	Non-randomised comparative study
Number of studies (number of participants)	1 (n=24658)
Countries and setting	Conducted in U.S.; Setting: Patient data were extracted from the electronic medical records of 11 hospices in the Coalition of Hospices Organized to Investigate Comparative Effectiveness (CHOICE) network
Line of therapy	Not applicable
Duration of study	Intervention + follow up: January 1, 2008 and May 15, 2012
Method of assessment of guideline condition	Adequate method of assessment/diagnosis

Study (subsidiary papers)	**Casarett, 2015[41]**
Stratum	Adults (aged 18 years or over):
Subgroup analysis within study	Not applicable:
Inclusion criteria	Patients were included if they were admitted to a participating hospice between January 1, 2008 and May 15, 2012.
Exclusion criteria	Not reported
Recruitment/selection of patients	Patient data were extracted from the electronic medical records of 11 hospices in the Coalition of Hospices Organized to Investigate Comparative Effectiveness (CHOICE) network.
Age, gender and ethnicity	Age - Mean: continuous 78, routine 77.8. Gender (M:F): 40/60%. Ethnicity: Not stated
Further population details	1. Any specific population: Not applicable
Extra comments	NA
Indirectness of population	No indirectness
Interventions	Additional community services available in an acute/emergency scenario. Continuous hospice care. Continuous care provides more intensive staffing, of which at least 50% of care hours must be for a licensed nurse. N=8524 Usual care. At a minimum, hospice provides routine home care, which constitutes the majority of hospice days. This level of care provides the services of a visiting nurse and other disciplines, who typically visit several times per week. N=16134
Funding	Funded by National Institutes of Health grant
RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: RAPID RESPONSE TEAM (RRS USERS) versus USUAL CARE (RRS NON-USERS) Protocol outcome 1: Preferred and actual place of death - Actual outcome for Adults (aged 18 years or over): Place of death was inpatient hospice (actual place of death) at end of follow-up; Group 1: 350/8524, Group 2: 2030/16134; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: Serious indirectness	
Protocol outcomes not reported by the study	Hospitalisation ; Number of hospital visits ; Number of unscheduled admissions ; Length of survival ; Staff satisfaction ; Avoidable/inappropriate admissions to ICU ; Inappropriate resuscitation ; Length of stay

Study (subsidiary papers)	**Gage 2015[81] (Holdsworth 2015[101])**
Study type	Non-randomised comparative study

Study (subsidiary papers)	Gage 2015[81] (Holdsworth 2015[101])
Number of studies (number of participants)	1 (n=688)
Countries and setting	Conducted in United Kingdom; Setting: Pilgrims Hospice services, delivered by 3 centers serving contiguous communities (total population of 600 000) in the county of Kent, UK.
Line of therapy	Not applicable
Duration of study	Intervention + follow up: 18 months (2010-11)
Method of assessment of guideline condition	Adequate method of assessment/diagnosis
Stratum	Adults (aged 18 years or over):
Subgroup analysis within study	Not applicable:
Inclusion criteria	Patients newly referred to the hospice services (provided by three centres). Family carers were included if they were the primary carer for a patient included in the analysis. Only one carer was selected for each patient.
Exclusion criteria	Patients still alive at the end of the 18 month collection period (as outcomes unknown). Patients already registered with the hospice when the RSS was introduced (because they crossed between control and intervention conditions). Amongst eligible patients, those without a recorded preferred place of death (PPD) in the hospice notes were excluded from the analysis.
Recruitment/selection of patients	Hospice database accessed retrospectively.
Age, gender and ethnicity	Age - Mean (SD): RRS users and RRS non-users, respectively: 73.1 (81.23), 69.1 (76.50); RRS available and not available, respectively: 75.09 (11.52), 74.06 (11.96). Gender (M:F): RRS users and non-users: 388/300; RRS available and RRS not available: 548. Ethnicity: Not stated
Further population details	1. Any specific population: Not applicable
Extra comments	Baseline characteristics (n) for RRS users and RRS non-users, respectively: initial preferred place of death home 190, 227; care home 2, 47; hospice 52, 158; hospital 0, 4; other 3, 5; final preferred place of death home 184, 221; care home 4, 47; hospice 58, 164; hospital 0, 4; other 2, 5. . Baseline characteristics (n) for RRS available and RRS not available groups, respectively: diagnosis cancer 617, 239; non-cancer 70, 26; unknown 1, 0; initial preferred place of death home 426, 126; care home 40, 14; hospice 210, 121; hospital 4, 0; other 8, 4; Baseline characteristics (mean (CI)) for carers of RRS available group (n=48)and carers of RRS not available group (n=16), respectively:SF-12 Physical 47.77(44.27-58.54), 46.41(44.27-48.54); SF-12 Mental 39.91(38.24-41.60), 35.27(33.46-37.07); EQ-5D 0.75(0.71-0.78), 0.63(0.58-0.69). The study followed a randomised stepped wedge design. The new rapid response service was rolled out sequentially to three areas (order determined randomly using a simple probabilistic model), starting January 2010, with 6 months between the start of provision in each area. Once available in any area, any patient referred to the hospice in that area could access the RRS, although not all patients did. A comparison of the

Study (subsidiary papers)	Gage 2015[81] (Holdsworth 2015[101])
	intervention (when RRS was provided) and control (no RRS available) is reported in the Holdsworth 2015 paper. Gage 2015 focusses on the time when the RRS was available in each area, and a comparison of the people using it (RRS users) versus those who did not (RRS non-users).
Indirectness of population	No indirectness
Interventions	(n=247) Intervention 1: Out of hours service. Type: Rapid response service. Team: team of experienced healthcare assistants who were trained by the hospice and supported by the full hospice interdisciplinary team. The service has access to a service coordinator, medical advice and equipment. Description: to provide intense care over relatively short periods when crises arise, and work alongside regular domiciliary services that offer long term support, to help avoid admission to hospice or hospital. The team responds rapidly 24/7 to crisis in patient's homes (including care homes). Hand-on-care is provided in coordination with other community services.. Duration 18 months. Concurrent medication/care: Regular domiciliary services that offer long term support. (n=441) Intervention 2: Out of hours service. Usual care. Duration 18 months. Concurrent medication/care: Usual care (n=688) Intervention 3: Out of hours service. Type: Rapid response service. Team: team of experienced healthcare assistants who were trained by the hospice and supported by the full hospice interdisciplinary team. The service has access to a service coordinator, medical advice and equipment. Description: to provide intense care over relatively short periods when crises arise, and work alongside regular domiciliary services that offer long term support, to help avoid admission to hospice or hospital. The team responds rapidly 24/7 to crisis in patient's homes (including care homes). Hand-on-care is provided in coordination with other community services.. Duration 18 months. Concurrent medication/care: Usual care Comments: Only 36% (247) of patients in the intervention group accessed the rapid response service. (n=265) Intervention 4: Out of hours service. Usual care. Duration 18 months. Concurrent medication/care: Usual care (n=48) Intervention 5: Out of hours service. Type: Rapid response service. Team: team of experienced healthcare assistants who were trained by the hospice and supported by the full hospice interdisciplinary team. The service has access to a service coordinator, medical advice and equipment. Description: to provide intense care over relatively short periods when crises arise, and work alongside regular domiciliary services that offer long term support, to help avoid admission to hospice or hospital. The team responds rapidly 24/7 to crisis in patient's homes (including care homes). Hand-on-care is provided in coordination with other community services.. Duration 18 months. Concurrent medication/care: Usual care

Study (subsidiary papers)	Gage 2015[81] (Holdsworth 2015[101])
	(n=16) Intervention 6: Out of hours service. Usual care. Duration 18 months. Concurrent medication/care: Usual care
Funding	Academic or government funding (Independent research funded by the National Institute for Health Research (NIHR) under its Research for Patient Benefit programme. The study was sponsored by East Kent hospitals University NHS Foundation Trust and supported by the Kent and Medway Comprehensive Local Research Network. The service was funded by NHS Kent and Medway.)

RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: RAPID RESPONSE TEAM (RRS USERS) versus USUAL CARE (RRS NON-USERS)

Protocol outcome 1: Number of visits to accident and emergency
- Actual outcome for Adults (aged 18 years or over): N with ≥ 1 contact with acute care (visits to hospital A&E, inpatients nights, outpatient appointments, day hospital visits) at time between referral to hospice and death; Group 1: 129/247, Group 2: 249/441; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ; Baseline details: No significant differences with respect to mean age, days in study and sex; however, users were significantly more likely than non-users to want to die at home and actually die at home; Key confounders: sex, age, live at home alone or with carer (vs live in care home), Area 2 or 3 (vs Area 1), number of days in study; Group 1 Number missing: 0; Group 2 Number missing: 7, Reason: actual place of death not known

Protocol outcome 2: Use of community services
- Actual outcome for Adults (aged 18 years or over): N with ≥ 1 contact with GP/all primary care (visits to surgery to see GP or practice nurse, and home visits by GP) at time between referral to hospice and death; Group 1: 139/159, Group 2: 192/267; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ; Baseline details: No significant differences with respect to mean age, days in study and sex; however, users were significantly more likely than non-users to want to die at home and actually die at home; Key confounders: sex, age, live at home alone or with carer (vs live in care home), Area 2 or 3 (vs Area 1), number of days in study; Group 1 Number missing: 0; Group 2 Number missing: 7, Reason: actual place of death not known- Actual outcome for Adults (aged 18 years or over): N with ≥ 1 contact with community care (visits and telephone calls to patients by community nurse, long term condition team, intermediate care teams, community matrons) at time between referral to hospice and death; Group 1: 223/247, Group 2: 306/441; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ; Baseline details: No significant differences with respect to mean age, days in study and sex; however, users were significantly more likely than non-users to want to die at home and actually die at home; Key confounders: sex, age, live at home alone or with carer (vs live in care home), Area 2 or 3 (vs Area 1), number of days in study; Group 1 Number missing: 0; Group 2 Number missing: 7, Reason: actual place of death not known

- Actual outcome for Adults (aged 18 years or over): N with ≥ 1 contact with Marie Curie visits (Marie Curie health care assistants or registered nurse visits - each lasted 8 hours (overnight sitting)) at time between referral to hospice and death; Group 1: 33/247, Group 2: 6/441; Risk of bias: All domain - High,

Study (subsidiary papers)	Gage 2015[81] (Holdsworth 2015[101])

Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ; Baseline details: No significant differences with respect to mean age, days in study and sex; however, users were significantly more likely than non-users to want to die at home and actually die at home; Key confounders: sex, age, live at home alone or with carer (vs live in care home), Area 2 or 3 (vs Area 1), number of days in study; Group 1 Number missing: 0; Group 2 Number missing: 7, Reason: actual place of death not known

- Actual outcome for Adults (aged 18 years or over): N with ≥ 1 contact with out of hours services (out of hours home visits by GP or nurse, telephone advice by GP, 'walk-in' attendances and ambulance responses) at time between referral to hospice and death; Group 1: 99/247, Group 2: 84/441; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ; Baseline details: No significant differences with respect to mean age, days in study and sex; however, users were significantly more likely than non-users to want to die at home and actually die at home; Key confounders: sex, age, live at home alone or with carer (vs live in care home), Area 2 or 3 (vs Area 1), number of days in study; Group 1 Number missing: 0; Group 2 Number missing: 7, Reason: actual place of death not known

- Actual outcome for Adults (aged 18 years or over): N with ≥ 1 contact with hospice (not RRS: home or outpatient contacts with hospice nurses, doctors, allied health professionals, social workers, chaplain, inpatient stays, day hospice attendances for complementary therapies) at time between referral to hospice and death; Group 1: 247/247, Group 2: 441/441; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ; Baseline details: No significant differences with respect to mean age, days in study and sex; however, users were significantly more likely than non-users to want to die at home and actually die at home; Key confounders: sex, age, live at home alone or with carer (vs live in care home), Area 2 or 3 (vs Area 1), number of days in study; Group 1 Number missing: 0; Group 2 Number missing: 7, Reason: actual place of death not known

- Actual outcome for Adults (aged 18 years or over): N with ≥ 1 social service received (for example, domiciliary help, meals) at time between referral to hospice and death; Group 1: 40/247, Group 2: 60/441; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ; Baseline details: No significant differences with respect to mean age, days in study and sex; however, users were significantly more likely than non-users to want to die at home and actually die at home; Key confounders: sex, age, live at home alone or with carer (vs live in care home), Area 2 or 3 (vs Area 1), number of days in study; Group 1 Number missing: 0; Group 2 Number missing: 7, Reason: actual place of death not known

Protocol outcome 3: Preferred and actual place of death
- Actual outcome for Adults (aged 18 years or over): Achieved preferred place of death (using initial place of death) at end of follow-up; Group 1: 171/247, Group 2: 257/434; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ; Baseline details: No significant differences with respect to mean age, days in study and sex; however, users were significantly more likely than non-users to want to die at home and actually die at home; Key confounders: sex, age, live at home alone or with carer (vs live in care home), Area 2 or 3 (vs Area 1), number of days in study; Group 1 Number missing: 0; Group 2

Study (subsidiary papers)	Gage 2015[81] (Holdsworth 2015[101])

Number missing: 7, Reason: actual place of death not known

RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: AVAILABILITY OF RAPID RESPONSE TEAM (RRS AVAILABLE) versus USUAL CARE (RRS NOT AVAILABLE)

Protocol outcome 1: Preferred and actual place of death
- Actual outcome for Adults (aged 18 years or over): Achieved preferred place of death (using initial place of death) at end of follow-up; Group 1: 429/688, Group 2: 164/265; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ; Baseline details: Significant differences were observed between the intervention and control groups in terms of preferred place of death; Key confounders: weighted logistic regression adjusting for PPD, occupancy status and time in the study, weighted by sampling proportions in each centre at each time point in order to adjust for both potential cluster effects and differences in allocated group sizes.; Group 1 Number missing: 0; Group 2 Number missing: 0

- Actual outcome for Adults (aged 18 years or over): Achieved preferred place of death (using final place of death) at end of follow-up; Group 1: 454/688, Group 2: 185/265; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ; Baseline details: Significant differences were observed between the intervention and control groups in terms of preferred place of death; Key confounders: weighted logistic regression adjusting for PPD, occupancy status and time in the study, weighted by sampling proportions in each centre at each time point in order to adjust for both potential cluster effects and differences in allocated group sizes.; Group 1 Number missing: 0; Group 2 Number missing: 0

RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: AVAILABILITY OF RAPID RESPONSE TEAM (RRS AVAILABLE - CARERS) versus USUAL CARE (RRS NOT AVAILABLE - CARERS)

Protocol outcome 1: Quality of life
- Actual outcome for Adults (aged 18 years or over): Carers SF-12 Mental at 8 months; Group 1: mean 41.54 (SD 7.82); n=48, Group 2: mean 46.47 (SD 4.35); n=16; SF12 0-100 Top=High is good outcome; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ; Baseline details: Significant differences were observed between the intervention and control groups in terms of preferred place of death; Key confounders: Carers outcomes were analysed using a weighted linear regression model adjusting for baseline covariates and caregiver demand.; Group 1 Number missing: 0; Group 2 Number missing: 0

- Actual outcome for Adults (aged 18 years or over): Carers SF-12 Physical at 8 months; Group 1: mean 46.13 (SD 7.27); n=48, Group 2: mean 44.27 (SD 4.03); n=16; SF12 0-100 Top=High is good outcome; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ; Baseline details: Significant differences were observed between the intervention and control groups in terms of preferred place of death; Key confounders: Carers outcomes were analysed using a

Study (subsidiary papers)	Gage 2015[81] (Holdsworth 2015[101])
weighted linear regression model adjusting for baseline covariates and caregiver demand.; Group 1 Number missing: 0; Group 2 Number missing: 0 - Actual outcome for Adults (aged 18 years or over): Carers EQ5D at 8 months; Group 1: mean 0.72 (SD 0.17); n=48, Group 2: mean 0.77 (SD 0.09); n=16; EQ5D 0-1 Top=High is good outcome; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness ; Baseline details: Significant differences were observed between the intervention and control groups in terms of preferred place of death; Key confounders: Carers outcomes were analysed using a weighted linear regression model adjusting for baseline covariates and caregiver demand.; Group 1 Number missing: 0; Group 2 Number missing: 0	
Protocol outcomes not reported by the study	Hospitalisation ; Number of hospital visits ; Number of unscheduled admissions ; Length of survival ; Staff satisfaction ; Avoidable/inappropriate admissions to ICU ; Inappropriate resuscitation ; Length of stay

Study	Mccaffrey 2013[146]
Study type	RCT (Patient randomised; Parallel)
Number of studies (number of participants)	1 (n=31)
Countries and setting	Conducted in Australia; Setting: South Western Sydney Local Health District Palliative Care team
Line of therapy	Unclear
Duration of study	Intervention + follow up: 28 days
Method of assessment of guideline condition	Adequate method of assessment/diagnosis
Stratum	Adults (aged 18 years or over)
Subgroup analysis within study	Not applicable
Inclusion criteria	1) patient of the palliative care team s) GP currently involved in care at home or willing to be involved in such care on discharge from hospital, 3) patients with advanced cancer or other life limiting illness who prefer care to be delivered at home and/or a home death, 4) patient lives with caregiver or will have a caregiver on discharge, 5) ability to communicate sufficiently in English or have a caregiver or family member who can communicate in English and assist them to complete assessment, 6) written informed consent, 7) age >17 years, 8) at least one of the following criteria: a) a patient with a complex and unstable symptom management and high care needs, whose clinician thinks readmission to hospital may be prevented by the package, b) a patient with complex and unstable symptom management and high care needs currently admitted in acute hospital/palliative care unit who may not be discharged without comprehensive community services, c) a patient wishing to receive end of life care (anticipated to be within 72hrs duration) at home
Exclusion criteria	not stated
Recruitment/selection of patients	patients had to be known to the palliative care team through inpatient consultancy, palliative care unit or

Study	Mccaffrey 2013[146]
	community care
Age, gender and ethnicity	Age - Mean (SD): 63.6(15.8). Gender (M:F): 18/13. Ethnicity:
Further population details	1. Any specific population: Not applicable
Extra comments	.
Indirectness of population	No indirectness
Interventions	(n=23) Intervention 1: Availability of additional community services in an acute/emergency scenario - Additional community services in acute/emergency scenario. Palliative Care Extended Packages at Home (PEACH): individualised care package. Services are rapidly mobilised, essential equipment is secured, allied health is coordinated and higher intensity nursing is provided (up to 24h/day for up to 5 days) compared with usual care. Duration up to 5 days. Concurrent medication/care: not stated. (n=8) Intervention 2: No additional community services available in acute/emergency scenario (usual care) - Usual care. Usual care encompassed conventional discharge planning with existing community services including specialist palliative care, access to an after-hours number, and equipment from loan pools . Duration up to 5 days. Concurrent medication/care: not stated
Funding	Academic or government funding (Australian government department of health and ageing under the national palliative care program, 'palliative care for people at home'. One of the authors was also funded through the national palliative care program and Flinders University)
RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: ADDITIONAL COMMUNITY SERVICES IN ACUTE/EMERGENCY SCENARIO (PEACH) versus USUAL CARE Protocol outcome 1: Preferred and actual place of death - Actual outcome for Adults (aged 18 years or over): Number of people dying at home at 28 days; Group 1: 9/16, Group 2: 4/5; Risk of bias: All domain - Very high, Selection - High, Blinding - High, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Comments - fewer people than the whole sample are analysed because not everyone died; Indirectness of outcome: Serious indirectness, Comments: No details on preference; Group 1 number missing: 7, Group 2 number missing: 3	
Protocol outcomes not reported by the study	Quality of life ; Hospitalisation ; Number of hospital visits ; Number of visits to accident and emergency ; Number of unscheduled admissions ; Use of community services ; Length of survival ; Staff satisfaction ; Avoidable/inappropriate admissions to ICU ; Inappropriate attempts at cardiopulmonary resuscitation ; Patient/carer reported outcomes (satisfaction) ; Preferred and actual place of care ; Length of stay

Study	Purdy 2015[186]
Study type	Non-randomised comparative study
Number of studies (number of participants)	1 (n=Six months)
Countries and setting	Conducted in United Kingdom; Setting: Somerset (Out of hours) and North Somerset
Line of therapy	Adjunctive to current care
Duration of study	Intervention time: Six months
Method of assessment of guideline condition	Adequate method of assessment/diagnosis
Stratum	Adults (aged 18 years or over)
Subgroup analysis within study	Not applicable
Inclusion criteria	See population
Exclusion criteria	None reported
Age, gender and ethnicity	Age - Mean (SD): Somerset (out of hours) 77.3 (12.5) years North Somerset 79.4 (10.7). Gender (M:F): Somerset (out of hours) 49& North Somerset 51%. Ethnicity: Not reported
Further population details	1. Any specific population: Not applicable
Extra comments	People who died between Sep 2011 and Feb 2012 in North Somerset and Somerset whose death were expected and potentially eligible for end of life care according to the criteria derived by the UK National End of Life Care Intelligence Network. Commonest causes of death were cancer, heart disease, respiratory disease and dementia
Indirectness of population	No indirectness
Interventions	(n=616) Intervention 1: Out of hour's service. Users of a Delivering Choice Programme (DCP) in Somerset that included: Out of hours advice and response lines manned by specialist nurses from 5pm to 1pm weekends and bank holidays who responded to calls from professionals, family carers and patients Two front of house hospital-based discharge nurses who identified patients who wanted a non-hospital death and facilitated fast discharges accordingly Two end of life care coordinators that took referrals from community, hospital and hospice staff to organise packages of care including equipment, night nurses and personal carers. These services were supported by an electronic end of life care register to record advance care wishes . Duration Six months. Concurrent medication/care: Not stated (n=213) Intervention 2: Out of hours service. Users of the Delivering Care Program in North Somerset which

Study	Purdy 2015[186]
	did not include the out of hours service or the discharge nurses. Duration Six months. Concurrent medication/care: None stated (n=1956) Intervention 3: Out of hours service. Usual care (not described). Duration Six months. Concurrent medication/care: None stated
Funding	Other (Marie Curie Cancer and the MRC)

RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: DELIVERING CHOICE PROGRAMME (WITH OUT OF HOURS) USERS versus DELIVERING CHOICE PROGRAMME (WITHOUT OUT OF HOURS) USERS

Protocol outcome 1: Number of hospital visits
- Actual outcome for Adults (aged 18 years or over): Patients with one or more emergency admissions < 30 days at Admissions in last 30 days of life; Group 1: 233/616, Group 2: 61/213; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness
- Actual outcome for Adults (aged 18 years or over): Mean emergency admissions per patients < 30 days at Admissions in last 30 days of life; Group 1: mean 0.53 (SD 0.69); n=616, Group 2: mean 0.31 (SD 0.52); n=213; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness
- Actual outcome for Adults (aged 18 years or over): Mean number of emergency admissions per patient < 7 days at Admissions in last seven days of life; Group 1: mean 0.11 days (SD 0.33); n=616, Group 2: mean 0.07 days (SD 0.27); n=213; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness
- Actual outcome for Adults (aged 18 years or over): Patients with one or more emergency admissions < 7 days at Admissions in last seven days of life; Group 1: 60/616, Group 2: 13/213; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness

Protocol outcome 2: Number of visits to accident and emergency
- Actual outcome for Adults (aged 18 years or over): Patients with one or more ED attendance < 30 days at Admissions in the last 30 days of life; Group 1: 159/616, Group 2: 54/213; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness
- Actual outcome for Adults (aged 18 years or over): Mean ED attendance per patient < 30 days at Admissions in last 30 days of life; Group 1: mean 0.39 (SD 0.51); n=616, Group 2: mean 0.27 (SD 0.5); n=213; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness
- Actual outcome for Adults (aged 18 years or over): Patients with one or more ED attendance < 7 days at Admissions in last 7 days of life; Group 1: 43/616, Group 2: 13/213; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness
- Actual outcome for Adults (aged 18 years or over): Mean ED attendance per patients< 7 days at Admissions in last 7 days of life; Group 1: mean 0.07

Study	Purdy 2015[186]
days (SD 0.27); n=616, Group 2: mean 0.07 days (SD 0.29); n=213; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness Protocol outcome 3: Preferred and actual place of death - Actual outcome for Adults (aged 18 years or over): Place of death - acute hospital at Not applicable; Group 1: 84/616, Group 2: 40/213; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: Serious indirectness - Actual outcome for Adults (aged 18 years or over): Place of death - home at Not applicable; Group 1: 337/616, Group 2: 88/213; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: Serious indirectness - Actual outcome for Adults (aged 18 years or over): Place of death - care home (not usual place of residence) at Not applicable; Group 1: 58/616, Group 2: 34/213; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: Serious indirectness - Actual outcome for Adults (aged 18 years or over): Place of death - hospice at Not applicable; Group 1: 98/616, Group 2: 34/213; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: Serious indirectness - Actual outcome for Adults (aged 18 years or over): Place of death - elsewhere at Not applicable; Group 1: 8/616, Group 2: 17/213 Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: Serious indirectness RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: DELIVERING CHOICE PROGRAMME (WITH OUT OF HOURS) USERS versus DELIVERY CHOICE PROGRAMME (WITH OUT OF HOURS) NON-USERS Protocol outcome 1: Number of hospital visits - Actual outcome for Adults (aged 18 years or over): Patients with one or more emergency admissions < 30 days at Admissions in last 30 days of life; Group 1: 233/616, Group 2: 875/1956; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness - Actual outcome for Adults (aged 18 years or over): Mean emergency admissions per patients < 30 days at Admissions in last 30 days of life; Group 1: mean 0.53 (SD 0.69); n=616, Group 2: mean 0.54 (SD 0.64); n=1956; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness - Actual outcome for Adults (aged 18 years or over): Patients with one or more emergency admissions < 7 days at Admissions in last seven days of life; Group 1: 60/616, Group 2: 467/1956; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness - Actual outcome for Adults (aged 18 years or over): Mean number of emergency admissions per patient < 7 days at Admissions in last seven days of life; Group 1: mean 0.11 (SD 0.33); n=616, Group 2: mean 0.25 (SD 0.46); n=1956; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness	

Study	Purdy 2015[186]
Protocol outcome 2: Number of visits to accident and emergency - Actual outcome for Adults (aged 18 years or over): Patients with one or more ED attendance < 30 days at Admissions in the last 30 days of life; Group 1: 159/616, Group 2: 712/1956; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness - Actual outcome for Adults (aged 18 years or over): Mean ED attendance per patient < 30 days at Admissions in last 30 days of life; Group 1: mean 0.39 (SD 0.51); n=616, Group 2: mean 0.41 (SD 0.6); n=1956; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness - Actual outcome for Adults (aged 18 years or over): Patients with one or more ED attendance < 7 days at Admissions in last 7 days of life; Group 1: 43/616, Group 2: 432/1956; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness - Actual outcome for Adults (aged 18 years or over): Mean ED attendance per patients< 7 days at Admissions in last 7 days of life; Group 1: mean 0.07 (SD 0.27); n=616, Group 2: mean 0.26 (SD 0.43); n=1956; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: No indirectness Protocol outcome 3: Preferred and actual place of death - Actual outcome for Adults (aged 18 years or over): Place of death - acute hospital at Not applicable; Group 1: 84/616, Group 2: 836/1956; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: Serious indirectness - Actual outcome for Adults (aged 18 years or over): Place of death - home at Not applicable; Group 1: 337/616, Group 2: 779/1956; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: Serious indirectness - Actual outcome for Adults (aged 18 years or over): Place of death - care home (not usual place of residence) at Not applicable; Group 1: 58/616, Group 2: 173/1956; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: Serious indirectness - Actual outcome for Adults (aged 18 years or over): Place of death - hospice at Not applicable; Group 1: 98/616, Group 2: 55/1956; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: Serious indirectness - Actual outcome for Adults (aged 18 years or over): Place of death - community hospital at Not applicable; Group 1: 31/616, Group 2: 31/1956; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: Serious indirectness - Actual outcome for Adults (aged 18 years or over): Place of death - elsewhere at Not applicable; Group 1: 8/616, Group 2: 12/1956; Risk of bias: All domain - High, Selection - High, Blinding - Low, Incomplete outcome data - Low, Measurement - Low, Crossover - Low; Indirectness of outcome: Serious indirectness
Protocol outcomes not reported by the study	Quality of life ; Hospitalisation ; Number of unscheduled admissions ; Use of community services ; Length of survival ; Staff satisfaction ; Avoidable/inappropriate admissions to ICU ; Inappropriate resuscitation ; Length of stay

Appendix E: Forest plots

E.1 Availability of additional community services on a regular/routine basis

E.1.1 Additional community services available on a regular/routine basis versus usual care (Abel 2013)

Figure 2: Number of visits to accident and emergency (patients with ≥1 ED admission in the last year of life)

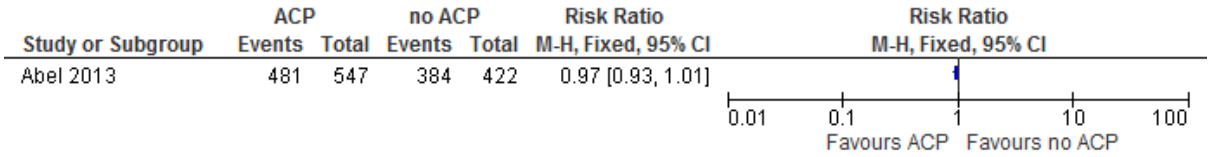


Figure 3: Length of stay (mean stay for those with or without an admission)

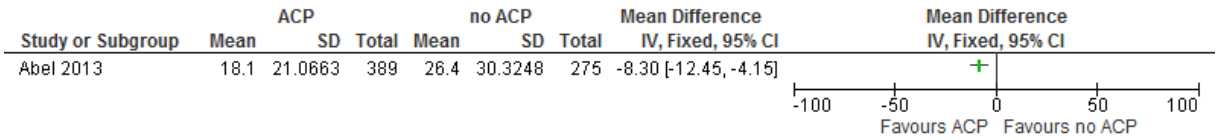


Figure 4: Hospitalisation (mean admissions)

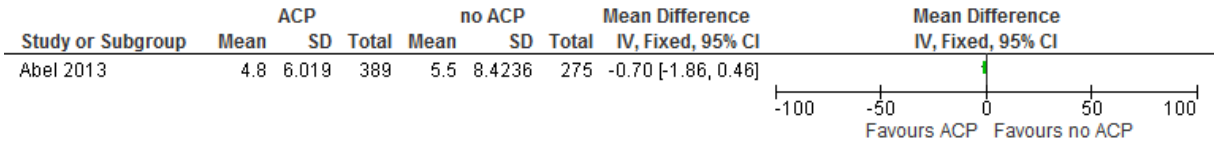
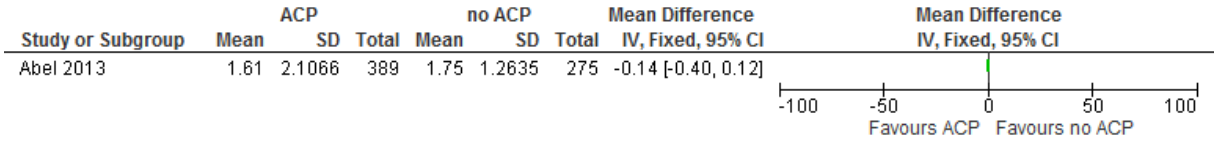


Figure 5: ED visit (mean ED admissions in the last year of life)



E.1.2 Additional community services available on a regular/routine basis versus usual care (Addington-Hall 1992)

Figure 6: Satisfaction (carers agreeing with the statement 'care was well coordinated') after bereavement

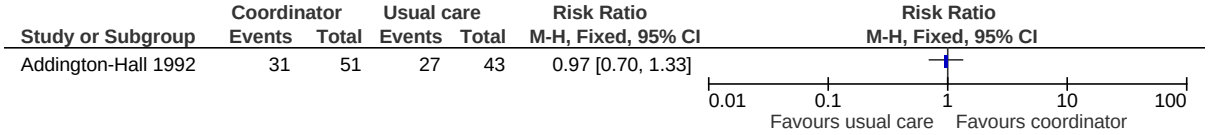


Figure 7: Satisfaction (carers satisfied with care from district nurses)

Study or Subgroup	Coordinator Events	Total	Usual care Events	Total	Risk Ratio M-H, Fixed, 95% CI
Addington-Hall 1992	33	56	27	62	1.35 [0.95, 1.94]

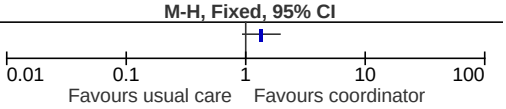


Figure 8: Satisfaction (carers satisfied with care from GPs)

Study or Subgroup	Coordinator Events	Total	Usual care Events	Total	Risk Ratio M-H, Fixed, 95% CI
Addington-Hall 1992	38	56	42	62	1.00 [0.78, 1.28]

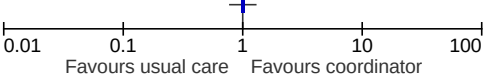


Figure 9: Satisfaction (carers satisfied with care from hospital)

Study or Subgroup	Coordinator Events	Total	Usual care Events	Total	Risk Ratio M-H, Fixed, 95% CI
Addington-Hall 1992	42	56	40	62	1.16 [0.92, 1.48]

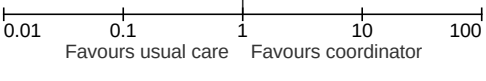


Figure 10: Satisfaction (patients satisfied with care from district nurses)

Study or Subgroup	Coordinator Events	Total	Usual care Events	Total	Risk Ratio M-H, Fixed, 95% CI
Addington-Hall 1992	63	104	40	99	1.50 [1.13, 1.99]

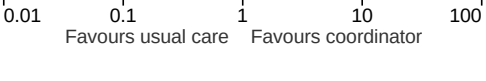


Figure 11: Satisfaction (patients satisfied with care from GPs)

Study or Subgroup	Coordinator Events	Total	Usual care Events	Total	Risk Ratio M-H, Fixed, 95% CI
Addington-Hall 1992	72	104	63	99	1.09 [0.89, 1.32]

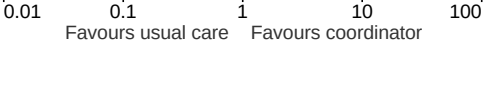


Figure 12: Satisfaction (patients satisfied with care from hospital)

Study or Subgroup	Coordinator Events	Total	Usual care Events	Total	Risk Ratio M-H, Fixed, 95% CI
Addington-Hall 1992	62	104	45	99	1.31 [1.00, 1.71]

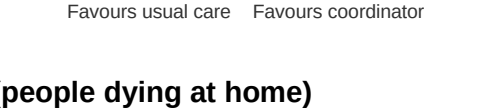


Figure 13: Preferred and actual place of death (people dying at home)

Study or Subgroup	Coordinator Events	Total	Usual care Events	Total	Risk Ratio M-H, Fixed, 95% CI
Addington-Hall 1992	17	86	14	81	1.14 [0.60, 2.17]

Figure 14: Preferred and actual place of death (people dying elsewhere, i.e. not home, hospice, hospital)

Study or Subgroup	Coordinator Events	Total	Usual care Events	Total	Risk Ratio M-H, Fixed, 95% CI
Addington-Hall 1992	2	86	2	81	0.94 [0.14, 6.53]

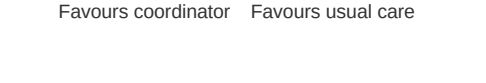


Figure 15: Preferred and actual place of death (people dying in hospice)

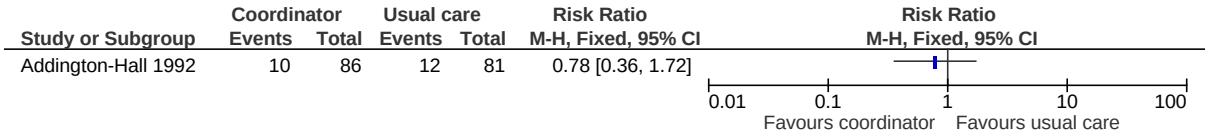
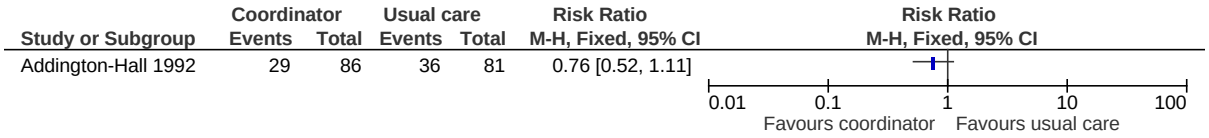


Figure 16: Preferred and actual place of death (people dying in hospital)



1

Figure 17: Use of community services (people known to occupational therapists)

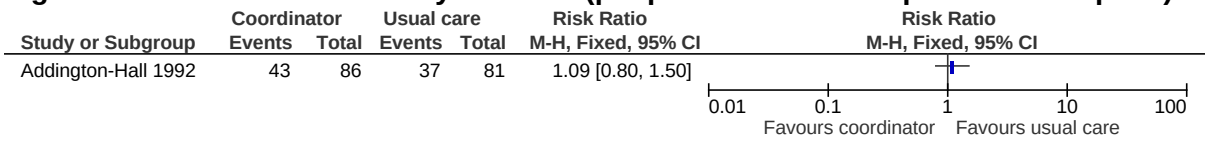


Figure 18: Use of community services (people known to social workers)

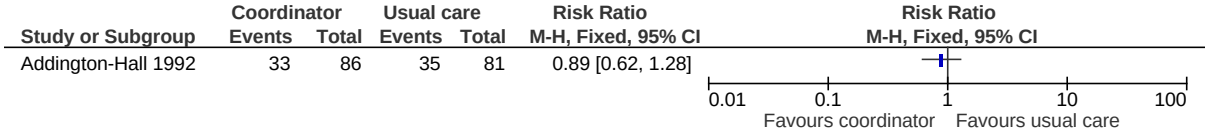
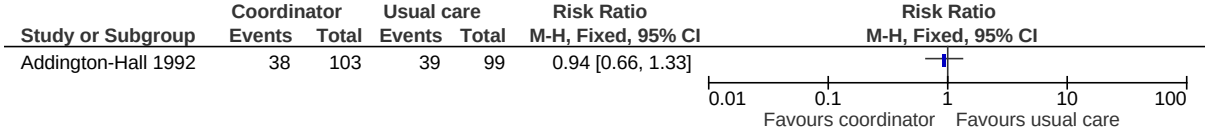


Figure 19: Use of community services (patients having contact with district nurses) 2 weeks before final interview



2

Figure 20: Use of community services (patients having contact with GP-home visits) 2 weeks before final interview

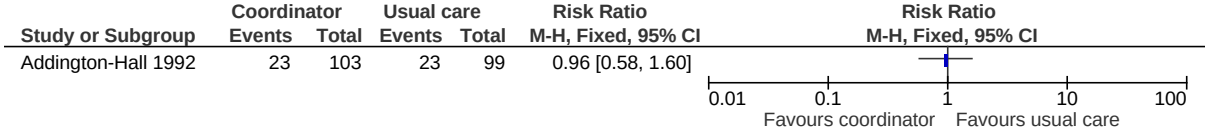


Figure 21: Use of community services (patients having contact with GP-surgery visits) 2 weeks before final interview

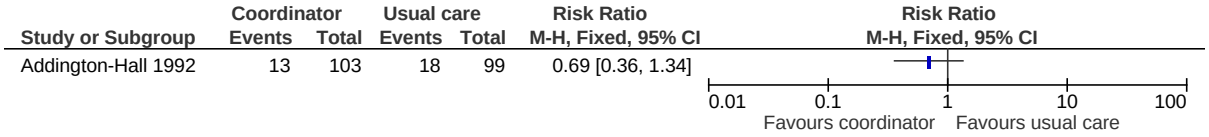


Figure 22: Use of community services (patients having contact with hospice or Macmillan nurses) 2 weeks before final interview

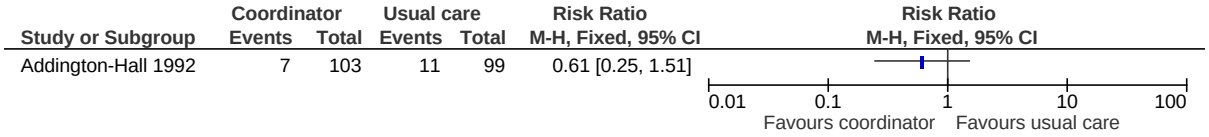


Figure 23: Use of community services (home visits – district nurses, Macmillan nurses, hospital oncology nurses, hospice homecare team)

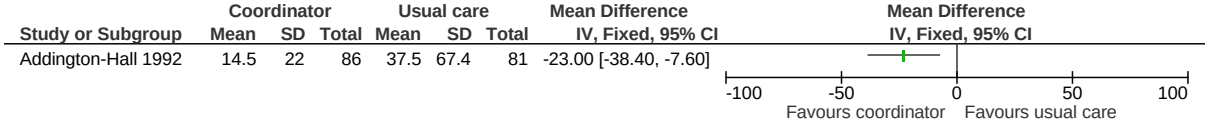


Figure 24: Hospitalisation (n of admissions)

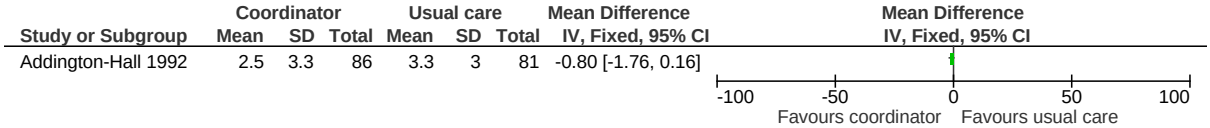


Figure 25: Length of stay (n of inpatient days)

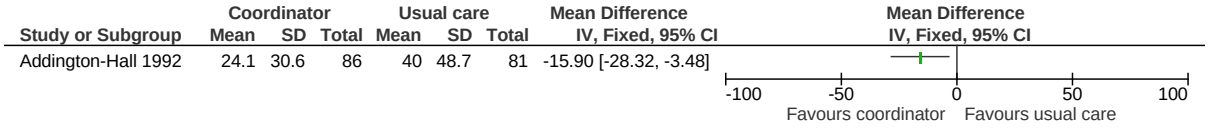
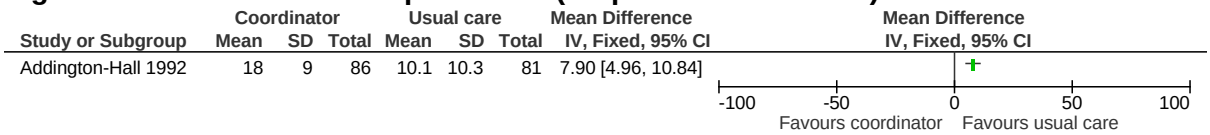


Figure 26: Number of hospital visits (outpatient attendance)



E.1.3 Additional community services available on a regular/routine basis versus usual care (Ahlner-elmqvist 2004)

Figure 27: Preferred and actual place of death (number of people dying at home)

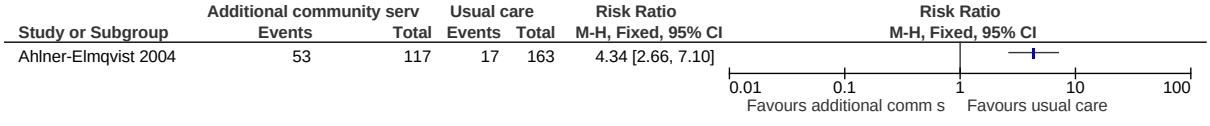


Figure 28: Preferred and actual place of death (number of people dying in hospice)

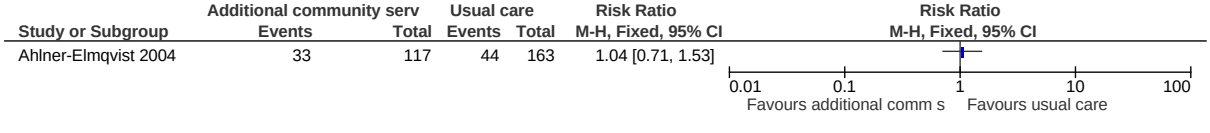
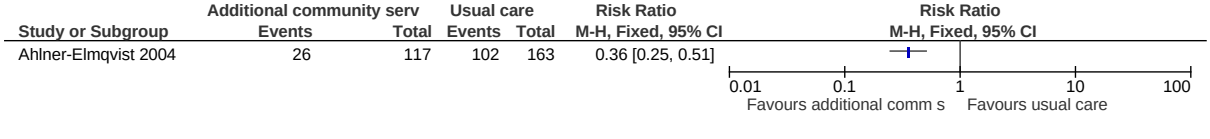
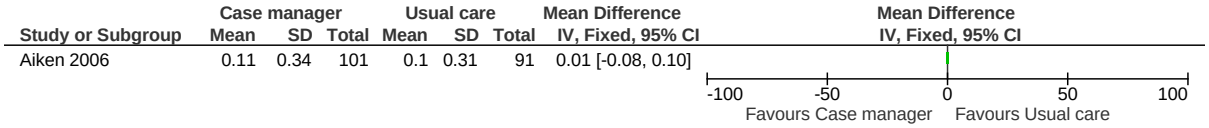


Figure 29: Preferred and actual place of death (number of people dying in hospital)



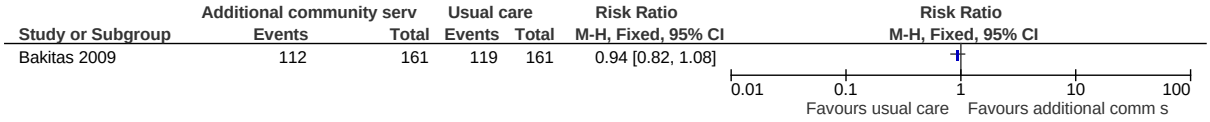
E.1.4 Additional community services available on a regular/routine basis versus usual care (Aiken 2006)

Figure 30: Number of visits to Accident and Emergency (Emergency department visits) 6 months



E.1.5 Additional community services available on a regular/routine basis versus usual care (Bakitas 2009)

Figure 31: Length of survival (number of people alive at 14.6 months)



E.1.6 Additional community services available on a regular/routine basis versus usual care (Bentur 2014)

Figure 32: ED visit (patients with ≥1 ED visit in the last 6 months of life)

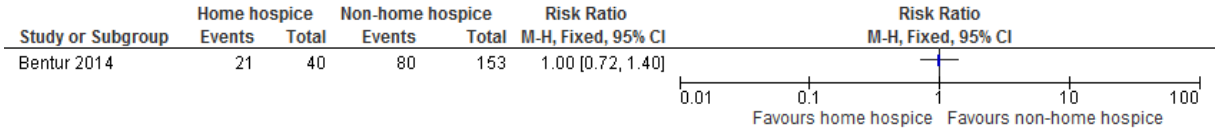


Figure 33: Hospitalisation (patients with ≥1 hospital admission in the last 6 months of life)

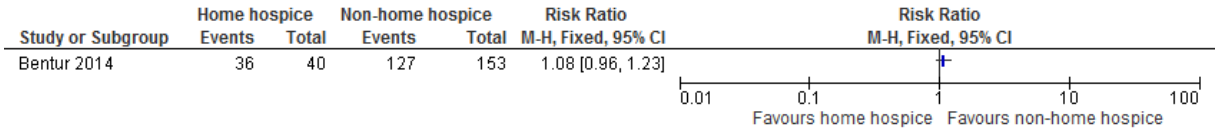
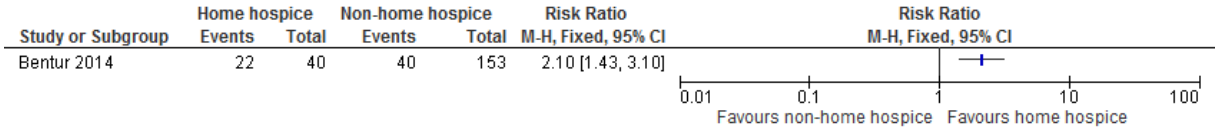


Figure 34: Preferred and actual place of death (people dying at home)



E.1.7 Additional community services available on a regular/routine basis versus usual care (Brian Cassel 2016)

Figure 35: Preferred and actual place of death (people dying in hospital – overall)

Study or Subgroup	Additional community serv Events	Total	Usual care Events	Total	Risk Ratio M-H, Fixed, 95% CI
Brian Cassel 2016	31	368	615	1075	0.15 [0.10, 0.21]

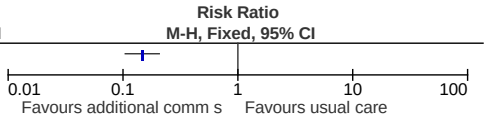


Figure 36: Inappropriate/avoidable ICU admissions (people admitted to ICU during admission) last 30 days of life

Study or Subgroup	Additional community serv Events	Total	Usual care Events	Total	Risk Ratio M-H, Fixed, 95% CI
Brian Cassel 2016	43	368	535	1075	0.23 [0.18, 0.31]

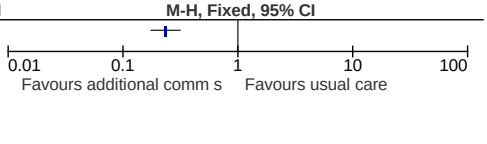


Figure 37: Unscheduled admissions (people admitted to hospital – overall) last 30 days of life

Study or Subgroup	Additional community serv Events	Total	Usual care Events	Total	Risk Ratio M-H, Fixed, 95% CI
Brian Cassel 2016	77	368	760	1075	0.30 [0.24, 0.36]

Figure 38: Hospitalisation (number of hospital days/month – cancer group) 1-18 months before death

Study or Subgroup	Additional comm services Mean	SD	Total	Usual care Mean	SD	Total	Mean Difference IV, Fixed, 95% CI
Brian Cassel 2016	0.69	1.84	37	2.62	3.44	111	-1.93 [-2.80, -1.06]

Figure 39: Hospitalisation (number of hospital days/month – COPD group) 1-18 months before death

Study or Subgroup	Additional comm services Mean	SD	Total	Usual care Mean	SD	Total	Mean Difference IV, Fixed, 95% CI
Brian Cassel 2016	0.9	1.73	65	1.89	2.31	189	-0.99 [-1.52, -0.46]

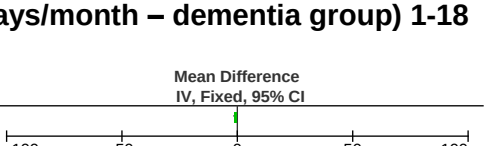


Figure 40: Hospitalisation (number of hospital days/month – dementia group) 1-18 months before death

Study or Subgroup	Additional comm services Mean	SD	Total	Usual care Mean	SD	Total	Mean Difference IV, Fixed, 95% CI
Brian Cassel 2016	0.75	2.11	92	1.68	2.56	276	-0.93 [-1.46, -0.40]

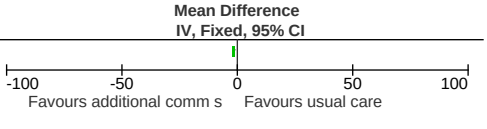


Figure 41: Hospitalisation (number of hospital days/month – heart failure group) 1-18 months before death

Study or Subgroup	Additional comm services Mean	SD	Total	Usual care Mean	SD	Total	Mean Difference IV, Fixed, 95% CI
Brian Cassel 2016	0.72	1.58	174	2.17	2.76	499	-1.45 [-1.79, -1.11]

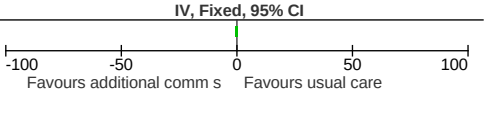


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Figure 42: Number of hospital visits (number of hospitalisation/month – cancer group) 1-18 months before death

Study or Subgroup	Additional comm services Mean	SD	Total	Usual care Mean	SD	Total	Mean Difference IV, Fixed, 95% CI
Brian Cassel 2016	0.14	0.33	37	0.39	0.4	111	-0.25 [-0.38, -0.12]

Figure 43: Number of hospital visits (number of hospitalisation/month – COPD group) 1-18 months before death

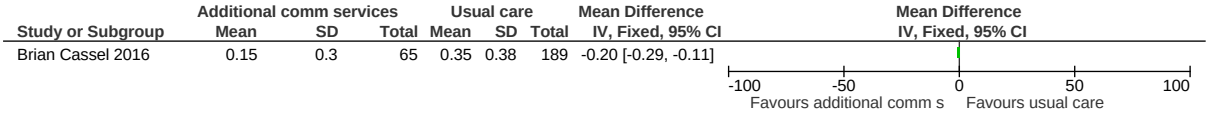


Figure 44: Number of hospital visits (number of hospitalisation/month – dementia group) 1-18 months before death

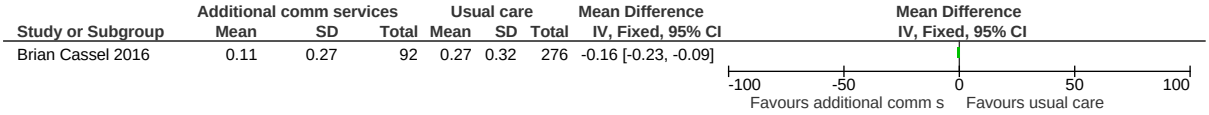
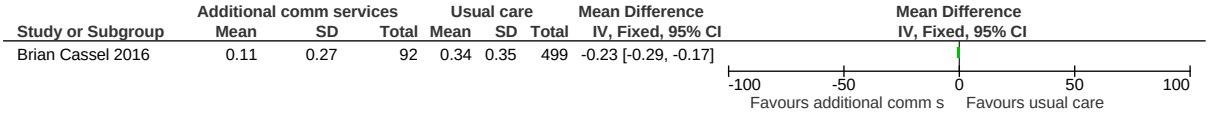


Figure 45: Number of hospital visits (number of hospitalisation/month – heart failure group) 1-18 months before death



E.1.8 Additional community services available on a regular/routine basis versus usual care (Brumley 2003)

Figure 46: Preferred and actual place of death (people dying at home)

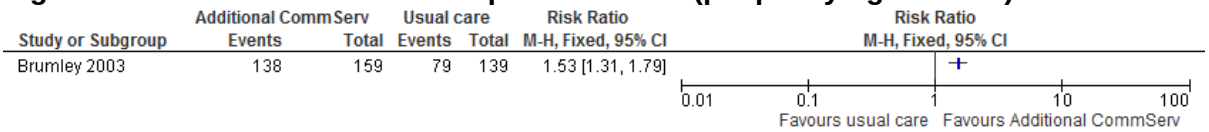


Figure 47: Number of hospital visits (number of hospital visits)

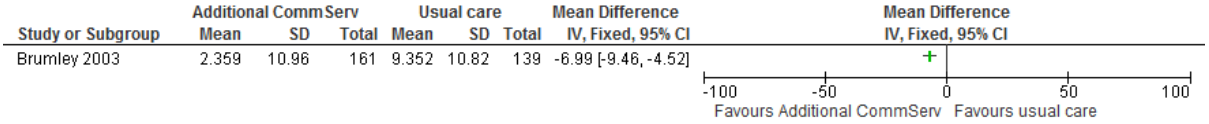


Figure 48: Number of visits to A&E (Emergency department visits)

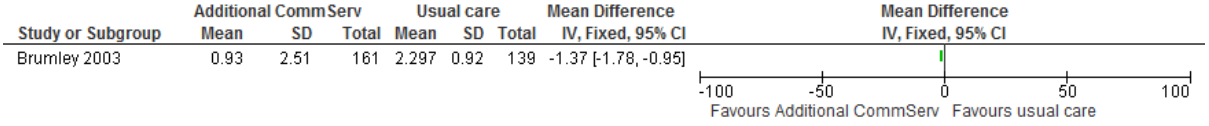


Figure 49: Use of community services (physicians visits)

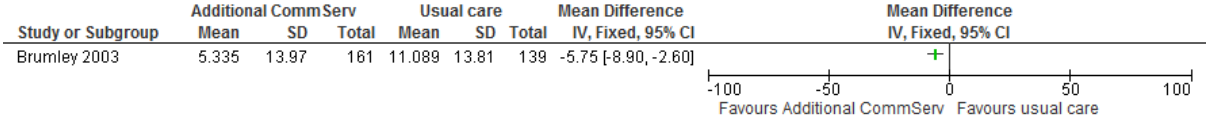


Figure 50: Use of community services (skilled nurses visits)

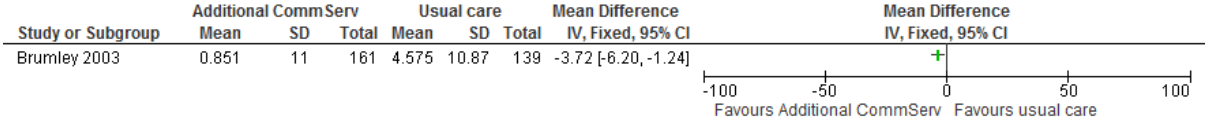
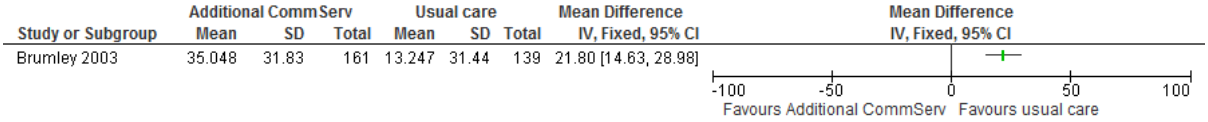


Figure 51: Use of community services (total home health visits)



E.1.9 Additional community services available on a regular/routine basis versus usual care (Brumley 2007)

Figure 52: Hospitalisation (n of people hospitalised)

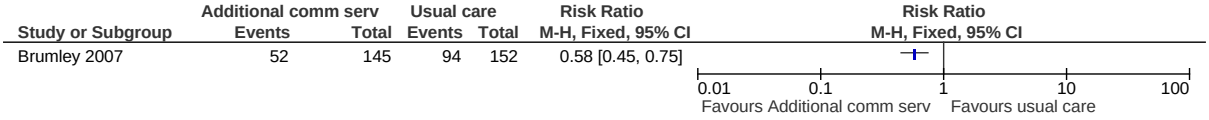


Figure 53: Number of visits to A&E (people accessing Emergency department)

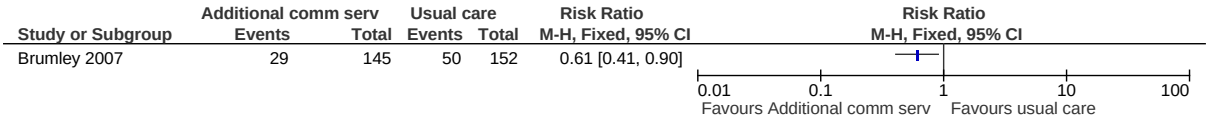


Figure 54: Use of community services (people enrolled in hospice)

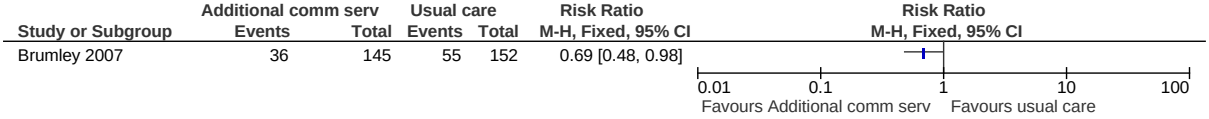
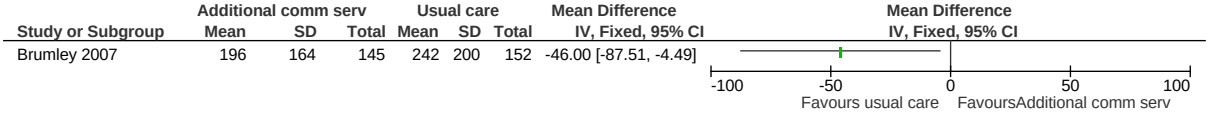


Figure 55: Length of survival



E.1.10 Additional community services available on a regular/routine basis versus usual care (Chitnis 2013)

Figure 56: Preferred and actual place of death (people dying at home)

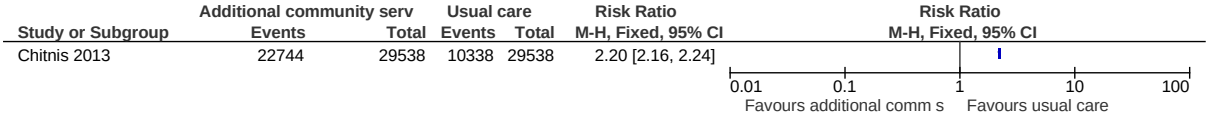


Figure 57: Preferred and actual place of death (people dying in hospital)

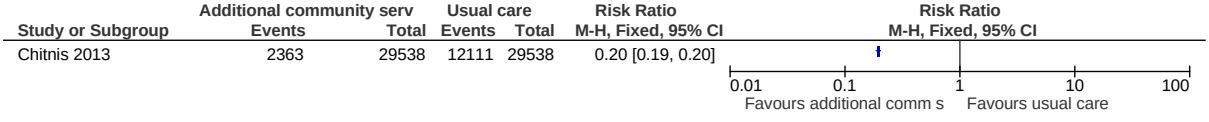


Figure 58: Number of hospital visits (patients who attended outpatients) between first MCNS visit and death

Figure 59: Number of unscheduled admissions (people with emergency admissions) between first MCNC visit and death

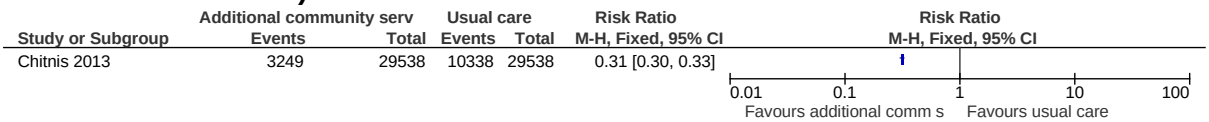
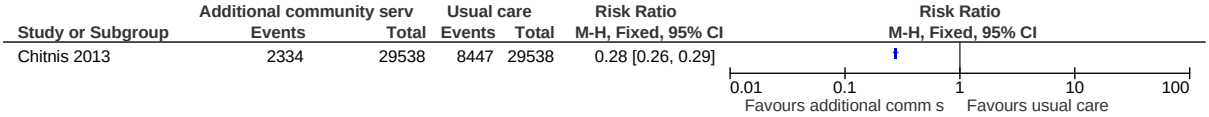
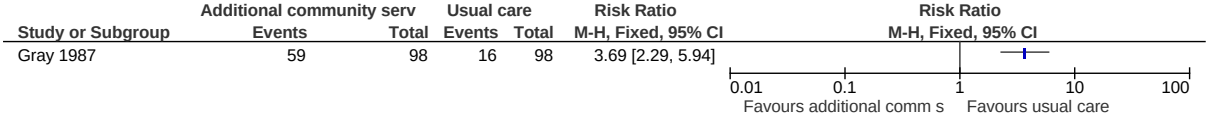


Figure 60: Number of visits to A&E (people who attended A&E) between first MCNC visit and death



E.1.11 Additional community services available on a regular/routine basis versus usual care (Gray 1987)

Figure 61: Preferred and actual place of death (people dying at home) up to 2 years



E.1.12 Additional community services available on a regular/routine basis versus other additional community service (Hughes 2000)

Figure 62: Length of survival (number of people who died – mortality) at 6 months

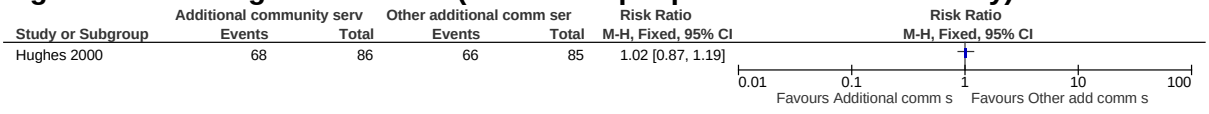


Figure 63: Length of survival (length of survival – overall)

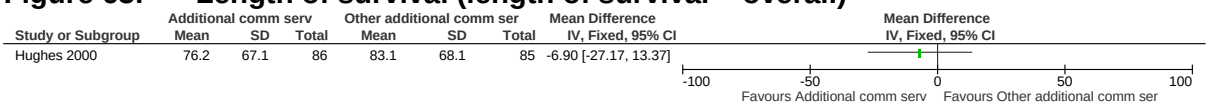


Figure 64: Length of survival (length of survival in people who died)

Study or Subgroup	Additional comm serv Mean	SD	Total	Other additional comm ser Mean	SD	Total	Mean Difference IV, Fixed, 95% CI
Hughes 2000	48	43.3	68	54.5	47.7	66	-6.50 [-21.94, 8.94]

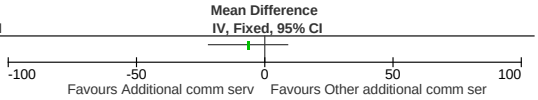


Figure 65: Length of stay (VA services – emergency room)

Study or Subgroup	Additional comm serv Mean	SD	Total	Other additional comm ser Mean	SD	Total	Mean Difference IV, Fixed, 95% CI
Hughes 2000	0.57	0.8	86	0.72	0.9	85	-0.15 [-0.41, 0.11]

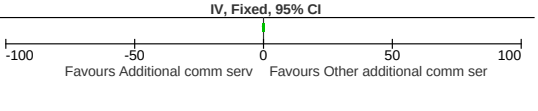


Figure 66: Length of stay (VA services – extended care days)

Study or Subgroup	Additional comm serv Mean	SD	Total	Other additional comm ser Mean	SD	Total	Mean Difference IV, Fixed, 95% CI
Hughes 2000	0.38	3.6	86	0	0	85	Not estimable

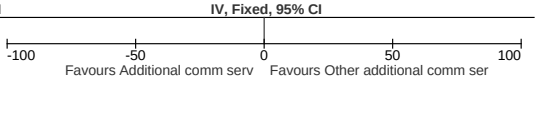


Figure 67: Length of stay (VA services – general bed days)

Study or Subgroup	Additional comm serv Mean	SD	Total	Other additional comm ser Mean	SD	Total	Mean Difference IV, Fixed, 95% CI
Hughes 2000	5.63	10	86	12.06	15.2	85	-6.43 [-10.29, -2.57]

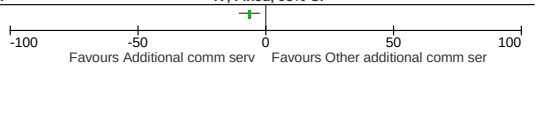


Figure 68: Length of stay (VA services – intensive care hospital days)

Study or Subgroup	Additional comm serv Mean	SD	Total	Other additional comm ser Mean	SD	Total	Mean Difference IV, Fixed, 95% CI
Hughes 2000	0.13	0.86	86	0.45	3.8	85	-0.32 [-1.15, 0.51]

Figure 69: Length of stay (VA services – intermediate bed days)

Study or Subgroup	Additional comm serv Mean	SD	Total	Other additional comm ser Mean	SD	Total	Mean Difference IV, Fixed, 95% CI
Hughes 2000	4	8	86	2.52	7.9	85	1.48 [-0.90, 3.86]

Figure 70: Length of stay (VA services – outpatient clinic visits)

Study or Subgroup	Additional comm serv Mean	SD	Total	Other additional comm ser Mean	SD	Total	Mean Difference IV, Fixed, 95% CI
Hughes 2000	0.73	1.9	86	2.59	6.1	85	-1.86 [-3.22, -0.50]

Figure 71: Length of stay (VA services – rehabilitation days)

Study or Subgroup	Additional comm serv Mean	SD	Total	Other additional comm ser Mean	SD	Total	Mean Difference IV, Fixed, 95% CI
Hughes 2000	0	0	86	0.14	1.3	85	Not estimable

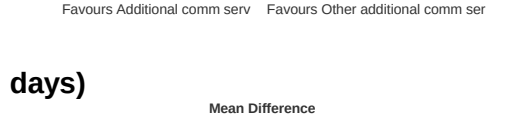


Figure 72: Length of stay (VA services – total days)

Study or Subgroup	Additional comm serv Mean	SD	Total	Other additional comm ser Mean	SD	Total	Mean Difference IV, Fixed, 95% CI
Hughes 2000	9.94	13.3	86	15.86	20.1	85	-5.92 [-11.03, -0.81]

E.1.13 Additional community services available on a regular/routine basis versus other additional community service (Kim 2009)

Figure 73: Quality of life (QUAL-E physical) at 18 months

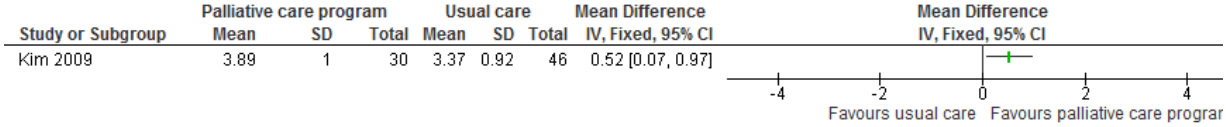


Figure 74: Quality of life (QUAL-E social) at 18 months

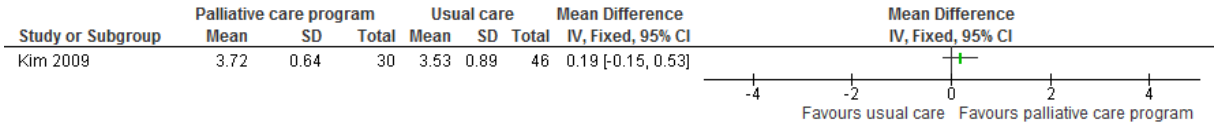


Figure 75: Quality of life (QUAL-E preparation) at 18 months

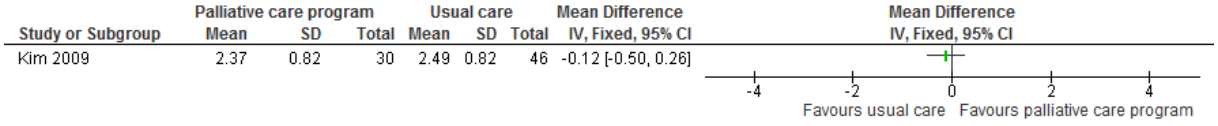


Figure 76: Quality of life (QUAL-E control) at 18 months

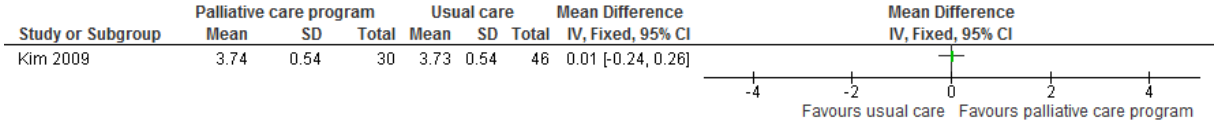


Figure 77: Quality of life (QUAL-E completion) at 18 months

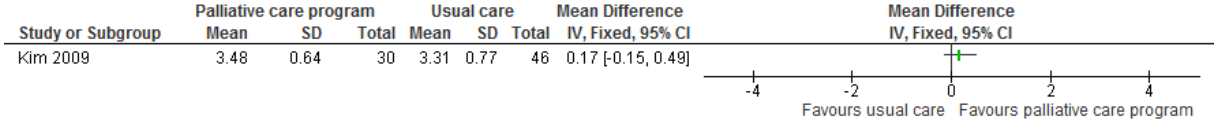
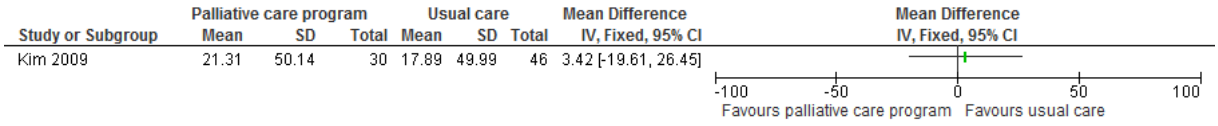


Figure 78: Length of stay (admission days in the last 6 months)



E.1.14 Additional community services available on a regular/routine basis versus other additional community service (Leppert 2012)

Figure 79: Quality of life (EORTOC QLQ-C30 global function) at 14 days

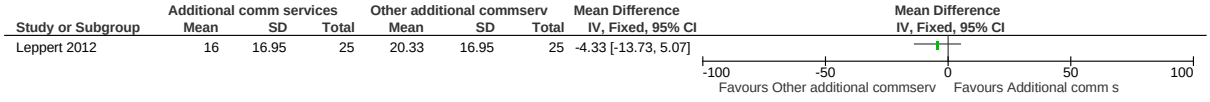
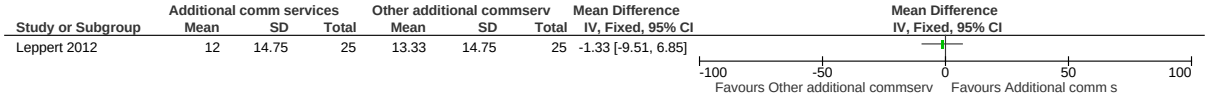
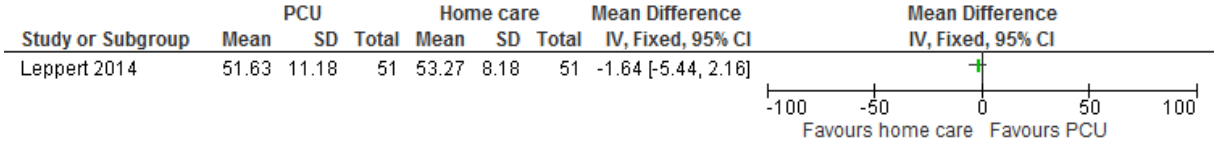


Figure 80: Quality of life (EORTOC QLQ-C30 global function) at 28 days



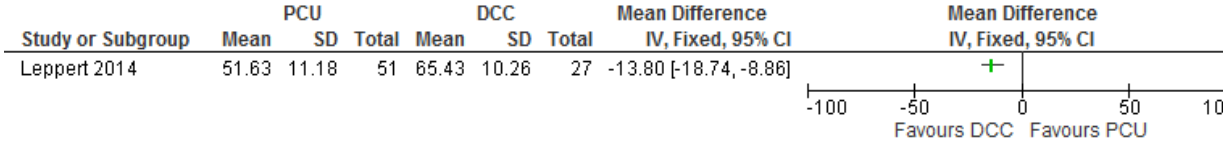
E.1.15 Additional community services available on a regular/routine basis versus other additional community service (Leppert 2014)

Figure 81: Quality of life (EORTOC QLQ-C15 PAL global function) at 14 days



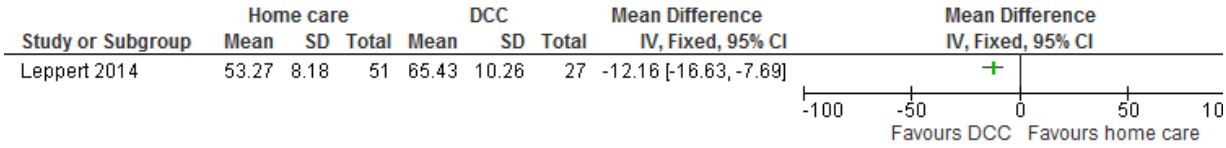
E.1.16 Additional community services available on a regular/routine basis versus other additional community service (Leppert 2014)

Figure 82: Quality of life (EORTOC QLQ-C15 PAL global function) at 14 days



E.1.17 Additional community services available on a regular/routine basis versus other additional community service (Leppert 2014)

Figure 83: Quality of life (EORTOC QLQ-C15 PAL global function) at 14 days



E.1.18 Additional community services available on a regular/routine basis versus usual care (Lustbader 2017)

Figure 84: Hospitalisation (number of hospital admissions)

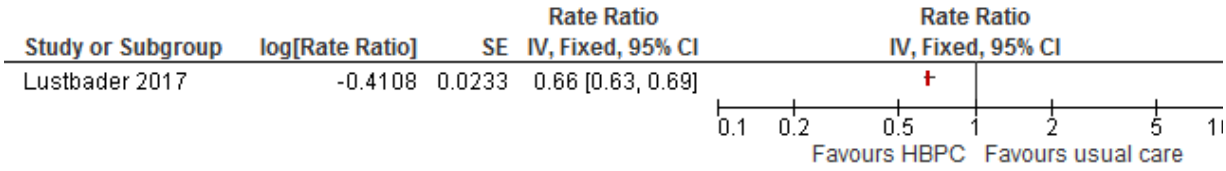


Figure 85: Visits to accident and emergency (number of ED visits)

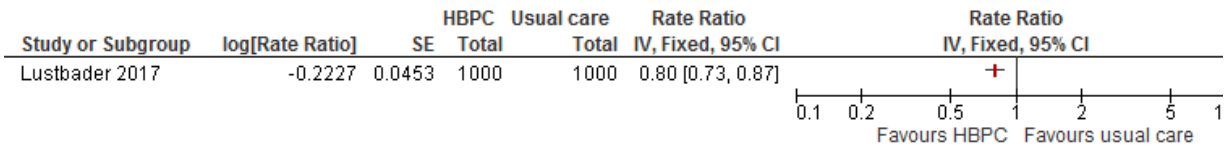
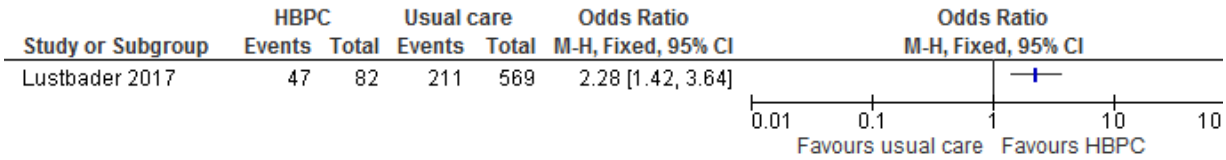


Figure 86: Community service use (hospice enrolment)



E.1.19 Additional community services available on a regular/routine basis versus usual care (Ng 2017/Wong 2017)

Figure 87: Quality of life (MWOL-HK global)

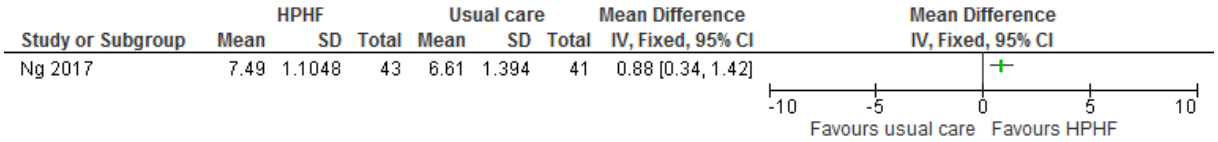


Figure 88: Quality of life (CHQ-C total score)

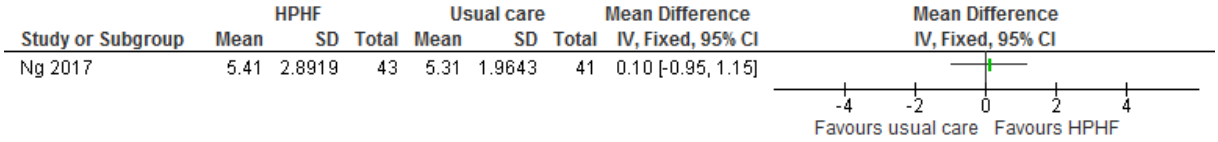


Figure 89: Patient satisfaction (PSQ)

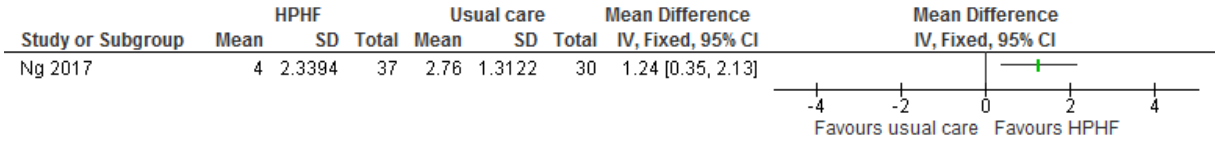


Figure 90: Quality of life (SF-6D)

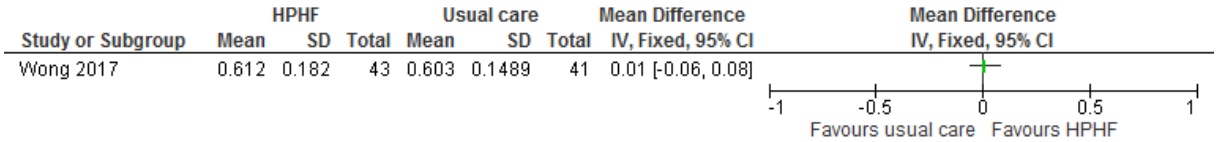


Figure 91: Quality of life (QALY)

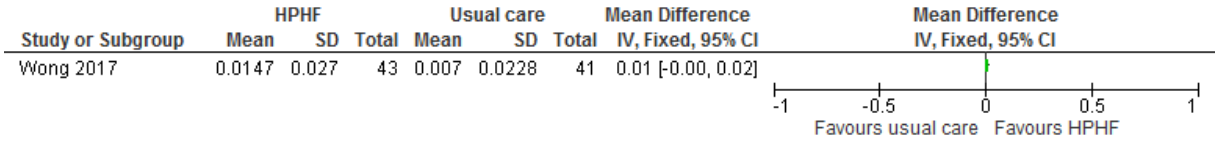


Figure 92: Visits to accident and emergency (number of ED visits)

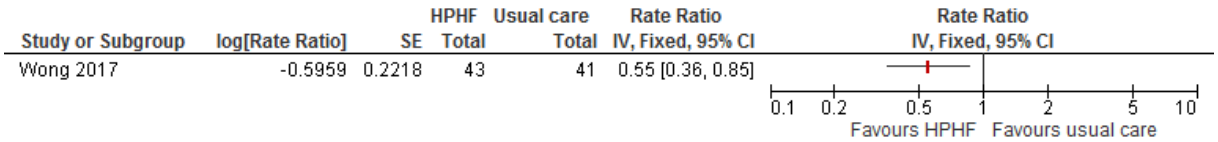
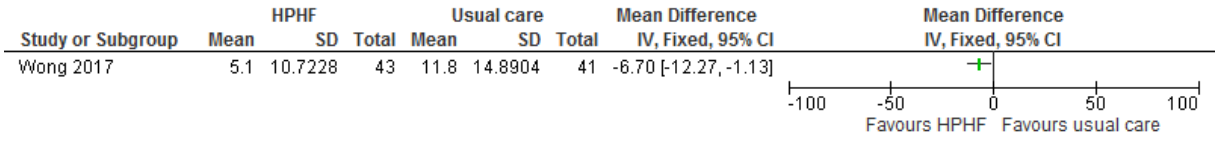
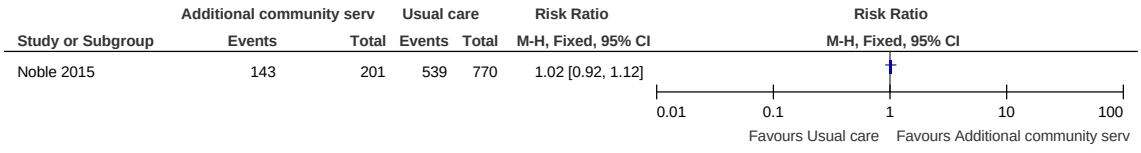


Figure 93: Length of stay (length of hospital stay, per patient mean)



E.1.20 Additional community services available on a regular/routine basis versus usual care (Noble 2015)

Figure 94: Preferred and actual place of death (people dying at home)



E.1.21 Additional community services available on a regular/routine basis versus usual care (Pattenden 2013)

Figure 95: Number of unscheduled admissions (N of patients admitted)

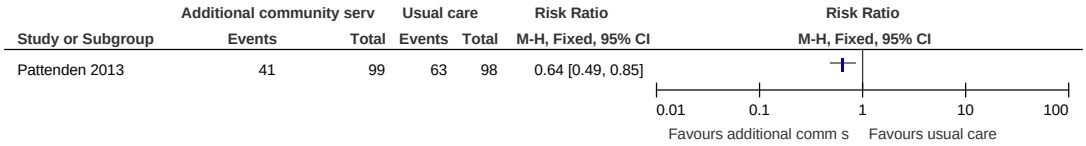


Figure 96: Length of stay (Length of stay – Bradford subgroup)

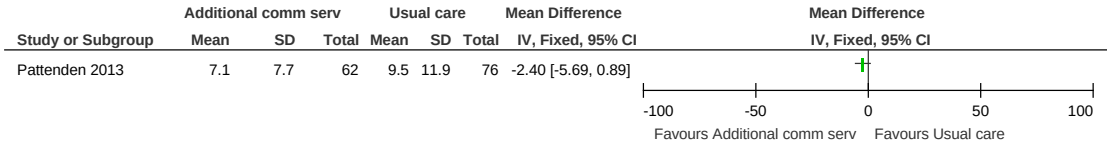


Figure 97: Length of stay (Length of stay – Poole subgroup)

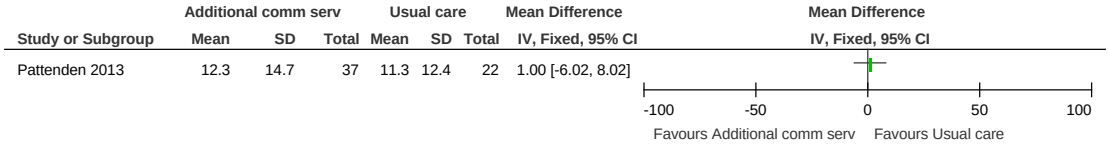


Figure 98: Number of unscheduled admissions (N of admissions per patients – Bradford subgroup)

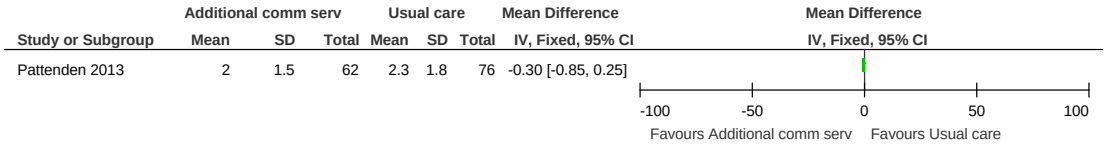
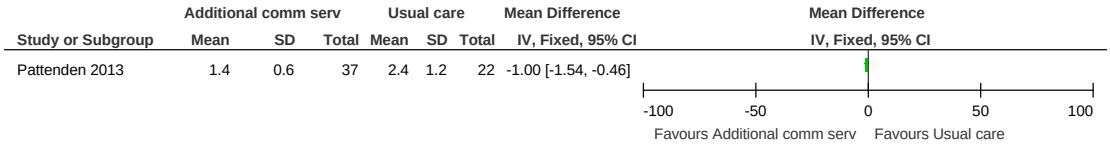


Figure 99: Number of unscheduled admissions (N of admissions per patients – Poole subgroup)



E.1.22 Additional community services available on a regular/routine basis versus usual care (Riolfi 2014)

Figure 100: Preferred and actual place of death (people dying at country hospital)

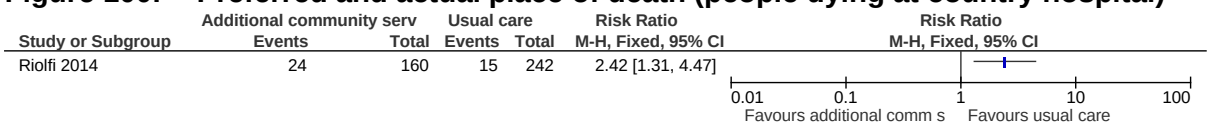


Figure 101: Preferred and actual place of death (people dying at home)

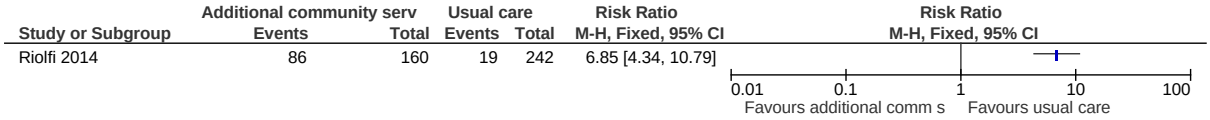


Figure 102: Preferred and actual place of death (people dying in hospital)

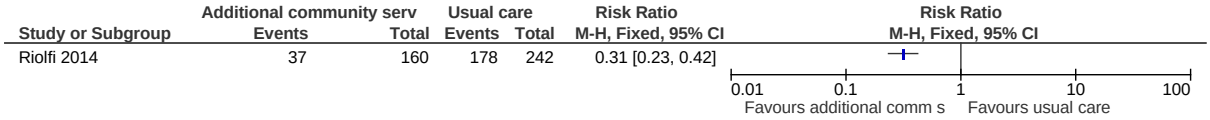


Figure 103: Preferred and actual place of death (people dying in nursing home)

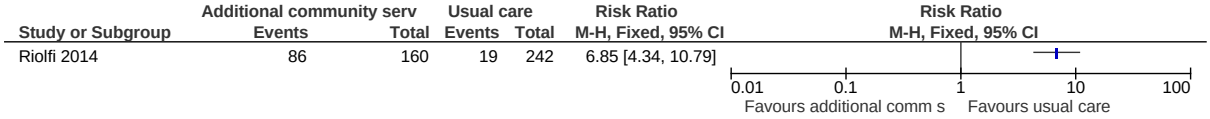


Figure 104: Length of stay (time spent in hospital) in the last 2 months of life

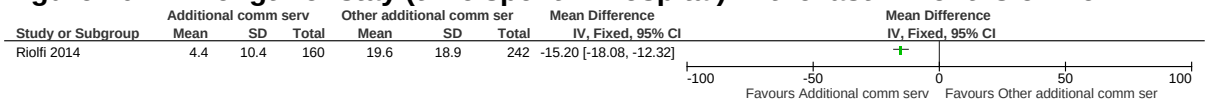
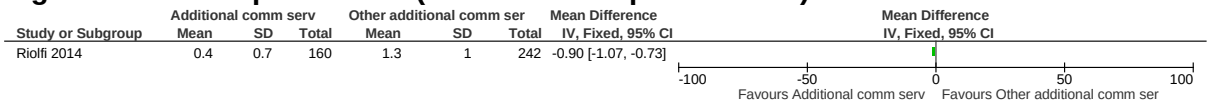


Figure 105: Hospitalisation (number of hospitalisations) in the last 2 months of life



E.1.23 Additional community services available on a regular/routine basis versus usual care (Seow 2008)

Figure 106: Length of survival (deaths since referral (120+ days))

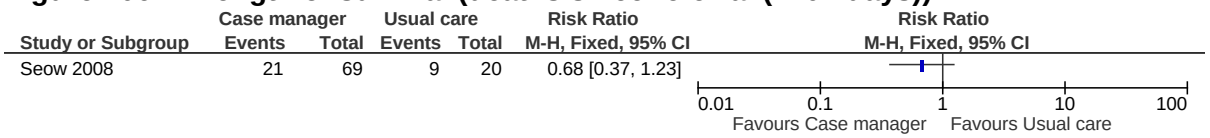


Figure 107: Length of survival (deaths since referral (31-120 days))

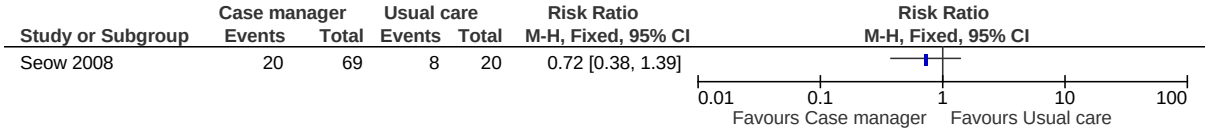
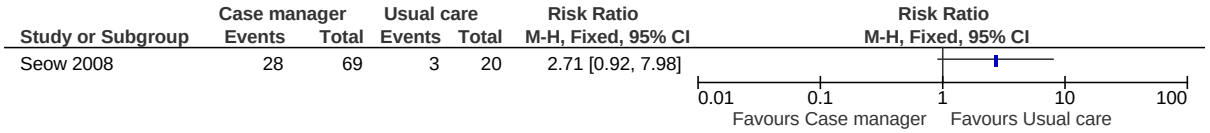


Figure 108: Length of survival (deaths since referral (8-30 days))



E.1.24 Additional community services available on a regular/routine basis versus usual care (Seow 2014)

Figure 109: Preferred and actual place of death (Place of death - hospital)

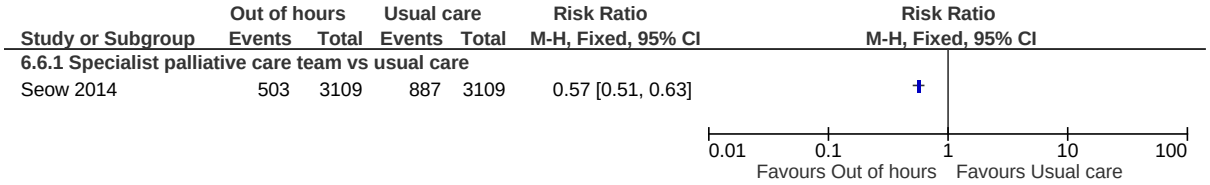


Figure 110: Hospitalisation (last 2 weeks of life)

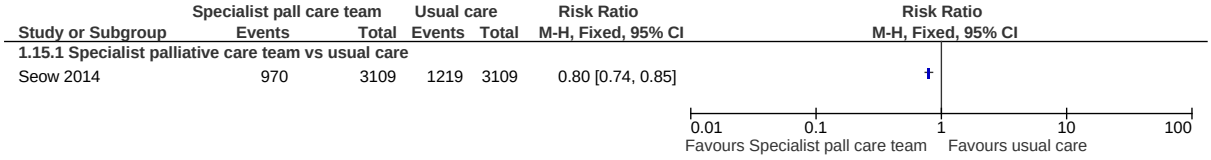
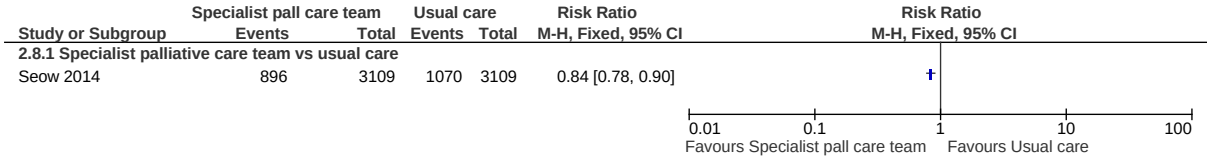


Figure 111: Number of visits to accident and emergency (last two weeks of life)



E.1.25 Additional community services available on a regular/routine basis versus usual care (Sessa 1996)

Figure 112: Preferred and actual place of death (people dying at home)

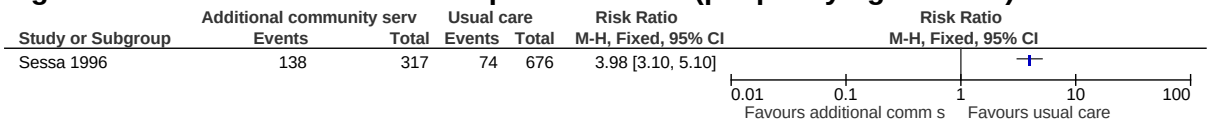


Figure 113: Preferred and actual place of death (people dying in hospital)

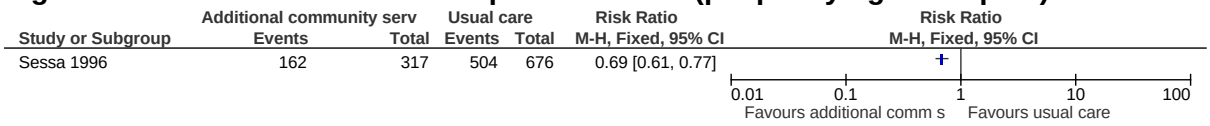


Figure 114: Preferred and actual place of death (people dying at nursing home or private clinic)

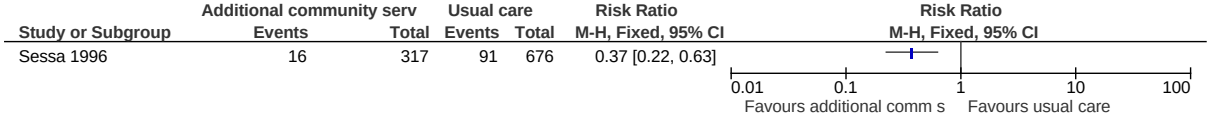


Figure 115: Number of unscheduled admissions (people with >3 hospitalisations) in the 3 months before death)

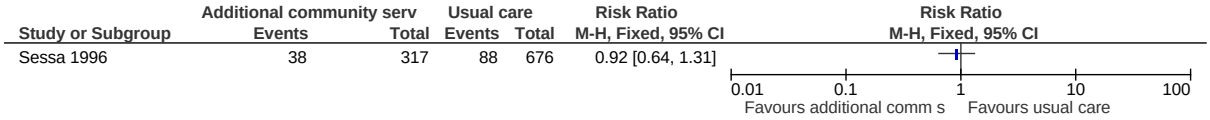
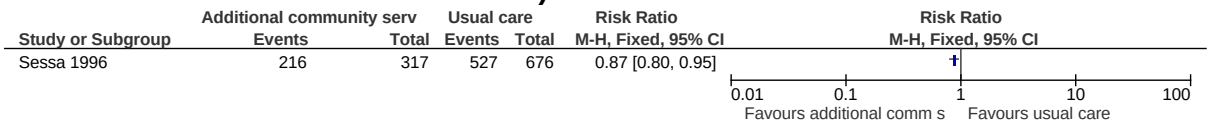


Figure 116: Number of unscheduled admissions (people with 1-2 hospitalisations) in the 3 months before death)



E.1.26 Additional community services available on a regular/routine basis versus usual care (Smeenk 1998)

Figure 117: Preferred and actual place of death (people dying at home)

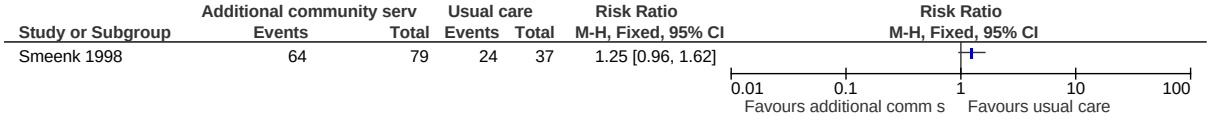


Figure 118: Length of stay (days in hospital at rehospitalisation)

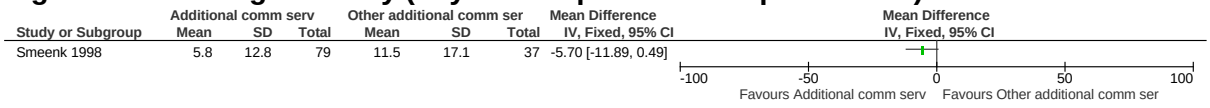
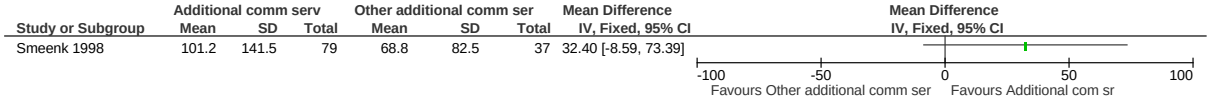


Figure 119: Length of survival (days of survival)



E.1.27 Additional community services available on a regular/routine basis versus usual care (Youens 2017)

Figure 120: Preferred and actual place of death (people dying in hospital)

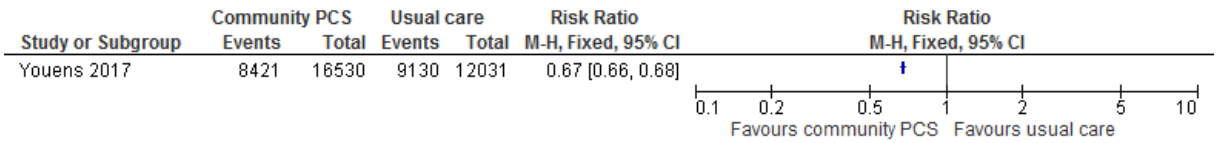


Figure 121: Preferred and actual place of death (people dying out of hospital)

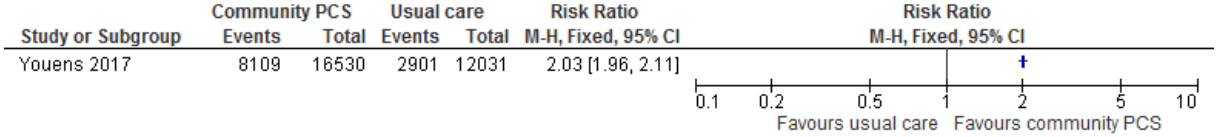


Figure 122: Hospitalisation (hospitalisation in the last 12 months)

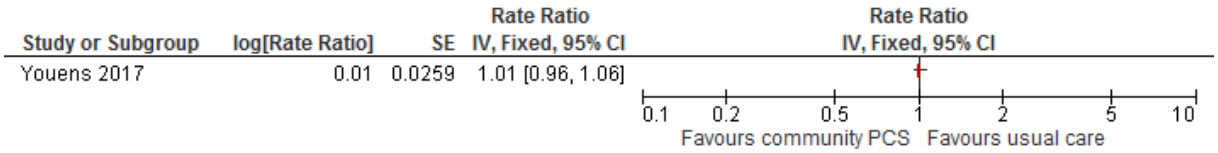


Figure 123: Unscheduled admissions (unplanned hospitalisation in the last 12 months)

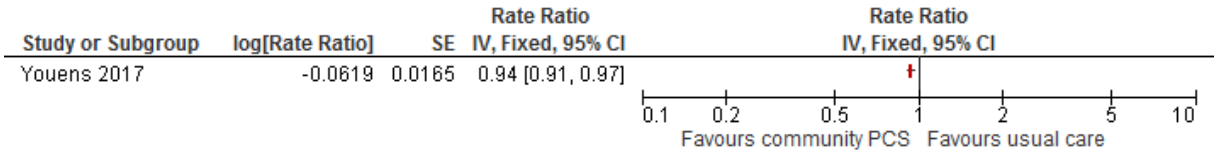


Figure 124: Accident and emergency visits (ED presentation in the last 12 months)

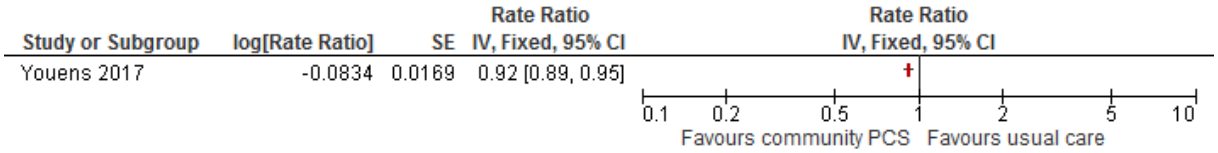
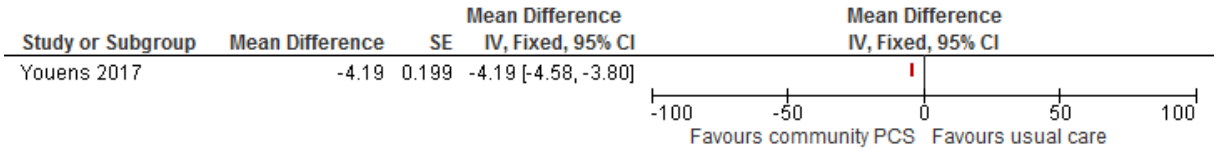


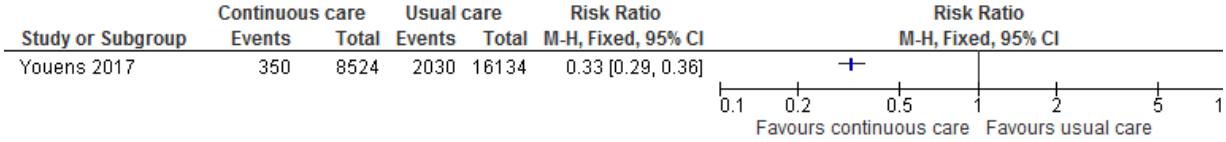
Figure 125: Length of stay (days in inpatient hospital in last 12 months)



E.2 Availability of additional community services in an acute/emergency scenario

E.2.1 Additional community services available in an acute/emergency scenario (Rapid response service available) versus usual care (Rapid response service not available) (Gage 2015 – Holdsworth 2015)

Figure 126: Preferred and actual place of death (people dying in inpatient hospice)



E.2.2 Additional community services available in an acute/emergency scenario (Rapid response service available) versus usual care (Rapid response service not available) (Gage 2015 – Holdsworth 2015)

Figure 127: Carers quality of life (EQ5D, 0-1) (8 months)

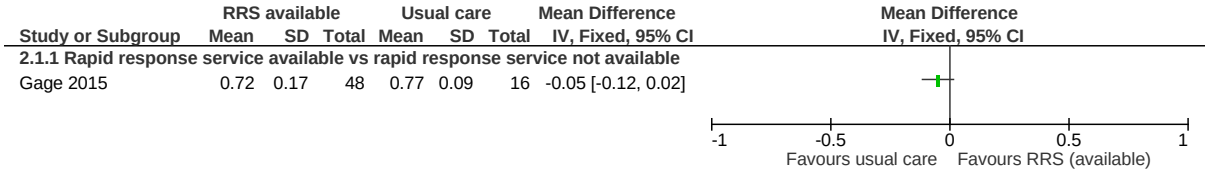


Figure 128: Carers quality of life (SF12 Physical Component Summary Score, 0-100) (8 months)

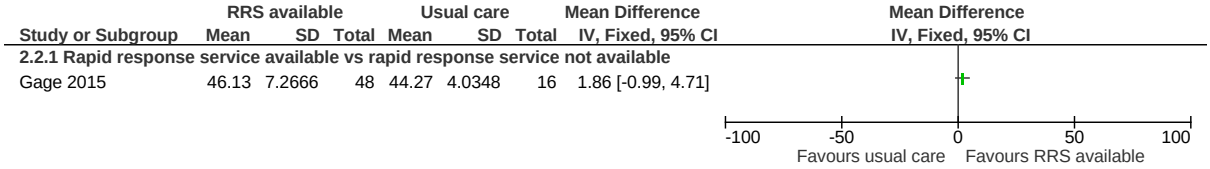


Figure 129: Carers quality of life (SF12 Mental Component Summary Score, 0-100) (8 months)

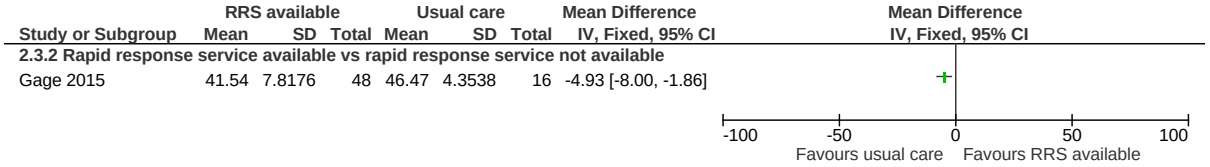
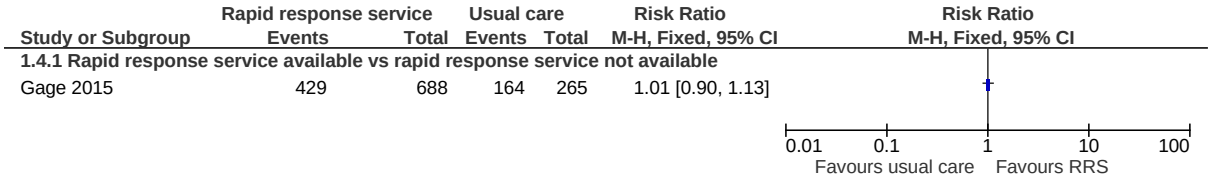


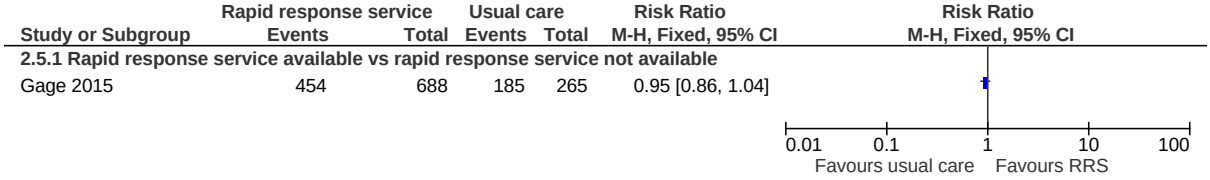
Figure 130: Preferred and actual place of death (N achieving (initial) place of death)



1

2

Figure 131: Preferred and actual place of death (N achieving (final) place of death)



3 **E.2.3 Additional community services available in an acute/emergency scenario**
4 **(Rapid response service users) versus usual care (Rapid response service**
5 **non-users) (Gage 2015 – Holdsworth 2015)**

6

Figure 132: Preferred and actual place of death (N achieving (initial) place of death)

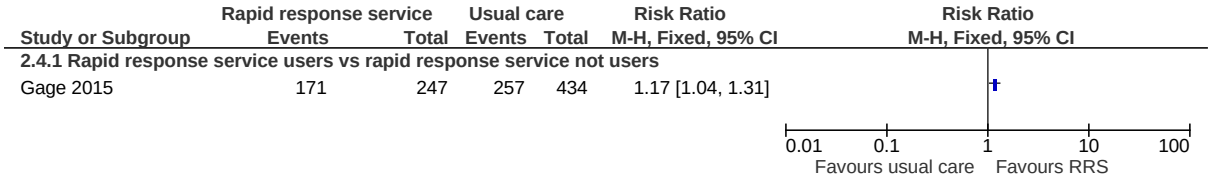
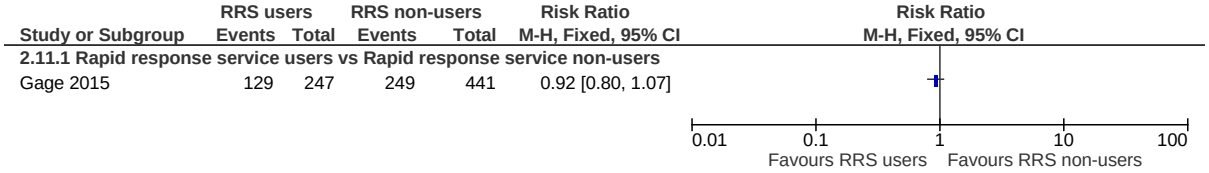
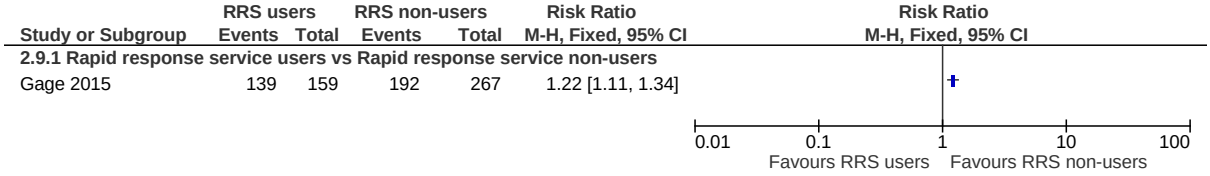


Figure 133: Number of visits to accident and emergency (N with ≥ 1 contact with acute care)



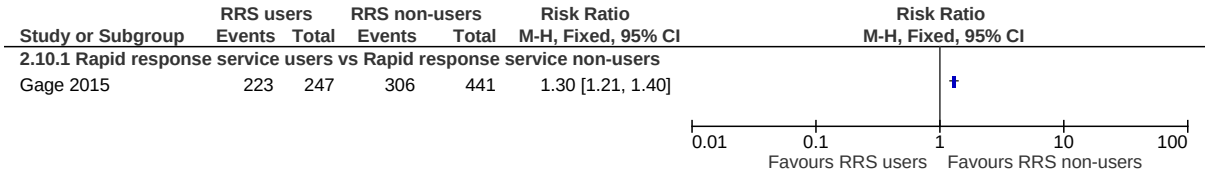
This outcome included visits to hospital A&E, inpatients nights, outpatients appointments, day hospital visits

Figure 134: Use of community services (N with ≥ 1 contact with GP/primary care)



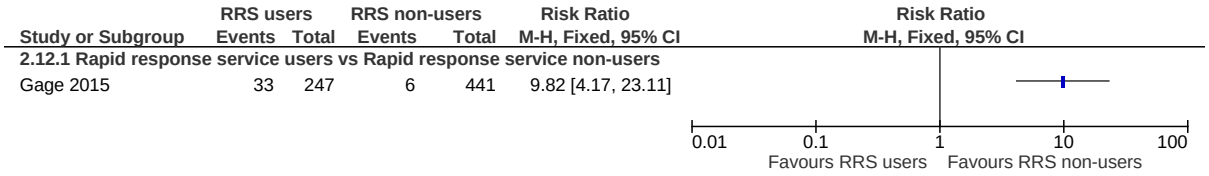
This outcome included all visits to surgery to see GP or practice nurse, and home visits by GP

Figure 135: Use of community services (N with ≥ 1 contact with community care)



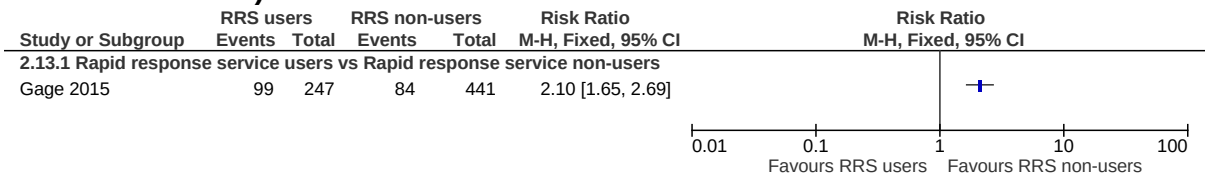
This outcome included all visits and telephone calls to patients by community nurse, long-term condition team, intermediate care teams, community matrons

Figure 136: Use of community services (N with ≥ 1 contact with Marie Curie visits)



This outcome included Marie Curie health care assistants or registered nurse visits – each lasted 8 hours (overnight sitting)

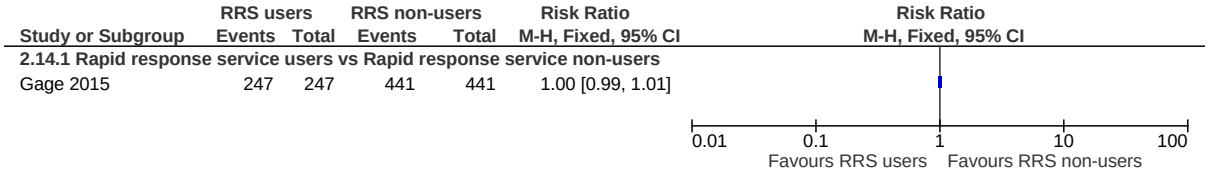
Figure 137: Use of community services (N with ≥ 1 contact with out of hours services)



This outcome included out of hours home visits by GP or nurse, telephone advice by GP, 'walk-in' attendances and ambulance responses

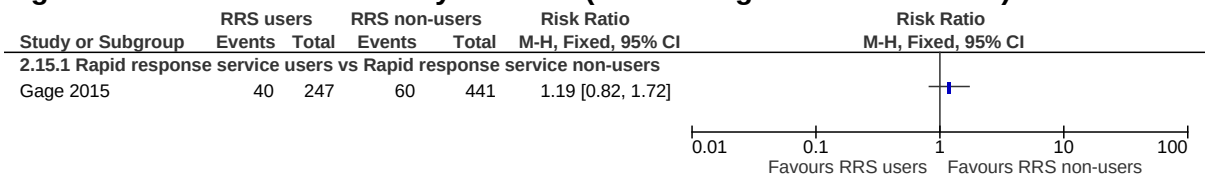
1

Figure 138: Use of community services (N with ≥ 1 contact with hospice, excluding rapid response service)



This outcome included home or outpatients contacts with hospice nurses, doctors, allied health professionals, social workers, chaplain, inpatient stays, day hospice attendances for complementary therapies

Figure 139: Use of community services (N receiving ≥ 1 social service)



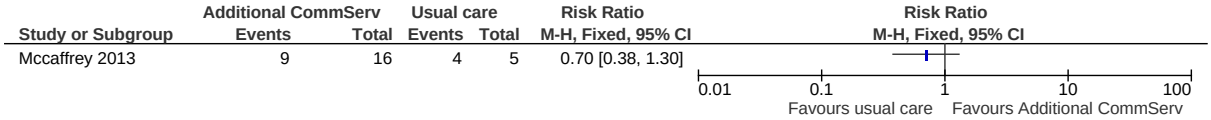
This outcome included social services such as for example domiciliary help, meals

2

3

E.2.4 Additional community services available in an acute/emergency scenario (Rapid response service users) versus usual care (Rapid response service non-users) (McCaffrey 2013)

Figure 140: Preferred and actual place of death (people dying at home) at 28 days



7

8

E.2.5 Additional community services available in an acute/emergency scenario (Delivering Choice Programme with out of hours users) versus usual care (Delivering Choice Programme with out of hours non-users) (Purdy 2015)

12

Figure 141: Preferred and actual place of death (Place of death – acute hospital)

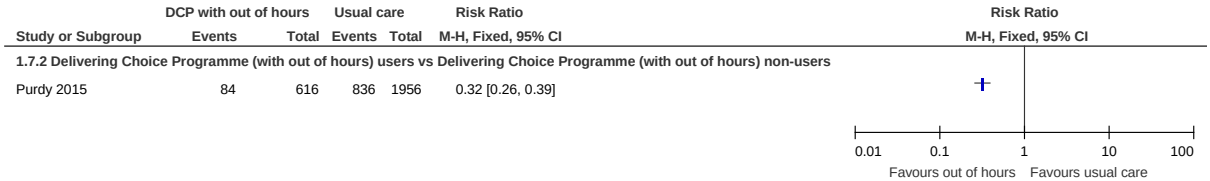


Figure 142: Preferred and actual place of death (Place of death – community hospital)

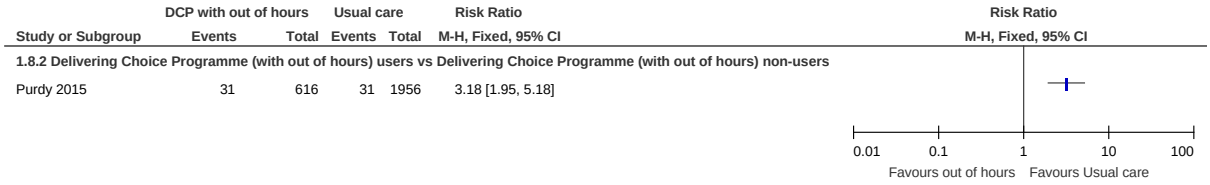
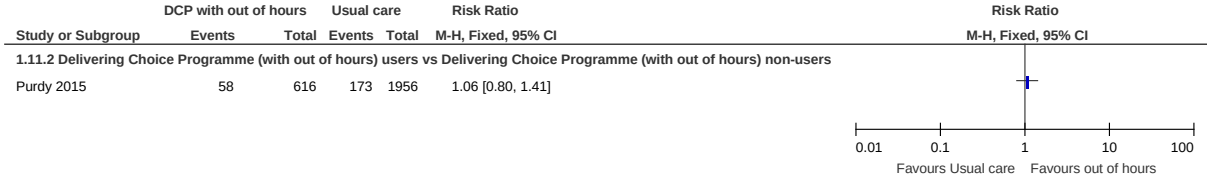


Figure 143: Preferred and actual place of death (Place of death – home)

Figure 144: Preferred and actual place of death (Place of death – care home)



1

Figure 145: Preferred and actual place of death (Place of death – hospice)

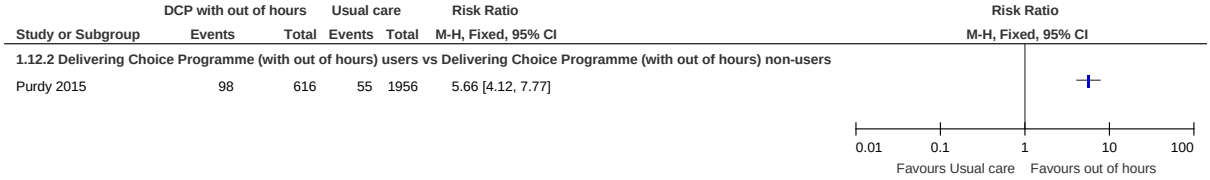


Figure 146: Preferred and actual place of death (Place of death – elsewhere)

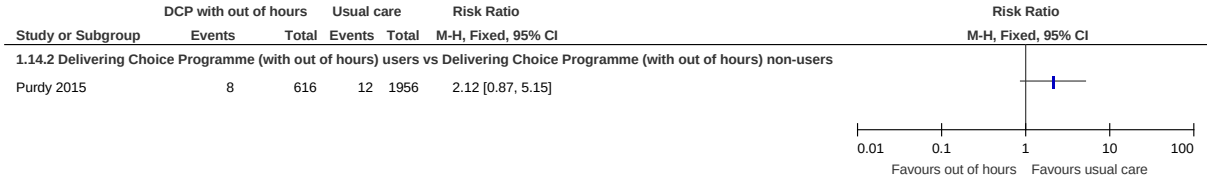


Figure 147: Number of hospital visits (patients with one or more emergency admissions < 30 days)

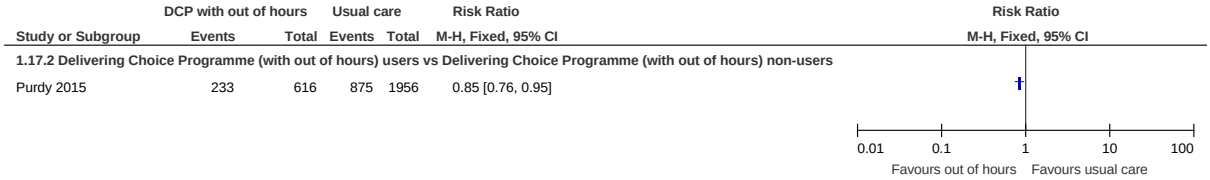


Figure 148: Number of hospital visits (patients with one or more emergency admissions < 7 days)

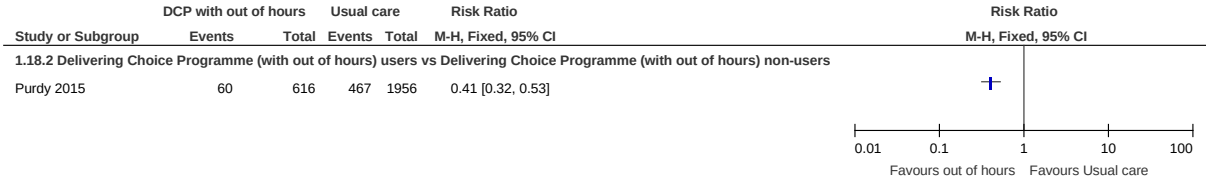


Figure 149: Number of hospital visits (mean emergency admission per patient < 30 days)

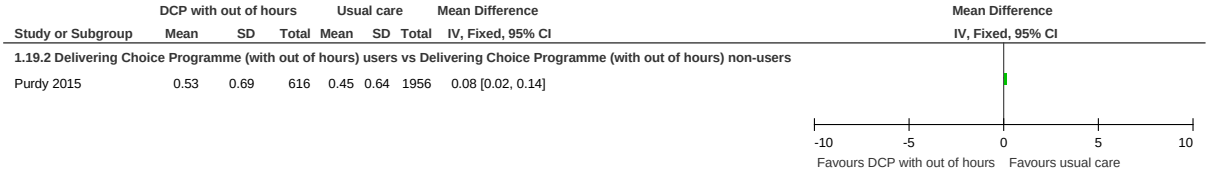


Figure 150: Number of hospital visits (mean emergency admission per patient < 7 days)

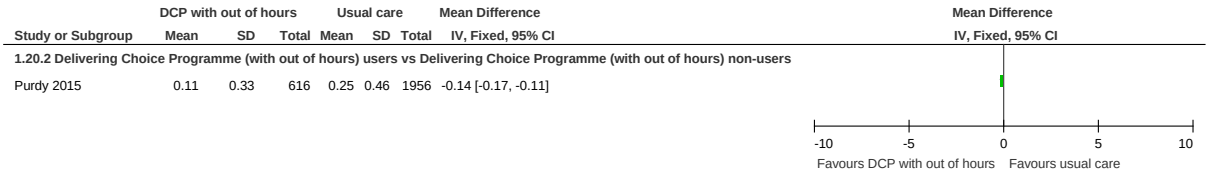


Figure 151: Number of visits to accident and emergency (patients with one or more ED attendance < 30 days)

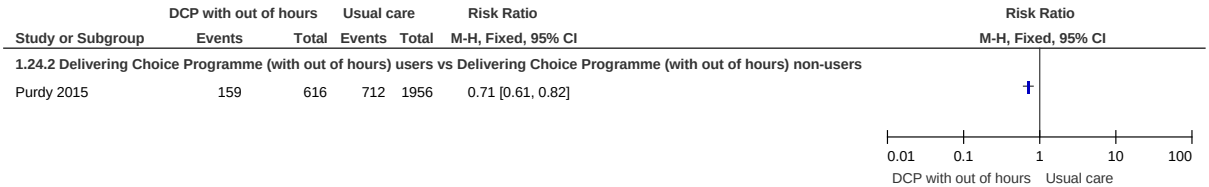


Figure 152: Number of visits to accident and emergency (patients with one or more ED attendance < 7 days)

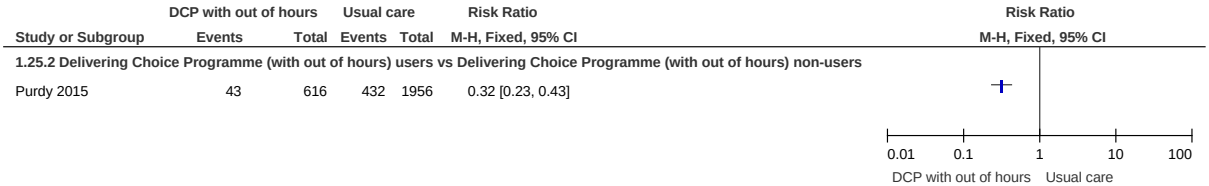


Figure 153: Number of visits to accident and emergency (mean ED attendance per patient < 30 days)

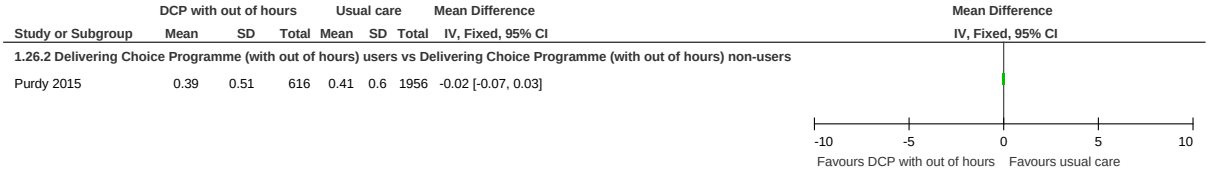
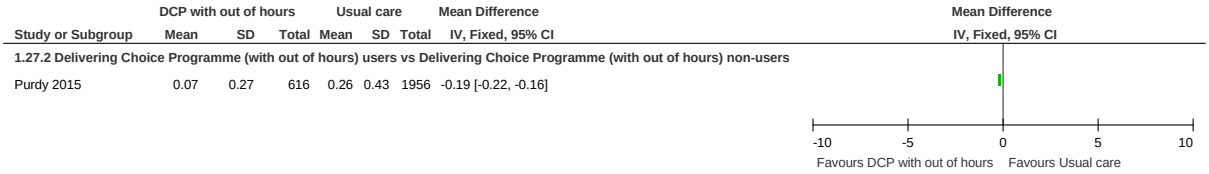


Figure 154: Number of visits to accident and emergency (mean ED attendance per patient < 7 days)



Appendix F:GRADE tables

F.1 Availability of additional community services on a regular/routine basis

Table 47: Clinical evidence profile: Additional community services (routine) compared to usual care

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Additional CommServ (routine)	Other additional CommServ (Abel 2013)	Relative (95% CI)	Absolute		
Number of visits to accident and emergency (patients with ≥1 ED admission in the last year of life) (follow-up mean 1 years)												
1	observational studies[1]	serious[2]	no serious inconsistency	no serious indirectness	no serious imprecision	none	481/547 (87.9%)	384/422 (91%)	RR 0.97 (0.93 to 1.01)	27 fewer per 1000 (from 64 fewer to 9 more)	⊕OOO VERY LOW	IMPORTANT
Length of stay (mean stay for those with or without an admission) (follow-up mean 1 years; Better indicated by lower values)												
1	observational studies[1]	serious[2]	no serious inconsistency	no serious indirectness	no serious imprecision	none	389	275	-	MD 8.3 lower (12.45 to 4.15 lower)	⊕OOO VERY LOW	IMPORTANT
ED visit (mean ED admissions in the last year of life) (follow-up mean 1 years; Better indicated by lower values)												
1	observational studies[1]	serious[2]	no serious inconsistency	no serious indirectness	no serious imprecision	none	389	275	-	MD 0.14 lower (0.4 lower to 0.12 higher)	⊕OOO VERY LOW	IMPORTANT
Hospitalisation (mean admissions) (follow-up mean 1 years; Better indicated by lower values)												
1	observational studies[1]	serious[2]	no serious inconsistency	no serious indirectness	no serious imprecision	none	389	275	-	MD 0.7 lower (1.86 lower to 0.46 higher)	⊕OOO VERY LOW	IMPORTANT

[1] Downgraded by 2 increments if the majority of the evidence was from studies with observational/non-randomised study design.
[2] 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

Table 48: Clinical evidence profile: Additional community services (routine) compared to usual care

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Additional community services (routine)	Usual care (Addington-hall 1992)	Relative (95% CI)	Absolute		
Satisfaction (carers agreeing with statement 'care was well coordinated') after bereavement												
1	randomised trials	very serious[a]	no serious inconsistency	Serious[b]	very serious[c]	none	31/51 (60.8%)	27/43 (62.8%)	RR 0.97 (0.7 to 1.33)	19 fewer per 1000 (from 188 fewer to 207 more)	⊕OOO VERY LOW	IMPORTANT
Satisfaction (carers satisfied with care from district nurses)												
1	randomised trials	very serious[a]	no serious inconsistency	Serious[b]	Serious[c]	none	33/56 (58.9%)	27/62 (43.5%)	RR 1.35 (0.95 to 1.94)	152 more per 1000 (from 22 fewer to 409 more)	⊕OOO VERY LOW	IMPORTANT
Satisfaction (carers satisfied with care from GP)												
1	randomised trials	very serious[a]	no serious inconsistency	Serious[b]	Serious[c]	none	38/56 (67.9%)	42/62 (67.7%)	RR 1 (0.78 to 1.28)	0 fewer per 1000 (from 149 fewer to 190 more)	⊕OOO VERY LOW	IMPORTANT
Satisfaction (carers satisfied with care from hospital)												
1	randomised trials	very serious[a]	no serious inconsistency	Serious[b]	Serious[c]	none	42/56 (75%)	40/62 (64.5%)	RR 1.16 (0.92 to 1.48)	103 more per 1000 (from 52 fewer to 310 more)	⊕OOO VERY LOW	IMPORTANT
Satisfaction (patients satisfied with care from district nurses)												
1	randomised trials	very serious[a]	no serious inconsistency	Serious[b]	Serious[c]	none	63/104 (60.6%)	40/99 (40.4%)	RR 1.5 (1.13 to 1.99)	202 more per 1000 (from 53 more to 400 more)	⊕OOO VERY LOW	IMPORTANT

Satisfaction (patients satisfied with care from GP)												
1	randomised trials	very serious[a]	no serious inconsistency	Serious[b]	Serious[c]	none	72/104 (69.2%)	63/99 (63.6%)	RR 1.09 (0.89 to 1.32)	57 more per 1000 (from 70 fewer to 204 more)	⊕OOO VERY LOW	IMPORTANT
Satisfaction (patients satisfied with care from hospital)												
1	randomised trials	very serious[a]	no serious inconsistency	Serious[b]	Serious[c]	none	62/104 (59.6%)	45/99 (45.5%)	RR 1.31 (1 to 1.71)	141 more per 1000 (from 0 more to 323 more)	⊕OOO VERY LOW	IMPORTANT
Preferred and actual place of death (people dying at home)												
1	randomised trials	very serious[a]	no serious inconsistency	Serious[b]	very serious[c]	none	17/86 (19.8%)	14/81 (17.3%)	RR 1.14 (0.6 to 2.17)	24 more per 1000 (from 69 fewer to 202 more)	⊕OOO VERY LOW	CRITICAL
Preferred and actual place of death (people dying elsewhere)												
1	randomised trials	very serious[a]	no serious inconsistency	Serious[b]	very serious[c]	none	2/86 (2.3%)	2/81 (2.5%)	RR 0.94 (0.14 to 6.53)	1 fewer per 1000 (from 21 fewer to 137 more)	⊕OOO VERY LOW	CRITICAL
Preferred and actual place of death (people dying in hospice)												
1	randomised trials	very serious[a]	no serious inconsistency	Serious[b]	very serious[c]	none	10/86 (11.6%)	12/81 (14.8%)	RR 0.78 (0.36 to 1.72)	33 fewer per 1000 (from 95 fewer to 107 more)	⊕OOO VERY LOW	CRITICAL
Preferred and actual place of death (people dying in hospital)												
1	randomised trials	very serious[a]	no serious inconsistency	Serious[b]	very serious[c]	none	29/86 (33.7%)	36/81 (44.4%)	RR 0.76 (0.52 to 1.11)	107 fewer per 1000 (from 213 fewer to 49 more)	⊕OOO VERY LOW	CRITICAL
Use of community services (people known to occupational therapists)												
1	randomised trials	very serious[a]	no serious inconsistency	no serious indirectness	Serious[c]	none	43/86 (50%)	37/81 (45.7%)	RR 1.09 (0.8 to 1.5)	41 more per 1000 (from 91 fewer to 228 more)	⊕OOO VERY LOW	IMPORTANT
Use of community services (people known to social workers)												

1	randomised trials	very serious[a]	no serious inconsistency	no serious indirectness	very serious[c]	none	33/86 (38.4%)	35/81 (43.2%)	RR 0.89 (0.62 to 1.28)	48 fewer per 1000 (from 164 fewer to 121 more)	⊕OOO VERY LOW	IMPORTANT
Use of community services (patients having contact with district nurses) 2 weeks before final interview												
1	randomised trials	very serious[a]	no serious inconsistency	no serious indirectness	very serious[c]	none	38/103 (36.9%)	39/99 (39.4%)	RR 0.94 (0.66 to 1.33)	24 fewer per 1000 (from 134 fewer to 130 more)	⊕OOO VERY LOW	IMPORTANT
Use of community services (patients having contact with GP-home visit) 2 weeks before final interview												
1	randomised trials	very serious[a]	no serious inconsistency	no serious indirectness	very serious[c]	none	23/103 (22.3%)	23/99 (23.2%)	RR 0.96 (0.58 to 1.6)	9 fewer per 1000 (from 98 fewer to 139 more)	⊕OOO VERY LOW	IMPORTANT
Use of community services (patients having contact with GP-surgery consultation) 2 weeks before final interview												
1	randomised trials	very serious[a]	no serious inconsistency	no serious indirectness	very serious[c]	none	13/103 (12.6%)	18/99 (18.2%)	RR 0.69 (0.36 to 1.34)	56 fewer per 1000 (from 116 fewer to 62 more)	⊕OOO VERY LOW	IMPORTANT
Use of community services (patients having contact with hospice or MacMillan sister) 2 weeks before final interview												
1	randomised trials	very serious[a]	no serious inconsistency	no serious indirectness	very serious[c]	none	7/103 (6.8%)	11/99 (11.1%)	RR 0.61 (0.25 to 1.51)	43 fewer per 1000 (from 83 fewer to 57 more)	⊕OOO VERY LOW	IMPORTANT
Hospitalisation (admissions) (Better indicated by lower values)												
1	randomised trials	very serious[a]	no serious inconsistency	no serious indirectness	Serious[c]	none	86	81	-	MD 0.8 lower (1.76 lower to 0.16 higher)	⊕OOO VERY LOW	IMPORTANT
Length of stay (inpatient days) (Better indicated by lower values)												
1	randomised trials	very serious[a]	no serious inconsistency	no serious indirectness	Serious[c]	none	86	81	-	MD 15.9 lower (28.32 to 3.48 lower)	⊕OOO VERY LOW	IMPORTANT
Number of hospital visits (outpatient attendance) (Better indicated by higher values)												
1	randomised	very	no serious	no serious	Serious[c]	none	86	81	-	MD 7.9 higher (4.96	⊕OOO	IMPORTANT

	trials	serious[a]	inconsistency	indirectness						to 10.84 higher)	VERY LOW	
Use of community services (home visits-district nurses, Macmillan nurses, hospital oncology nurses, hospice homecare team) (Better indicated by lower values)												
1	randomised trials	very serious[a]	no serious inconsistency	no serious indirectness	Serious[c]	none	86	81	-	MD 23 lower (38.4 to 7.6 lower)	⊕OOO VERY LOW	IMPORTANT

[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 or 2 increments because the majority of the evidence had indirect outcomes
[c] Downgraded by 1 increment if the confidence interval crossed one MID or by 2 increments if the confidence interval crossed both MIDs

Table 49: Clinical evidence profile: Additional community services (routine) compared to usual care

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	**Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Additional CommServ (routine)**	**Usual care (Ahlner-Elmqvist 2004)**	**Relative (95% CI)**	**Absolute**		
Place of death (home)												
1	observational studies	very serious[a]	no serious inconsistency	Serious[b]	no serious imprecision	none	53/117 (45.3%)	10.4%	RR 4.34 (2.66 to 7.1)	347 more per 1000 (from 173 more to 634 more)	⊕OOO VERY LOW	CRITICAL
Place of death (hospice)												
1	observational studies	very serious[a]	no serious inconsistency	Serious[b]	very serious[c]	none	33/117 (28.2%)	27%	RR 1.04 (0.71 to 1.53)	11 more per 1000 (from 78 fewer to 143 more)	⊕OOO VERY LOW	CRITICAL
Place of death (hospital)												
1	observational studies	very serious[a]	no serious inconsistency	Serious[b]	no serious imprecision	none	26/117 (22.2%)	62.6%	RR 0.36 (0.25 to 0.51)	401 fewer per 1000 (from 307 fewer to 470 fewer)	⊕OOO VERY LOW	CRITICAL

[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 or 2 increments because the majority of the evidence had indirect outcomes
[c] Downgraded by 1 increment if the confidence interval crossed one MID or by 2 increments if the confidence interval crossed both MIDs

Table 50: Clinical evidence profile: Additional community services (routine) compared to usual care

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Additional community services (routine)	Usual care (Aiken 2006)	Relative (95% CI)	Absolute		
Number of visits to A&E (ED visits) 6 months (follow-up mean 6 months; Better indicated by lower values)												
1	randomised trials	very serious[a]	no serious inconsistency	no serious indirectness	no serious imprecision	none	101	91	-	MD 0.01 higher (0.08 lower to 0.1 higher)	⊕⊕OO LOW	IMPORTANT

[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

Table 51: Clinical evidence profile: Additional community services (routine) compared to usual care

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Additional community services (routine)	Usual care (Bakitas 2009)	Relative (95% CI)	Absolute		
Length of survival (mortality) at 14.6 months (follow-up mean 14.6 months)												
1	randomised trials	Serious[a]	no serious inconsistency	Serious[b]	no serious imprecision	none	112/161 (69.6%)	119/161 (73.9%)	RR 0.94 (0.82 to 1.08)	44 fewer per 1000 (from 133 fewer to 59 more)	⊕⊕OO LOW	CRITICAL

[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 or 2 increments because the majority of the evidence had indirect outcomes

Table 52: Clinical evidence profile: Additional community services (routine) compared to usual care

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Additional CommServ (routine)	Usual care (Bentur 2014)	Relative (95% CI)	Absolute		
ED visit (ED visit in the last 6 months of life) (follow-up mean 6 months)												
1	observational studies[a]	Serious[b]	no serious inconsistency	no serious indirectness	very serious[c]	none	21/40 (52.5%)	80/153 (52.3%)	RR 1 (0.72 to 1.4)	0 fewer per 1000 (from 146 fewer to 209 more)	⊕OOO VERY LOW	IMPORTANT
Hospitalisation (hospitalisation in the last 6 months of life) (follow-up mean 6 months)												
1	observational studies[a]	Serious[b]	no serious inconsistency	no serious indirectness	Serious[c]	none	36/40 (90%)	127/153 (83%)	RR 1.08 (0.96 to 1.23)	66 more per 1000 (from 33 fewer to 191 more)	⊕OOO VERY LOW	IMPORTANT
Preferred and actual place of death (people dying at home) (follow-up mean 6 months)												
1	observational studies[a]	Serious[b]	no serious inconsistency	Serious[d]	no serious imprecision	none	22/40 (55%)	40/153 (26.1%)	RR 2.1 (1.43 to 3.1)	288 more per 1000 (from 112 more to 549 more)	⊕OOO VERY LOW	CRITICAL

[1] Downgraded by 2 increments if the majority of the evidence was from studies with observational/non-randomised study design.
[2] 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
[3] Downgraded by 1 increment if the confidence interval crossed one MID or by 2 increments if the confidence interval crossed both MIDs
[4] Downgraded by 1 or 2 increments because the majority of the evidence had indirect outcomes

Table 53: Clinical evidence profile: Additional community services (routine) compared to usual care

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Additional CommServ (routine)	Usual care (Brian Cassel 2016)	Relative (95% CI)	Absolute		
Preferred and actual place of death (hospital - overall)												
1	observational studies	very serious[a]	no serious inconsistency	Serious[b]	no serious imprecision	none	31/368 (8.4%)	57.2%	RR 0.15 (0.1 to 0.21)	486 fewer per 1000 (from 452 fewer to 515 fewer)	⊕OOO VERY LOW	CRITICAL
Inappropriate/avoidable ICU admissions (people in ICU during admission) 30 d before death												
1	observational studies	very serious[a]	no serious inconsistency	Serious[b]	no serious imprecision	none	43/368 (11.7%)	49.8%	RR 0.23 (0.18 to 0.31)	383 fewer per 1000 (from 344 fewer to 408 fewer)	⊕OOO VERY LOW	IMPORTANT
Unscheduled admissions (people admitted to hospital - overall) within 30 d of death												
1	observational studies	very serious[a]	no serious inconsistency	Serious[b]	no serious imprecision	none	77/368 (20.9%)	70.7%	RR 0.3 (0.24 to 0.36)	495 fewer per 1000 (from 452 fewer to 537 fewer)	⊕OOO VERY LOW	IMPORTANT
Hospitalisation (number of hospital days/month - cancer group) 1- 18 months before death (Better indicated by lower values)												
1	observational studies	very serious[a]	no serious inconsistency	no serious indirectness	Serious[c]	none	37	111	-	MD 1.93 lower (2.8 to 1.06 lower)	⊕OOO VERY LOW	IMPORTANT
Hospitalisation (number of hospital days/month - COPD group) 1- 18 months before death (Better indicated by lower values)												
1	observational studies	very serious[a]	no serious inconsistency	no serious indirectness	Serious[c]	none	65	189	-	MD 0.99 lower (1.52 to 0.46 lower)	⊕OOO VERY LOW	IMPORTANT
Hospitalisation (number of hospital days/month - dementia group) 1- 18 months before death (Better indicated by lower values)												

1	observational studies	very serious[a]	no serious inconsistency	no serious indirectness	Serious[c]	none	92	276	-	MD 0.93 lower (1.46 to 0.4 lower)	⊕OOO VERY LOW	IMPORTANT
Hospitalisation (number of hospital days/month - HF group) 1- 18 months before death (Better indicated by lower values)												
1	observational studies	very serious[a]	no serious inconsistency	no serious indirectness	Serious[c]	none	174	499	-	MD 1.45 lower (1.79 to 1.11 lower)	⊕OOO VERY LOW	IMPORTANT
N of hospital visits (number of hospitalisation/month - cancer group) 1- 18 months before death (Better indicated by lower values)												
1	observational studies	very serious[a]	no serious inconsistency	no serious indirectness	Serious[c]	none	37	111	-	MD 0.25 lower (0.38 to 0.12 lower)	⊕OOO VERY LOW	IMPORTANT
N of hospital visits (number of hospitalisation/month - COPD group) 1- 18 months before death (Better indicated by lower values)												
1	observational studies	very serious[a]	no serious inconsistency	no serious indirectness	Serious[c]	none	65	189	-	MD 0.2 lower (0.29 to 0.11 lower)	⊕OOO VERY LOW	IMPORTANT
N of hospital visits (number of hospitalisation/month - dementia group) 1- 18 months before death (Better indicated by lower values)												
1	observational studies	very serious[a]	no serious inconsistency	no serious indirectness	Serious[c]	none	92	276	-	MD 0.16 lower (0.23 to 0.09 lower)	⊕OOO VERY LOW	IMPORTANT
N of hospital visits (number of hospitalisation/month - HF group) 1- 18 months before death (Better indicated by lower values)												
1	observational studies	very serious[a]	no serious inconsistency	no serious indirectness	Serious[c]	none	92	499	-	MD 0.23 lower (0.29 to 0.17 lower)	⊕OOO VERY LOW	IMPORTANT

[a] Downgraded by 2 increments if the majority of the evidence was from studies with observational/non-randomised study design. 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 or 2 increments because the majority of the evidence had indirect outcomes
[c] Downgraded by 1 increment if the confidence interval crossed 1 MID or by 2 increments if the confidence interval crossed both MIDs

Table 54: Clinical evidence profile: Additional community services (routine) compared to usual care

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Additional community service (routine)	Usual care (Brumley 2003)	Relative (95% CI)	Absolute		
People dying at home												
1	randomised trials	very serious[a]	no serious inconsistency	Serious[b]	no serious imprecision	none	138/159 (86.8%)	56.8%	RR 1.53 (1.31 to 1.79)	301 more per 1000 (from 176 more to 449 more)	⊕OOO VERY LOW	CRITICAL
Number of hospital visits (Better indicated by lower values)												
1	randomised trials	very serious[a]	no serious inconsistency	no serious indirectness	Serious[c]	none	161	139	-	MD 6.99 lower (9.46 to 4.52 lower)	⊕OOO VERY LOW	IMPORTANT
Number of visits to accident and emergency (ED visits) (Better indicated by lower values)												
1	randomised trials	very serious[a]	no serious inconsistency	no serious indirectness	Serious[c]	none	161	139	-	MD 1.37 lower (1.78 to 0.95 lower)	⊕OOO VERY LOW	IMPORTANT
Use of community services (physicians visits) (Better indicated by lower values)												
1	randomised trials	very serious[a]	no serious inconsistency	no serious indirectness	Serious[c]	none	161	139	-	MD 5.75 lower (8.9 to 2.6 lower)	⊕OOO VERY LOW	IMPORTANT
Use of community services (skilled nursing care visits) (Better indicated by lower values)												
1	randomised trials	very serious[a]	no serious inconsistency	no serious indirectness	Serious[c]	none	161	139	-	MD 3.72 lower (6.2 to 1.24 lower)	⊕OOO VERY LOW	IMPORTANT
Use of community services (total home health visits) (Better indicated by lower values)												
1	randomised trials	very serious[a]	no serious inconsistency	no serious indirectness	Serious[c]	none	161	139	-	MD 21.8 higher (14.63 to 28.98	⊕OOO	IMPORTANT

										higher)	VERY LOW	

[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 or 2 increments because the majority of the evidence had indirect outcomes
[c] Downgraded by 1 increment if the confidence interval crossed one MID or by 2 increments if the confidence interval crossed both MIDs

Table 55: Clinical evidence profile: Additional community services (routine) compared to usual care

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	**Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Additional community services (routine)**	**Usual care (Brumley 2007)**	**Relative (95% CI)**	**Absolute**		
Hospitalisation (people hospitalised) - MDT (In-home palliative care service) versus usual care												
1	randomised trials	Serious[a]	no serious inconsistency	no serious indirectness	no serious imprecision	none	52/145 (35.9%)	61.8%	RR 0.58 (0.45 to 0.75)	260 fewer per 1000 (from 154 fewer to 340 fewer)	⊕⊕⊕O MODERATE	IMPORTANT
N of visits to A&E (people accessing Emergency dept.) - MDT (In-home palliative care service) versus usual care												
1	randomised trials	Serious[a]	no serious inconsistency	Serious[b]	Serious[c]	none	29/145 (20%)	32.9%	RR 0.61 (0.41 to 0.9)	128 fewer per 1000 (from 33 fewer to 194 fewer)	⊕OOO VERY LOW	IMPORTANT
Length of survival (days of survival after enrolment) (Better indicated by higher values)												
1	randomised trials	Serious[a]	no serious inconsistency	no serious indirectness	no serious imprecision	none	145	152	-	MD 46 lower (87.51 to 4.49 lower)	⊕⊕⊕O MODERATE	CRITICAL
Use of community services (people enrolled in hospice) - MDT (In-home palliative care service) versus usual care												
1	randomised trials	Serious[a]	no serious inconsistency	no serious indirectness	Serious[c]	none	36/145 (24.8%)	36.2%	RR 0.69 (0.48 to 0.98)	112 fewer per 1000 (from 7 fewer to 188 fewer)	⊕⊕OO LOW	IMPORTANT

[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 because the majority of the evidence had indirect outcomes
[c] Downgraded by 1 increment if the confidence interval crossed one MID or by 2 increments if the confidence interval crossed both MIDs

Table 56: Clinical evidence profile: Additional community services (routine) compared to usual care

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Additional CommServ (routine)	Usual care (Chitnis 2013)	Relative (95% CI)	Absolute		
Preferred and actual place of death (home)												
1	observational studies	Serious[a]	no serious inconsistency	Serious[b]	no serious imprecision	none	22744/29538 (77%)	35%	RR 2.2 (2.16 to 2.24)	420 more per 1000 (from 406 more to 434 more)	⊕OOO VERY LOW	CRITICAL
Preferred and actual place of death (hospital)												
1	observational studies	Serious[a]	no serious inconsistency	Serious[b]	no serious imprecision	none	2363/29538 (8%)	41%	RR 0.2 (0.19 to 0.2)	328 fewer per 1000 (from 328 fewer to 332 fewer)	⊕OOO VERY LOW	CRITICAL
N of hospital visits (patients who attended outpatients) between first MCNS visit and death												
1	observational studies	Serious[a]	no serious inconsistency	no serious indirectness	no serious imprecision	none	2481/29538 (8.4%)	18.7%	RR 0.45 (0.43 to 0.47)	103 fewer per 1000 (from 99 fewer to 107 fewer)	⊕OOO VERY LOW	IMPORTANT
N of unscheduled admissions (people with emergency admissions) between first MCNS visit and death												
1	observational studies	Serious[a]	no serious inconsistency	Serious[b]	no serious imprecision	none	3249/29538 (11%)	35%	RR 0.31 (0.3 to 0.33)	241 fewer per 1000 (from 234 fewer to 245 fewer)	⊕OOO VERY LOW	IMPORTANT
N of visits to A&E (people who attended A&E) between first MCNS visit and death												

1	observational studies	Serious[a]	no serious inconsistency	no serious indirectness	no serious imprecision	none	2334/29538 (7.9%)	28.6%	RR 0.28 (0.26 to 0.29)	206 fewer per 1000 (from 203 fewer to 212 fewer)	⊕OOO VERY LOW	IMPORTANT

[a] Downgraded by 2 increments if the majority of the evidence was from studies with observational/non-randomised study design. 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 or 2 increments because the majority of the evidence had indirect outcomes

Table 57: Clinical evidence profile: Additional community services (routine) compared to usual care

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	**Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Additional CommServ (routine)**	**Usual care (Gray 1987)**	**Relative (95% CI)**	**Absolute**		
Preferred and actual place of death (home) up to 2 years												
1	observational studies	very serious[a]	no serious inconsistency	Serious[b]	no serious imprecision	none	59/98 (60.2%)	16.3%	RR 3.69 (2.29 to 5.94)	438 more per 1000 (from 210 more to 805 more)	⊕OOO VERY LOW	CRITICAL

[a] Downgraded by 2 increments if the majority of the evidence was from studies with observational/non-randomised study design. 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 or 2 increments because the majority of the evidence had indirect outcomes

Table 58: Clinical evidence profile: Additional community services (routine) compared to other additional community service (routine)

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	**Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Additional community**	**Other additional community services**	**Relative (95% CI)**	**Absolute**		

							services (routine)	**(routine) (Hughes 1992)**				
Length of survival (mortality at 6 months)												
1	randomised trials	Serious[a]	no serious inconsistency	Serious[b]	no serious imprecision	none	68/86 (79.1%)	77.7%	RR 1.02 (0.87 to 1.19)	16 more per 1000 (from 101 fewer to 148 more)	⊕⊕OO LOW	CRITICAL
Length of survival (Better indicated by higher values)												
1	randomised trials	Serious[a]	no serious inconsistency	no serious indirectness	no serious imprecision	none	86	85	-	MD 6.9 lower (27.17 lower to 13.37 higher)	⊕⊕⊕O MODERATE	CRITICAL
Length of survival (survival of people who died) (Better indicated by higher values)												
1	randomised trials	Serious[a]	no serious inconsistency	no serious indirectness	no serious imprecision	none	68	66	-	MD 6.5 lower (21.94 lower to 8.94 higher)	⊕⊕⊕O MODERATE	IMPORTANT
Length of stay (VA services - emergency room visits) (Better indicated by lower values)												
1	randomised trials	very serious[a]	no serious inconsistency	no serious indirectness	no serious imprecision	none	86	85	-	MD 0.15 lower (0.41 lower to 0.11 higher)	⊕⊕OO LOW	IMPORTANT
Length of stay (VA services - extended care days) (Better indicated by lower values)												
1	randomised trials	very serious[a]	no serious inconsistency	no serious indirectness	no serious imprecision	none	86	85	-	MD 0.38 higher (0.4 lower to 1.16 higher)	⊕⊕OO LOW	IMPORTANT
Length of stay (VA services - general bed days) (Better indicated by lower values)												
1	randomised trials	very serious[a]	no serious inconsistency	no serious indirectness	serious[3]	none	86	85	-	MD 6.43 lower (10.29 to 2.57 lower)	⊕OOO VERY LOW	IMPORTANT
Length of stay (VA services - intensive care hospital days) (Better indicated by lower values)												
1	randomised trials	very serious[a]	no serious inconsistency	no serious indirectness	no serious imprecision	none	86	85	-	MD 0.32 lower (1.15 lower to 0.51 higher)	⊕⊕OO LOW	IMPORTANT

Length of stay (VA services - intermediate bed days) (Better indicated by lower values)												
1	randomised trials	very serious[a]	no serious inconsistency	no serious indirectness	no serious imprecision	none	86	85	-	MD 1.48 higher (0.9 lower to 3.86 higher)	⊕⊕OO LOW	IMPORTANT
Length of stay (VA services - outpatient clinic visits) (Better indicated by lower values)												
1	randomised trials	very serious[a]	no serious inconsistency	no serious indirectness	Serious[c]	none	86	85	-	MD 1.86 lower (3.22 to 0.5 lower)	⊕OOO VERY LOW	IMPORTANT
Length of stay (VA services - rehabilitation days) (Better indicated by lower values)												
1	randomised trials	very serious[a]	no serious inconsistency	no serious indirectness	no serious imprecision	none	86	85	-	MD 1.86 lower (3.22 to 0.5 lower)	⊕⊕OO LOW	IMPORTANT
Length of stay (VA services - total days) (Better indicated by lower values)												
1	randomised trials	very serious[a]	no serious inconsistency	no serious indirectness	Serious[c]	none	86	85	-	MD 5.92 lower (11.03 to 0.81 lower)	⊕OOO VERY LOW	IMPORTANT

[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 because the majority of the evidence had indirect outcomes (not a measure of length of survival)
[c] Downgraded by 1 increment if the confidence interval crossed one MID or by 2 increments if the confidence interval crossed both MIDs

Table 59: Clinical evidence profile: Additional community services (routine) compared to usual care

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	**Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Additional CommServ (routine)**	**Usual care (Kim 2009)**	**Relative (95% CI)**	**Absolute**		
Quality of life: QUAL-E - Physical symptoms (1-5, higher scores indicate a better QoL) (follow-up mean 36 months; range of scores: 1-5; Better indicated by higher values)												

1	observational studies[a]	no serious risk of bias[a]	no serious inconsistency	no serious indirectness	no serious imprecision	none	30	46	-	MD 0.52 higher (0.07 to 0.97 higher)	⊕⊕OO LOW	CRITICAL
Quality of life: QUAL-E - Social relationships (1-5, higher scores indicate a better QoL) (follow-up mean 36 months; range of scores: 1-5; Better indicated by higher values)												
1	observational studies[a]	no serious risk of bias[a]	no serious inconsistency	no serious indirectness	no serious imprecision	none	30	46	-	MD 0.19 higher (0.15 lower to 0.53 higher)	⊕⊕OO LOW	CRITICAL
Quality of life: QUAL-E - Preparation (1-5, higher scores indicate a better QoL) (follow-up mean 36 months; range of scores: 1-5; Better indicated by higher values)												
1	observational studies[a]	no serious risk of bias[a]	no serious inconsistency	no serious indirectness	no serious imprecision	none	30	46	-	MD 0.12 lower (0.5 lower to 0.26 higher)	⊕⊕OO LOW	CRITICAL
Quality of life: QUAL-E - Control (1-5, higher scores indicate a better QoL) (follow-up mean 36 months; range of scores: 1-5; Better indicated by higher values)												
1	observational studies[a]	no serious risk of bias[a]	no serious inconsistency	no serious indirectness	no serious imprecision	none	30	46	-	MD 0.01 higher (0.24 lower to 0.26 higher)	⊕⊕OO LOW	CRITICAL
Quality of life: QUAL-E - Completion (1-5, higher scores indicate a better QoL) (follow-up mean 36 months; range of scores: 1-5; Better indicated by higher values)												
1	observational studies[a]	no serious risk of bias[a]	no serious inconsistency	no serious indirectness	no serious imprecision	none	30	46	-	MD 0.17 higher (0.15 lower to 0.49 higher)	⊕⊕OO LOW	CRITICAL
Length of stay (admission days in last 6 months) (follow-up mean 36 months; Better indicated by lower values)												
1	observational studies[a]	no serious risk of bias[a]	no serious inconsistency	no serious indirectness	no serious imprecision	none	30	46	-	MD 3.42 higher (19.61 lower to 26.45 higher)	⊕⊕OO LOW	IMPORTANT

[a] Downgraded by 2 increments if the majority of the evidence was from studies with observational/non-randomised study design.

Table 60: Clinical evidence profile: Additional community services (routine) compared to other additional community service

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Additional CommServ	Other additional CommServ (Leppert	Relative (95%	Absolute		

							(routine)	2012)	CI)			
QoL (EORTOC QLQ-C30 global) 14 days (range of scores: 0-100; Better indicated by higher values)												
1	observational studies	very serious[a]	no serious inconsistency	no serious indirectness	Serious[b]	none	25	25	-	MD 4.33 lower (13.73 lower to 5.07 higher)	⊕OOO VERY LOW	CRITICAL
QoL (EORTOC QLQ-C30 global) 28 days (range of scores: 0-100; Better indicated by higher values)												
1	observational studies	very serious[a]	no serious inconsistency	no serious indirectness	Serious[b]	none	25	25	-	MD 1.33 lower (9.51 lower to 6.85 higher)	⊕OOO VERY LOW	CRITICAL

[a] Downgraded by 2 increments if the majority of the evidence was from studies with observational/non-randomised study design. 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

Table 61: Clinical evidence profile: Additional community services (routine) compared to other additional community service

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	**Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Additional CommServ (routine)**	**Other additional CommServ (Leppert 2012)**	**Relative (95% CI)**	**Absolute**		
QoL (EORTOC QLQ-C15 PAL global) 7 days (follow-up mean 7 days; range of scores: 0-100; Better indicated by higher values)												
1	observational studies[1]	serious[a,b]	no serious inconsistency	no serious indirectness	no serious imprecision	none	51	51	-	MD 1.64 lower (5.44 lower to 2.16 higher)	⊕OOO VERY LOW	CRITICAL

[a] Downgraded by 2 increments if the majority of the evidence was from studies with observational/non-randomised study design.
[b] 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

Table 62: Clinical evidence profile: Additional community services (routine) compared to other additional community service

Quality assessment	No of patients	Effect	Quality	Importance

No of studies	**Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Additional CommServ (routine)**	**Other additional CommServ (Leppert 2012)**	**Relative (95% CI)**	**Absolute**		
QoL (EORTOC QLQ-C15 PAL global) 7 days (follow-up mean 7 days; range of scores: 0-100; Better indicated by higher values)												
1	observational studies	serious[a,b]	no serious inconsistency	no serious indirectness	no serious imprecision	none	51	27	-	MD 13.8 lower (18.74 to 8.86 lower)	⊕OOO VERY LOW	CRITICAL

[a] Downgraded by 2 increments if the majority of the evidence was from studies with observational/non-randomised study design.
[b] 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

Table 63: Clinical evidence profile: Additional community services (routine) compared to other additional community service

Quality assessment							**No of patients**		**Effect**		**Quality**	**Importance**
No of studies	**Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Additional CommServ (routine)**	**Other additional CommServ (Leppert 2012)**	**Relative (95% CI)**	**Absolute**		
QoL (EORTOC QLQ-C15 PAL global) 7 days (follow-up mean 7 days; range of scores: 0-100; Better indicated by higher values)												
1	observational studies	serious[a,b]	no serious inconsistency	no serious indirectness	no serious imprecision	none	51	27	-	MD 12.16 lower (16.63 to 7.69 lower)	⊕OOO VERY LOW	CRITICAL

[a] Downgraded by 2 increments if the majority of the evidence was from studies with observational/non-randomised study design.
[b] 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

Table 64: Clinical evidence profile: Additional community services (routine) compared to usual care

Quality assessment							**No of patients**		**Effect**		**Quality**	**Importance**
No of studies	**Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Additional CommServ**	**Usual care (Lustbader**	**Relative (95% CI)**	**Absolute**		

							(routine)	2017)				
Number of hospital admissions (follow-up mean 18 months)												
1	observational studies[a]	no serious risk of bias[a]	no serious inconsistency	no serious indirectness	no serious imprecision	none	3037/1000 (303.7%)	4634/1000 (463.4%)	Rate Ratio 0.66 (0.63 to 0.69)	1000 fewer per 1000 (from 1000 fewer to 1000 fewer)	⊕⊕OO LOW	IMPORTANT
Number of ED visits (follow-up mean 18 months)												
1	observational studies[a]	no serious risk of bias[a]	no serious inconsistency	no serious indirectness	Serious[b]	none	878/1000 (87.8%)	1097/1000 (109.7%)	Rate Ratio 0.8 (0.73 to 0.87)	219 fewer per 1000 (from 143 fewer to 296 fewer)	⊕OOO VERY LOW	IMPORTANT
Hospice enrollment (follow-up mean 18 months)												
1	observational studies[a]	no serious risk of bias[a]	no serious inconsistency	no serious indirectness	no serious imprecision	none	47/82 (57.3%)	211/569 (37.1%)	OR 2.28 (1.42 to 3.64)	203 more per 1000 (from 85 more to 311 more)	⊕⊕OO LOW	IMPORTANT

[a] Downgraded by 2 increments if the majority of the evidence was from studies with observational/non-randomised study design.
[b] Downgraded by 1 increment if the confidence interval crossed one MID or by 2 increments if the confidence interval crossed both MIDs

Table 65: Clinical evidence profile: Additional community services (routine) compared to usual care

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	**Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Additional CommServ (routine)**	**Usual care (Noble 2015)**	**Relative (95% CI)**	**Absolute**		
Preferred and actual place of death (home)												
1	observational studies	Serious[a]	no serious inconsistency	Serious[b]	no serious imprecision	none	143/201 (71.1%)	70%	RR 1.02 (0.92 to 1.12)	14 more per 1000 (from 56 fewer to 84 more)	⊕OOO VERY LOW	CRITICAL

[a] Downgraded by 2 increments if the majority of the evidence was from studies with observational/non-randomised study design. 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 or 2 increments because the majority of the evidence had indirect outcomes

Table 66: Clinical evidence profile: Additional community services (routine) compared to usual care

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Additional CommServ (routine)	Usual care (Ng 2017/Wong 2017)	Relative (95% CI)	Absolute		
Quality of life: MQOL-HK - Global score (0-10, higher scores indicate a better QoL) (follow-up mean 12 weeks; range of scores: 0-10; Better indicated by higher values)												
1	randomised trials	Serious[a]	no serious inconsistency	no serious indirectness	Serious[b]	none	43	41	-	MD 0.88 higher (0.34 to 1.42 higher)	⊕⊕OO LOW	CRITICAL
Quality of life: CHQ-C - Total score (1-7, higher scores indicate a better QoL) (follow-up mean 12 weeks; range of scores: 1-7; Better indicated by higher values)												
1	randomised trials	Serious[a]	no serious inconsistency	no serious indirectness	very serious[b]	none	43	41	-	MD 0.1 higher (0.95 lower to 1.15 higher)	⊕OOO VERY LOW	CRITICAL
Patient satisfaction: PSQ (1-5, higher scores indicate greater satisfaction) (follow-up mean 12 weeks; range of scores: 1-5; Better indicated by higher values)												
1	randomised trials	Serious[a]	no serious inconsistency	no serious indirectness	Serious[b]	none	37	30	-	MD 1.24 higher (0.35 to 2.13 higher)	⊕⊕OO LOW	IMPORTANT
Quality of life: SF-6D (0-1, higher scores indicate a better QoL) (follow-up mean 12 weeks; range of scores: 0-1; Better indicated by higher values)												
1	randomised trials	Serious[a]	no serious inconsistency	no serious indirectness	no serious imprecision	none	43	41	-	MD 0.01 higher (0.06 lower to 0.08 higher)	⊕⊕⊕O MODERATE	CRITICAL
Quality of life: QALY (0-1, higher scores indicate a better QoL) (follow-up mean 12 weeks; range of scores: 0-1; Better indicated by higher values)												
1	randomised trials	Serious[a]	no serious inconsistency	no serious indirectness	no serious imprecision	none	43	41	-	MD 0.01 higher (0 to 0.02 higher)	⊕⊕⊕O MODERATE	CRITICAL

Number of ED visits (follow-up mean 12 weeks)												
1	randomised trials	Serious[a]	no serious inconsistency	no serious indirectness	Serious[b]	none	31/43 (72.1%)	59/41 (143.9%)	Rate Ratio 0.55 (0.36 to 0.85)	648 fewer per 1000 (from 216 fewer to 921 fewer)	⊕⊕OO LOW	IMPORTANT
Length of hospital stay (per patient mean) (follow-up mean 12 weeks; Better indicated by lower values)												
1	randomised trials	Serious[a]	no serious inconsistency	no serious indirectness	Serious[b]	none	43	41	-	MD 6.7 lower (12.27 to 1.13 lower)	⊕⊕OO LOW	IMPORTANT

[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 one MID or by 2 increments if the confidence interval crossed both MIDs

Table 67: Clinical evidence profile: Additional community services (routine) compared to usual care

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	**Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Additional CommServ (routine)**	**Usual care (Pattenden 2013))**	**Relative (95% CI)**	**Absolute**		
Number of unscheduled admissions (N of patients admitted)												
1	observational studies	Serious[a]	no serious inconsistency	Serious[b]	Serious[c]	none	41/99 (41.4%)	64.3%	RR 0.64 (0.49 to 0.85)	231 fewer per 1000 (from 96 fewer to 328 fewer)	⊕OOO VERY LOW	IMPORTANT
Length of stay (Bradford) (Better indicated by lower values)												
1	observational studies	Serious[a]	no serious inconsistency	no serious indirectness	Serious[c]	none	62	76	-	MD 2.4 lower (5.69 lower to 0.89 higher)	⊕OOO VERY LOW	IMPORTANT
Length of stay (Poole) (Better indicated by lower values)												

1	observational studies	Serious[a]	no serious inconsistency	no serious indirectness	Serious[c]	none	37	22	-	MD 1 higher (6.02 lower to 8.02 higher)	⊕OOO VERY LOW	IMPORTANT
N of unscheduled admissions (N of admissions per patient - Bradford) (Better indicated by lower values)												
1	observational studies	Serious[a]	no serious inconsistency	Serious[b]	Serious[c]	none	62	76	-	MD 0.3 lower (0.85 lower to 0.25 higher)	⊕OOO VERY LOW	IMPORTANT
N of unscheduled admissions (N of admissions per patient - Poole) (Better indicated by lower values)												
1	observational studies	Serious[a]	no serious inconsistency	Serious[b]	very serious[3]	none	37	22	-	MD 1 lower (1.54 to 0.46 lower)	⊕OOO VERY LOW	IMPORTANT

[a] Downgraded by 2 increments if the majority of the evidence was from studies with observational/non-randomised study design. 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 or 2 increments because the majority of the evidence had indirect outcomes
[c] Downgraded by 1 increment if the confidence interval crossed 1 MID or by 2 increments if the confidence interval crossed both MIDs

Table 68: Clinical evidence profile: Additional community services (routine) compared to usual care

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	**Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Additional community services (routine)**	**Usual care (Riolfi 2014)**	**Relative (95% CI)**	**Absolute**		
Preferred and actual place of death (Place of death - hospital) - Palliative home care service versus usual care												
1	observational studies	Serious[a]	no serious inconsistency	very serious[b,c]	no serious imprecision	none	37/160 (23.1%)	73.6%	RR 0.31 (0.23 to 0.42)	508 fewer per 1000 (from 427 fewer to 567 fewer)	⊕OOO VERY LOW	CRITICAL
Preferred and actual place of death (Place of death - country hospital) - Palliative home care service versus usual care												
1	observational	Serious[a]	no serious	very	no serious	none	24/160	6.2%	RR 2.42	88 more per 1000	⊕OOO	CRITICAL

	studies		inconsistency	serious[b,c]	imprecision		(15%)		(1.31 to 4.47)	(from 19 more to 215 more)	VERY LOW	
Preferred and actual place of death (Place of death - home) - Palliative home care service versus usual care												
1	observational studies	Serious[a]	no serious inconsistency	very serious[b,c]	no serious imprecision	none	86/160 (53.8%)	7.9%	RR 6.85 (4.34 to 10.79)	462 more per 1000 (from 264 more to 773 more)	⊕OOO VERY LOW	CRITICAL
Preferred and actual place of death (Place of death - nursing home) - Palliative home care service versus usual care												
1	observational studies	Serious[a]	no serious inconsistency	very serious[b,c]	Serious[d]	none	13/160 (8.1%)	12.4%	RR 0.66 (0.35 to 1.22)	42 fewer per 1000 (from 81 fewer to 27 more)	⊕OOO VERY LOW	CRITICAL
Hospitalisation (number of hospitalisations in last 2 months of life) - Palliative home care service versus usual care (Better indicated by lower values)												
1	observational studies	Serious[a]	no serious inconsistency	Serious[c]	no serious imprecision	none	160	242	-	MD 0.9 lower (1.07 to 0.73 lower)	⊕OOO VERY LOW	IMPORTANT
Length of stay (time spent in hospital in the last 2 months of life) - Palliative home care service versus usual care (Better indicated by lower values)												
1	observational studies	Serious[a]	no serious inconsistency	Serious[c]	no serious imprecision	none	160	242	-	MD 15.2 lower (18.08 to 12.32 lower)	⊕OOO VERY LOW	IMPORTANT

[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] The majority of the evidence had indirect outcomes (preferred place of death not reported)
[c] The majority of the evidence was based on indirect intervention.
[d] Downgraded by 1 increment if the confidence interval crossed 1 MID or downgraded by 2 increments if the confidence interval crossed both MIDs

Table 69: Clinical evidence profile: Additional community services (routine) compared to usual care

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	**Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Additional CommServ (routine)**	**Usual care (Seow 2008)**	**Relative (95% CI)**	**Absolute**		

Length of survival (deaths since referral (120+ days))											
1	observational studies	no serious risk of bias	no serious inconsistency	no serious indirectness	Serious[a]	none	21/69 (30.4%)	45%	RR 0.68 (0.37 to 1.23)	144 fewer per 1000 (from 283 fewer to 104 more)	⊕OOO VERY LOW	CRITICAL
Length of survival (deaths since referral (31-120 days))											
1	observational studies	no serious risk of bias	no serious inconsistency	no serious indirectness	very serious[b]	none	20/69 (29%)	40%	RR 0.72 (0.38 to 1.39)	112 fewer per 1000 (from 248 fewer to 156 more)	⊕OOO VERY LOW	CRITICAL
Length of survival (deaths since referral (8-30 days))											
1	observational studies	no serious risk of bias	no serious inconsistency	no serious indirectness	serious[2]	none	28/69 (40.6%)	15%	RR 2.71 (0.92 to 7.98)	257 more per 1000 (from 12 fewer to 1000 more)	⊕OOO VERY LOW	CRITICAL

[a] Downgraded by 2 increments if the majority of the evidence was from studies with observational/non-randomised study design. Downgraded by 1 increment if the confidence interval crossed 1 MID or by 2 increments if the confidence interval crossed both MIDs
[b] Downgraded by 1 increment if the confidence interval crossed 1 MID or by 2 increments if the confidence interval crossed both MIDs

Table 70: Clinical evidence profile: Additional community service (routine) versus usual care

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	**Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Additional CommServ (emergency) - SPC team**	**Usual care (Seow 2014)**	**Relative (95% CI)**	**Absolute**		
Preferred and actual place of death (Place of death - hospital) - Specialist palliative care team versus usual care												
1	observational studies	Serious[a]	no serious inconsistency	Serious[b]	no serious imprecision	none	503/3109 (16.2%)	28.5%	RR 0.57 (0.51 to 0.63)	123 fewer per 1000 (from 105 fewer to 140 fewer)	⊕OOO VERY LOW	CRITICAL
Hospitalisation (last 2 weeks of life) - Specialist palliative care team versus usual care												

1	observational studies	Serious[a]	no serious inconsistency	no serious indirectness	Serious[c]	none	970/3109 (31.2%)	39.2%	RR 0.80 (0.74 to 0.85)	78 fewer per 1000 (from 59 fewer to 102 fewer)	⊕OOO VERY LOW	IMPORTANT
Number of visits to A&E (last two weeks of life) - Specialist palliative care team versus usual care												
1	observational studies	Serious[a]	no serious inconsistency	no serious indirectness	no serious imprecision	none	896/3109 (28.8%)	34.4%	RR 0.84 (0.78 to 0.9)	55 fewer per 1000 (from 34 fewer to 76 fewer)	⊕OOO VERY LOW	IMPORTANT

[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] The majority of the evidence had indirect outcomes (preferred place of death not reported)
[c] Downgraded by 1 increment if the confidence interval crossed 1 MID or downgraded by 2 increments if the confidence interval crossed both MIDs

Table 71: Clinical evidence profile: Additional community services (routine) compared to usual care

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	**Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Additional CommServ (routine)**	**Usual care (Sessa 1996)**	**Relative (95% CI)**	**Absolute**		
Preferred and actual place of death (people dying at home)												
1	observational studies	Serious[a]	no serious inconsistency	Serious[b]	no serious imprecision	none	138/317 (43.5%)	11%	RR 3.98 (3.1 to 5.1)	328 more per 1000 (from 231 more to 451 more)	⊕OOO VERY LOW	CRITICAL
Preferred and actual place of death (people dying at hospital)												
1	observational studies	Serious[a]	no serious inconsistency	Serious[b]	Serious[c]	none	162/317 (51.1%)	74.6%	RR 0.69 (0.61 to 0.77)	231 fewer per 1000 (from 172 fewer to 291 fewer)	⊕OOO VERY LOW	CRITICAL
Preferred and actual place of death (people dying at nursing home or private clinic)												
1	observational studies	Serious[a]	no serious inconsistency	Serious[b]	no serious imprecision	none	16/317 (5%)	13.5%	RR 0.37 (0.22 to	85 fewer per 1000 (from 50 fewer to 105	⊕OOO VERY	CRITICAL

									0.63)	fewer)	LOW	
N of unscheduled admissions (people with >3 hospitalisations) 3 months before death												
1	observational studies	Serious[a]	no serious inconsistency	Serious[b]	very serious[c]	none	38/317 (12%)	13%	RR 0.92 (0.64 to 1.31)	10 fewer per 1000 (from 47 fewer to 40 more)	⊕OOO VERY LOW	IMPORTANT
N of unscheduled admissions (people with 1-2 hospitalisations) 3 months before death												
1	observational studies	Serious[a]	no serious inconsistency	Serious[b]	no serious imprecision	none	216/317 (68.1%)	78%	RR 0.87 (0.8 to 0.95)	101 fewer per 1000 (from 39 fewer to 156 fewer)	⊕OOO VERY LOW	IMPORTANT

[a] Downgraded by 2 increments if the majority of the evidence was from studies with observational/non-randomised study design. 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 or 2 increments because the majority of the evidence had indirect outcomes
[c] Downgraded by 1 increment if the confidence interval crossed 1 MID or by 2 increments if the confidence interval crossed both MIDs

Table 72: Clinical evidence profile: Additional community services (routine) compared to usual care

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	**Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Additional CommServ (routine)**	**Usual care (Smeenk 1998))**	**Relative (95% CI)**	**Absolute**		
Preferred and actual place of death (people dying at home)												
1	observational studies	Serious[a]	no serious inconsistency	Serious[b]	Serious[c]	none	64/79 (81%)	64.9%	RR 1.25 (0.96 to 1.62)	162 more per 1000 (from 26 fewer to 402 more)	⊕OOO VERY LOW	CRITICAL
Length of stay (days in hospital at rehospitalisation) (Better indicated by lower values)												
1	observational studies	Serious[a]	no serious inconsistency	no serious indirectness	Serious[c]	none	79	37	-	MD 5.7 lower (11.89 lower to 0.49 higher)	⊕OOO VERY LOW	IMPORTANT

Length of survival (days of survival) (Better indicated by higher values)												
1	observational studies	Serious[a]	no serious inconsistency	no serious indirectness	Serious[c]	none	79	37	-	MD 32.4 higher (8.59 lower to 73.39 higher)	⊕OOO VERY LOW	CRITICAL

[a] Downgraded by 2 increments if the majority of the evidence was from studies with observational/non-randomised study design. 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 or 2 increments because the majority of the evidence had indirect outcomes
[c] Downgraded by 1 increment if the confidence interval crossed 1 MID or by 2 increments if the confidence interval crossed both MIDs

Table 73: Clinical evidence profile: Additional community service (routine) versus usual care

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	**Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Additional CommServ (routine)**	**Usual care (Youens 2017)**	**Relative (95% CI)**	**Absolute**		
Preferred and actual place of death (people dying in hospital) (follow-up 10 years)												
1	observational studies[a]	no serious risk of bias	no serious inconsistency	Serious[b]	no serious imprecision	none	8421/16530 (50.9%)	9130/12031 (75.9%)	RR 0.67 (0.66 to 0.68)	250 fewer per 1000 (from 243 fewer to 258 fewer)	⊕OOO VERY LOW	CRITICAL
Preferred and actual place of death (people dying out of hospital) (follow-up 10 years)												
1	observational studies[a]	no serious risk of bias	no serious inconsistency	Serious[b]	no serious imprecision	none	8109/16530 (49.1%)	2901/12031 (24.1%)	RR 2.03 (1.96 to 2.11)	248 more per 1000 (from 231 more to 268 more)	⊕OOO VERY LOW	CRITICAL
Hospitalisation (hospitalisation in the last 12 months of life) (follow-up 10 years)												
1	observational studies[a]	no serious risk of bias	no serious inconsistency	no serious indirectness	no serious imprecision	none	-	-	Not estimable	-	⊕⊕OO LOW	IMPORTANT

Unplanned hospitalisation (in the last 12 months of life) (follow-up 10 years)												
1	observational studies[a]	no serious risk of bias	no serious inconsistency	no serious indirectness	no serious imprecision	none	-	-	Not estimable	-	⊕⊕OO LOW	IMPORTANT
ED presentation (in the last 12 months of life) (follow-up 10 years)												
1	observational studies[a]	no serious risk of bias	no serious inconsistency	no serious indirectness	no serious imprecision	none	-	-	Not estimable	-	⊕⊕OO LOW	IMPORTANT
Length of stay for inpatient hospitalisation (last 12 months of life) (follow-up 10 years; Better indicated by lower values)												
1	observational studies	no serious risk of bias	no serious inconsistency	no serious indirectness	no serious imprecision	none	16530	12031	-	MD 4.19 lower (4.58 to 3.8 lower)	⊕⊕OO LOW	IMPORTANT

[a] Downgraded by 2 increments if the majority of the evidence was from studies with observational/non-randomised study design.
[b] Downgraded by 1 or 2 increments because the majority of the evidence had indirect outcomes

F.2 Availability of additional community services in an emergency/acute scenario

Table 74: Clinical evidence profile: Additional community service (acute/emergency basis) – RRS available versus usual care – RRS not available

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	**Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Additional CommServ (emergency)**	**Usual care (Casarette 2015)**	**Relative (95% CI)**	**Absolute**		
Preferred and actual place of death (people dying in inpatient hospice)												
1	observational studies[a]	no serious risk of bias	no serious inconsistency	serious[b]	no serious imprecision	none	350/8524 (4.1%)	2030/16134 (12.6%)	RR 0.33 (0.29 to 0.36)	84 fewer per 1000 (from 81 fewer to 89 fewer)	⊕OOO VERY LOW	CRITICAL

[a] Downgraded by 2 increments if the majority of the evidence was from studies with observational/non-randomised study design.
[b] Downgraded by 1 or 2 increments because the majority of the evidence had indirect outcomes

Table 75: Clinical evidence profile: Additional community service (acute/emergency basis) – RRS available versus usual care – RRS not available

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Additional CommServ (emergency) - RRS available	Usual care (RRS not available) (Gage 2015 - Holdsworth 2015)	Relative (95% CI)	Absolute		
Carers quality of life (EQ5D) 8 months - Rapid response service available versus rapid response service not available (Better indicated by lower values)												
1	observational studies	serious[a]	no serious inconsistency	no serious indirectness	serious[b]	none	48	16	-	MD 0.05 lower (0.12 lower to 0.02 higher)	⊕OOO VERY LOW	CRITICAL
Carers quality of life (SF12 Physical) 8 months - Rapid response service available versus rapid response service not available (range of scores: 0-100; Better indicated by higher values)												
1	observational studies	serious[a]	no serious inconsistency	no serious indirectness	serious[b]	none	48	16	-	MD 1.86 higher (0.99 lower to 4.71 higher)	⊕OOO VERY LOW	CRITICAL
Carers quality of life (SF12 Mental) 8 months - Rapid response service available versus rapid response service not available (range of scores: 0-100; Better indicated by higher values)												
1	observational studies	serious[a]	no serious inconsistency	no serious indirectness	serious[b]	none	48	16	-	MD 4.93 lower (8 to 1.86 lower)	⊕OOO VERY LOW	CRITICAL
Preferred and actual place of death (Achieved (initial) place of death) - Rapid response service available versus rapid response service not available												
1	observational studies	serious[a]	no serious inconsistency	no serious indirectness	no serious imprecision	none	429/688 (62.4%)	61.9%	RR 1.01 (0.9 to 1.13)	6 more per 1000 (from 62 fewer to 80 more)	⊕OOO VERY LOW	CRITICAL

Preferred and actual place of death (Achieved (final) place of death) - Rapid response service available versus rapid response service not available												
1	observational studies	serious[a]	no serious inconsistency	no serious indirectness	no serious imprecision	none	454/688 (66%)	69.8%	RR 0.95 (0.86 to 1.04)	35 fewer per 1000 (from 98 fewer to 28 more)	⊕OOO VERY LOW	CRITICAL

[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 downgraded by 2 increments if the confidence interval crossed both MIDs

Table 76: Clinical evidence profile: Additional community service (acute/emergency basis) – RRS users versus usual care – RRS non-users

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	**Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Additional CommServ (emergency) - RRS users**	**Usual care (RRS non-users) (Gage 2015 - Holdsworth 2015)**	**Relative (95% CI)**	**Absolute**		
Preferred and actual place of death (Achieved (initial) place of death) - Rapid response service users versus rapid response service non-users)												
1	observational studies	Serious[a]	no serious inconsistency	no serious indirectness	serious[b]	none	171/247 (69.2%)	59.2%	RR 1.17 (1.04 to 1.31)	101 more per 1000 (from 24 more to 184 more)	⊕OOO VERY LOW	CRITICAL
Number of visits to A&E (N with >1 contact with acute care) - Rapid response service users versus Rapid response service non-users												
1	observational studies	serious[a]	no serious inconsistency	no serious indirectness	no serious imprecision	none	129/247 (52.2%)	56.5%	RR 0.92 (0.8 to 1.07)	45 fewer per 1000 (from 113 fewer to 40 more)	⊕OOO VERY LOW	IMPORTANT
Use of community services (N with >1 contact with GP/primary care) - Rapid response service users versus Rapid response service non-users												
1	observational studies	serious[a]	no serious inconsistency	no serious indirectness	serious[b]	none	139/159 (87.4%)	71.9%	RR 1.22 (1.11 to	158 more per 1000 (from 79	⊕OOO VERY	IMPORTANT

									1.34)	more to 244 more)	LOW	
Use of community services (N with>1 contact with community care) - Rapid response service users versus Rapid response service non-users												
1	observational studies	serious[a]	no serious inconsistency	no serious indirectness	serious[b]	none	223/247 (90.3%)	69.4%	RR 1.3 (1.21 to 1.4)	208 more per 1000 (from 146 more to 278 more)	⊕OOO VERY LOW	IMPORTANT
Use of community services (N with >1 contact with Marie Curie visits) - Rapid response service users versus Rapid response service non-users												
1	observational studies	serious[a]	no serious inconsistency	no serious indirectness	no serious imprecision	none	33/247 (13.4%)	1.4%	RR 9.82 (4.17 to 23.11)	123 more per 1000 (from 44 more to 310 more)	⊕OOO VERY LOW	IMPORTANT
Use of community services (N with >1 contact with out of hours services) - Rapid response service users versus Rapid response service non-users												
1	observational studies	serious[a]	no serious inconsistency	no serious indirectness	no serious imprecision	none	99/247 (40.1%)	19.1%	RR 2.1 (1.65 to 2.69)	210 more per 1000 (from 124 more to 323 more)	⊕OOO VERY LOW	IMPORTANT
Use of community services (N with >1 contact with hospice) - Rapid response service users versus Rapid response service non-users												
1	observational studies	serious[a]	no serious inconsistency	no serious indirectness	no serious imprecision	none	247/247 (100%)	100%	RR 1 (0.99 to 1.01)	0 fewer per 1000 (from 10 fewer to 10 more)	⊕OOO VERY LOW	IMPORTANT
Use of community services (N receiving >1 social service) - Rapid response service users versus Rapid response service non-users												
1	observational studies	serious[a]	no serious inconsistency	no serious indirectness	serious[b]	none	40/247 (16.2%)	13.6%	RR 1.19 (0.82 to 1.72)	26 more per 1000 (from 24 fewer to 98 more)	⊕OOO VERY LOW	IMPORTANT

[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 downgraded by 2 increments if the confidence interval crossed both MIDs

Table 77: Clinical evidence profile: Additional community service (acute/emergency basis) versus usual care

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Additional CommServ (emergency)	Usual care (McCaffrey 2013)	Relative (95% CI)	Absolute		
Preferred and actual place of death (people dying at home) 28 days												
1	randomised trials	very serious[a]	no serious inconsistency	serious[b]	very serious[c]	none	9/16 (56.3%)	80%	RR 0.7 (0.38 to 1.3)	240 fewer per 1000 (from 496 fewer to 240 more)	⊕OOO VERY LOW	CRITICAL

[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 or 2 increments because the majority of the evidence had indirect outcomes
[c] Downgraded by 1 increment if the confidence interval crossed 1 MID or by 2 increments if the confidence interval crossed both MIDs

Table 78: Clinical evidence profile: Additional community service (acute/emergency basis) versus usual care

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Additional CommServ (emergency) - DCP with OOH	Usual care (Purdy 2015)	Relative (95% CI)	Absolute		
Preferred and actual place of death (Place of death - acute hospital) - Delivering Choice Programme (with out of hours) users versus Delivering Choice Programme (with out of hours) non-users												
1	observational studies	serious[a]	no serious inconsistency	serious[b]	no serious imprecision	none	84/616 (13.6%)	42.7%	RR 0.32 (0.26 to 0.39)	290 fewer per 1000 (from 260 fewer to 316 fewer)	⊕OOO VERY LOW	CRITICAL
Preferred and actual place of death (Place of death - community hospital) - Delivering Choice Programme (with out of hours) users versus Delivering Choice Programme (with out of hours) non-users												

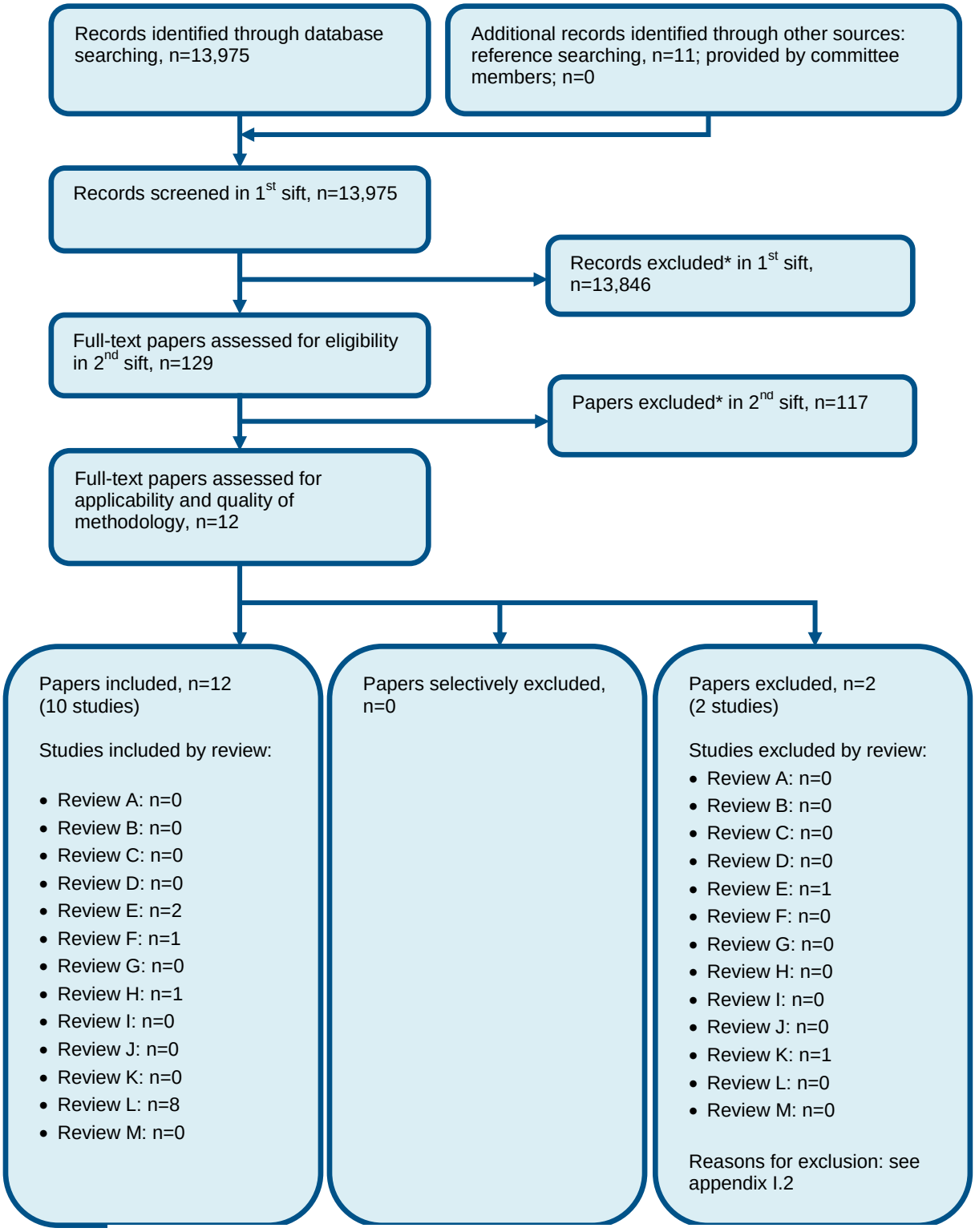
1	observational studies	serious[a]	no serious inconsistency	serious[b]	no serious imprecision	none	31/616 (5%)	1.6%	RR 3.18 (1.95 to 5.18)	35 more per 1000 (from 15 more to 67 more)	⊕OOO VERY LOW	CRITICAL
Preferred and actual place of death (Place of death - home) - Delivering Choice Programme (with out of hours) users versus Delivering Choice Programme (with out of hours) non-users												
1	observational studies	Serious[a]	no serious inconsistency	serious[b]	no serious imprecision	none	337/616 (54.7%)	39.8%	RR 1.37 (1.26 to 1.5)	147 more per 1000 (from 103 more to 199 more)	⊕OOO VERY LOW	CRITICAL
Preferred and actual place of death (Place of death - care home) - Delivering Choice Programme (with out of hours) users versus Delivering Choice Programme (with out of hours) non-users												
1	observational studies	serious[a]	no serious inconsistency	serious[b]	serious[c]	none	58/616 (9.4%)	8.8%	RR 1.06 (0.8 to 1.41)	5 more per 1000 (from 18 fewer to 36 more)	⊕OOO VERY LOW	CRITICAL
Preferred and actual place of death (Place of death - hospice) - Delivering Choice Programme (with out of hours) users versus Delivering Choice Programme (with out of hours) non-users												
1	observational studies	serious[a]	no serious inconsistency	serious[b]	no serious imprecision	none	98/616 (15.9%)	2.8%	RR 5.66 (4.12 to 7.77)	130 more per 1000 (from 87 more to 190 more)	⊕OOO VERY LOW	CRITICAL
Preferred and actual place of death (Place of death - elsewhere) - Delivering Choice Programme (with out of hours) users versus Delivering Choice Programme (with out of hours) non-users												
1	observational studies	serious[a]	no serious inconsistency	serious[b]	serious[c]	none	8/616 (1.3%)	0.6%	RR 2.12 (0.87 to 5.15)	7 more per 1000 (from 1 fewer to 25 more)	⊕OOO VERY LOW	CRITICAL
Number of hospital visits (patients with one or more emergency admissions <30 days) - Delivering Choice Programme (with out of hours) users versus Delivering Choice Programme (with out of hours) non-users												
1	observational studies	serious[a]	no serious inconsistency	no serious indirectness	no serious imprecision	none	233/616 (37.8%)	44.7%	RR 0.85 (0.76 to 0.95)	67 fewer per 1000 (from 22 fewer to 107 fewer)	⊕OOO VERY LOW	IMPORTANT
Number of hospital visits (patients with one or more emergency admissions <7 days) - Delivering Choice Programme (with out of hours) users versus Delivering Choice Programme (with out of hours) non-users												
1	observational studies	serious[a]	no serious inconsistency	no serious indirectness	no serious imprecision	none	60/616 (9.7%)	23.9%	RR 0.41 (0.32 to	141 fewer per 1000 (from 112 fewer to	⊕OOO VERY	IMPORTANT

									0.53)	163 fewer)	LOW	
Number of hospital visits (mean emergency admissions per patient <30 days) - Delivering Choice Programme (with out of hours) users versus Delivering Choice Programme (with out of hours) non-users (Better indicated by lower values)												
1	observational studies	serious[a]	no serious inconsistency	no serious indirectness	no serious imprecision	none	616	1956	-	MD 0.08 higher (0.02 to 0.14 higher)	⊕OOO VERY LOW	IMPORTANT
Number of hospital visits (mean emergency admissions per patient <7 days) - Delivering Choice Programme (with out of hours) users versus Delivering Choice Programme (with out of hours) non-users (Better indicated by lower values)												
1	observational studies	serious[a]	no serious inconsistency	no serious indirectness	no serious imprecision	none	616	1956	-	MD 0.14 lower (0.17 to 0.11 lower)	⊕OOO VERY LOW	IMPORTANT
Number of visits to A&E (patients with one or more ED attendance <30 days) - Delivering Choice Programme (with out of hours) users versus Delivering Choice Programme (with out of hours) non-users												
1	observational studies	serious[a]	no serious inconsistency	no serious indirectness	serious[c]	none	159/616 (25.8%)	36.4%	RR 0.71 (0.61 to 0.82)	106 fewer per 1000 (from 66 fewer to 142 fewer)	⊕OOO VERY LOW	IMPORTANT
Number of visits to A&E (patients with one or more ED attendance <7 days) - Delivering Choice Programme (with out of hours) users versus Delivering Choice Programme (with out of hours) non-users												
1	observational studies	serious[a]	no serious inconsistency	no serious indirectness	no serious imprecision	none	43/616 (7%)	22.1%	RR 0.32 (0.23 to 0.43)	150 fewer per 1000 (from 126 fewer to 170 fewer)	⊕OOO VERY LOW	IMPORTANT
Number of visits to A&E (mean ED attendance per patient <30 days) - Delivering Choice Programme (with out of hours) users versus Delivering Choice Programme (with out of hours) non-users (Better indicated by lower values)												
1	observational studies	serious[a]	no serious inconsistency	no serious indirectness	no serious imprecision	none	616	1956	-	MD 0.02 lower (0.07 lower to 0.03 higher)	⊕OOO VERY LOW	IMPORTANT
Number of visits to A&E (mean ED attendance per patient <7 days) - Delivering Choice Programme (with out of hours) users versus Delivering Choice Programme (with out of hours) non-users (Better indicated by lower values)												
1	observational studies	serious[a]	no serious inconsistency	no serious indirectness	serious[c]	none	616	1956	-	MD 0.19 lower (0.22 to 0.16 lower)	⊕OOO VERY LOW	IMPORTANT

[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] The majority of the evidence had indirect outcomes (preferred place of death not reported)
[c] Downgraded by 1 increment if the confidence interval crossed 1 MID or downgraded by 2 increments if the confidence interval crossed both MIDs

Appendix G: Health economic evidence selection

Figure 155: Flow chart of health economic study selection for the guideline



* Non-relevant population, intervention, comparison, design or setting; non-English language

Appendix H: Health economic evidence tables

H.1 Availability of additional community services on a regular/routine basis

Study	Abel 2013 [1]			
Study details	Population & interventions	Costs	Health outcomes	Cost-effectiveness
Economic analysis: CCA Study design: Retrospective cohort analysis with multivariate regression Approach to analysis: Retrospective analysis of the use of Advanced Care Planning (ACP) over a 2.5 year period in a population of people in a London Hospice. Resource use identified such as number of day in hospital in the last year of life was costed. Perspective: UK NHS Time horizon/Follow-up 2.5 years Discounting: Costs:	Population: Patients who were known to a Hospice in London and who died between 01 January 2009 and 30 June 2011. All patients had a life limiting disease and were referred to the hospice for specialist palliative care. Patient characteristics: N = 969 Mean age: 75 Male: 52% Intervention 1: No advance care planning. Only specialist palliative care. N = 422 Intervention 2: Advanced Care Planning, in addition to specialist palliative care. (ACP is provided using a document called 'Planning	Total costs of emergency admissions in the last year of life (mean per patient): Intervention 1: £5,690 Intervention 2: £5,260 Incremental (2−1): £430 lower (95% CI: NR; p=NR) Currency & cost year: UK pounds (cost year not stated, assume 1 year prior to being sent for publication so 2011) Cost components incorporated: Cost of hospital admissions	Proportion with at least one emergency admission: Intervention 1: 91% Intervention 2: 88% Incremental (2−1): 3% fewer (95% CI: NR; p=NR) Proportion dying in hospital: Intervention 1: 26% Intervention 2: 11% Incremental (2−1): 15% fewer (95% CI: NR; p=NR) Mean length of stay for those with or without an admission: Intervention 1: 26.4 Intervention 2: 18.1 Incremental (2−1): -8.3 (95% CI: NR; p=NR)	ICER (Intervention 2 versus Intervention 1): NA Analysis of uncertainty: None.

Study	Abel 2013 [1]			
NA; Outcomes: NA	Ahead', which combines a modified version of the 'Preferred Priorities for Care' document with a 'Putting Affairs in Order' guide and an 'Advance Decision to Refuse Treatment' document. It is part of hospice assessment paperwork and is given to patients and families at an appropriate time. The hospice uses an electronic patient record for all clinical notes, and there are fields for ACP so it was assumed that ACP discussions had taken place if the patient records indicated a preferred place of death. N = 547		Mean number of admissions in the last year of life (per patient): Intervention 1: 6.1 Intervention 2: 5.4 Incremental (2−1): 0.7 fewer (95% CI: NR; p=NR)	
Data sources				
Health outcomes: Data from electronic patient records. The Secondary Care User Services database was used to match patient identifying information to find the number of days in hospital each patient spent in the last year of life. Quality-of-life weights: NA. Cost sources: "The cost figures were actual costs adjusted for length of stay and complexity of care, as per national agreement". Not specifically stated where costs are from for example: NHS reference costs. The main costs that the study mentions are the mean costs of hospital care for those who died in hospital and out of hospital, but this does not separate people by the intervention (ACP or not), so this cost is not reported in the table above. Instead the only cost reported based on the intervention and comparator group is from table 5 and is the mean cost of emergency admissions.				
Comments				
Source of funding: NR. Limitations: Right population and intervention. Only a CCA. No costs of the intervention. Doesn't report many costs for example: non-emergency admissions. The study states that the deaths in hospital in the baseline group are low compared to the national average, therefore the lack of differences in costs (that the study reports of emergency admissions) could be explained by the fact that the specialist palliative care services in both groups are already reducing hospital resource use, and so the impact of ACP could be more about getting people to die in their preferred place (which could however reduce cost as the study also showed that mean hospital care costs are higher for those who died in hospital).				
Overall applicability: Partially applicable [(a)] Overall quality: Potentially serious limitations [(b)]				

Abbreviations: CCA: cost-consequence analysis; 95% CI: 95% confidence interval; ICER: incremental cost-effectiveness ratio; NR: not reported; pa: probabilistic analysis;

(a) Directly applicable / Partially applicable / Not applicable
(b) Minor limitations / Potentially serious limitations / Very serious limitations

Study	**Bentur 2014** [22]			
Study details	Population & interventions	Costs	Health outcomes	Cost-effectiveness
Economic analysis: CCA Study design: Retrospective cohort analysis without multivariate regression Approach to analysis: Examining the utilisation and cost of all services consumed in the last 6 months of life by patients with cancer, comparing those who received home hospice care with those who did not. Using data from administrative data files. Costs were attached to resource use identified for each person. Perspective: Israeli Ministry of Health Time horizon/Follow-up: 6 months Discounting: Costs: NA; Outcomes: NA	Population: Patients with metastatic cancer in the last 6 months of their lives. Patient characteristics: N: 193 patients (N = 153 intervention 1, N=40 intervention 2) Mean age: 69.5 Male: 56% Intervention 1: Patients from the dataset who received community care but did not receive Home Hospice Unit (HHU) care in addition. Intervention 2: Patients from the dataset who received Home Hospice Unit care in addition to regular community care. (The HHU is a 24-hour service provided be a	Total costs (mean per patient): Intervention 1: £12,788 Intervention 2: £9.432 Incremental (2−1): saves £3,356 (95% CI: NR; p=NR) Currency & cost year: 2010 US dollars (presented here as 2010 UK pounds(b)) Cost components incorporated: General hospitalisation admissions, emergency room visits, medication, enrolment in home care unit, enrolment in home hospice unit, oncology day care (The cost of the intervention itself is not included.)	Proportion hospitalised at least once: Intervention 1: 83% Intervention 2: 89% Incremental (2−1): 6% (95% CI: NR; p=NR) Proportion that visited the emergency room at least once: Intervention 1: 52% Intervention 2: 53% Incremental (2−1): 1% (95% CI: NR; p=NR) Proportion who died at home: Intervention 1: 26% Intervention 2: 56% Incremental (2−1): 30% (95% CI: NR; p=NR)	ICER (Intervention 2 versus Intervention 1): NA Analysis of uncertainty: None.

Study	Bentur 2014 [22]			
	multiprofessional palliative care team that includes physicians, nurses, and social workers who visit the patients' home once a week or more, as needed).			
Data sources				
Health outcomes: Clinical outcomes were from the Clalit's administrative data files. The raw data was reported above (as well as the calculated risks from the guideline clinical review), as it is not clear what the odds ratios reported have been adjusted for. Quality-of-life weights: NA. Cost sources: From the official price list of the Ministry of Health in Israel. "The health plan costs for visits to the family physician and/or nurses were not included since these are factored into the overall budget for the district and cannot be calculated on a per clinic or per patient basis". Note that the costs are reported in the study as US dollars, but it does not state whether any conversion took place from Israeli currency, therefore US dollars was assumed to be the currency and converted to UK pounds. Hospitalisation contributed to 32% of the cost for HHU patients, and 64% of the total cost for patients without HHU care.				
Comments				
Source of funding: Guy and Nora Barron, Michigan; the Myers-JDC-Brookdale Institute, Jerusalem. Limitations: Right population and intervention but perspective only partly applicable as non UK setting. Only a CCA. No cost of intervention. Some costs missing. No detailed disaggregated cost/resource use breakdown. Issues with data identification and therefore whether the people in the intervention group have used the intervention appropriately. Control group much bigger than intervention group. Other: There are some differences between the patients in the two groups; 5% of the patients with HHU care had been treated with chemotherapy or radiotherapy in their last month of life, compared to 40% of patients without HHU. Perhaps this could explain the slight difference in hospitalisation rates as some hospitalisation might be due to the side effects of treatment. This difference might also imply that the groups are fundamentally different because those wanting a HHU are more accepting of the fact that they are approaching the end of their life. There is no detailed breakdown of the proportions of costs attributable to each group, however the cost difference could maybe be explained by the fact that if many more people in the non HHU group were still having treatment then they required more oncology day care visits.				
Overall applicability: Partially applicable[(b)] Overall quality: Very serious limitations[(c)]				

Abbreviations: CCA: cost-consequence analysis; 95% CI: 95% confidence interval; da: deterministic analysis; ICER: incremental cost-effectiveness ratio; NR: not reported;
(a) Converted using 2016 purchasing power parities[174]
(b) Directly applicable / Partially applicable / Not applicable
(c) Minor limitations / Potentially serious limitations / Very serious limitations

Study	Chitnis 2013 [46]			
Study details	Population & interventions	Costs	Health outcomes	Cost-effectiveness
Economic analysis: CCA (health outcomes:	Population:	Total costs of hospital care between index date	Preferred and actual place of death (home): RR 2.2 (CI:	ICER: NA

Study	Chitnis 2013 [46]			
Proportion of people who died at home, numbers of emergency and elective inpatient admissions, outpatient attendances and attendances in emergency departments in the period until death) Study design: Retrospective cohort analysis with multivariate regression (using matched controls) Approach to analysis: People that received the Marie Curie Nursing Service (MCNS) were linked to HES data and were matched to people with the same distribution of relevant characteristics as the intervention patients in the period leading up to the intervention. The matching employed a two-stage algorithm which resulted in one control selected per case without replacement. Total costs of hospital care between index date and death were compared between	Intervention group: People >18 years who received MCNS care in England between January 2009 and November 2011, and who died in the same period who did not die in a care home and who had been admitted to hospital at some point between 2000 and death. (n=29,539) Controls: The same inclusion exclusion criteria were applied to the matched controls but they could not have received MCNS care. The controls and intervention patients were similar in terms of a wide range of demographic, diagnostic and prior hospital utilisation variables at the index date, with no standardised differences of greater than 10%. (n=29,539) Patient characteristics: Mean age: Intervention group 74.8, controls 74.7 Male: Intervention group 53%, controls 53% Intervention 1: Usual care. MCNS not available. Intervention 2: The MCNS is funded by NHS commissioners and donations and provides hands-on nursing care and	and death (average unadjusted overall costs): Intervention 1: £1,750 Intervention 2: £610 Incremental (2−1): saves £1,140 (95% CI: NR; p=NR) Adjusted cost saving: £1,113 (95% CI: £1,071 to £1,155; p=<0.001) Currency & cost year: 2012 UK pounds Cost components incorporated: Costs of emergency admissions, elective admissions, outpatient attendances, A&E attendances.	2.16, 2.24) ARD 420 more per 1000 Preferred and actual place of death (hospital): RR 0.2 (CI: 0.19, 0.2) ARD 410 per 1000 Number of hospital visits (patients who attended outpatients) between first MCNS visit and death: RR 0.45 (CI: 0.43, 0.47) ARD 103 fewer per 1000 Number of unscheduled admissions (people with emergency admissions) between first MCNS visit and death: RR 0.31 (CI: 0.3, 0.33) ARD 241 fewer per 1000 Number of visits to A&E (people who attended A&E) between first MCNS visit and death: RR 0.28 (CI: 0.26, 0.29) ARD 206 fewer per 1000	Analysis of uncertainty: Sensitivity analysis was done using conditional logistic regression to assess the impact of this modelling strategy on the estimates of the proportional endpoints.

Study	Chitnis 2013 [46]			
intervention group and controls. Perspective: UK NHS Intervention + Follow-up: 2 years Discounting: Costs: NA; Outcomes: NA	emotional support for people in their own homes, day and night at the end of life. It aims to provide care that makes it possible for people to spend their last days of life at home rather than in hospital. Although originally it focused on caring for people with cancer, it is now available to people with other conditions. The service is provided by registered nurses and healthcare assistants, and people are referred to the service by community nursing services. The MCNS offers various models of care; however, the vast majority of people in this study were receiving the standard package of care consisting of a 9-h day or overnight shift of care.			
Data sources				
Health outcomes: Administrative data on the participants in the intervention group and control groups Quality-of-life weights: NA Cost sources: Hospital costs were estimated from HES data by applying the set of mandatory and indicative tariffs used in England for the reimbursement of inpatient and outpatient care (2010/11 Payment by results tariffs). Where tariffs were not available 2007/8 national reference costs (adjusted for inflation) were used.				
Comments				
Source of funding: Academic or government funding (The study was funded by Marie Curie Cancer Care. The study design was agreed between the Nuffield trust and Marie Curie Cancer care. Full control of the analysis, interpretation of the results and publication rights were retained by the Nuffield trust. Marie Curie Cancer Care were not involved in the preparation of this manuscript not in the decision to submit for publication) Limitations: UK based CCA of secondary care costs only. Costs that occur in other settings such as primary care are not captured in the analysis. Lower costs in a hospital setting could lead to higher costs in primary/community settings. The study cannot tell us whether the intervention is likely to lead to a reduction in the mean overall costs patients incur to the health system as a whole. Potential conflict of interest. Other:				
Overall applicability: Partially applicable[(a)] Overall quality: Very serious limitations[(b)]				

Abbreviations: CCA: cost-consequence analysis; 95% CI: 95% confidence interval; CER: incremental cost-effectiveness ratio; NR: not reported; pa: probabilistic analysis;
(a) Directly applicable / Partially applicable / Not applicable
(b) Minor limitations / Potentially serious limitations / Very serious limitations

Study	Noble 2014 [168]			
Study details	Population & interventions	Costs	Health outcomes	Cost-effectiveness
Economic analysis: CCA (health outcome: Preferred and actual place of death) Study design: Non-randomised comparative study with retrospective activity based costing (ABC) analysis of the service Approach to analysis: Electronic records of clinical and administrative activity combined with financial accounting information were used to develop the ABC analysis. The activity involved a detailed mapping of costs, by team member, of every Midhurst service activity from the point of referral to end of life. The same approach could not be done for hospice care so an estimated cost of care was estimated and validated. Perspective: UK NHS Intervention + Follow-	Population: Patients who died during the study period (August 2008–August 2009), within the West Sussex, Surrey and Hampshire PCT areas in the south-east of England, with cancer as known cause of death, who could be matched to both the Public Health Mortality File and the Commissioning Data Set. This resulted in a 201-patient cohort for Midhurst, and 770 patients in the Hospice group Patient characteristics: N=971 (770 intervention 1, 201 intervention 2) Start age: NR Male: NR Intervention 1: Usual care. No additional community services available on a regular/routine basis. Patients who accessed a normal hospice. Intervention 2: Additional community services on a regular/routine basis. The Midhurst Macmillan Specialist Palliative Care Service is a medical consultant-led multi-disciplinary team, re-configured as a community service following the closure of the King Edward VII Hospital, West Sussex, UK in 2006 and modelled on the Motala hospital-	Total costs (mean per patient): Before Intervention 1: £10,100 Intervention 2: £9,400 Incremental (2−1): saves £700 (95% CI: NR; p=NR) After 1 stay Intervention 1: £10,900 Intervention 2: £10,200 Incremental (2−1): saves £700 (95% CI: NR; p=NR) After 2+ stays Intervention 1:£16,000 Intervention 2: £16,000 Incremental (2−1): £0 (95% CI: NR; p=NR) Currency & cost year: 2008 UK pounds Cost components incorporated: Costs of care received prior to referral to a specialist palliative care service in the last year of life; costs of	Preferred and actual place of death (home): RR 1.02 (CI: 0.92, 1.12); ARD 14 more per 1000	ICER: NA Analysis of uncertainty: NR

Study	Noble 2014 [168]			
up: 1 year Discounting: Costs: NA; Outcomes: NA	based home care programme in Sweden (Beck-Friis & Strang 1993). The Midhurst service is one of only two in the UK that involves a medical consultant-led multi-disciplinary team that aims to provide round-the-clock, 'hands-on' care and advice at home, in community hospitals and in nursing or residential homes. The range of palliative interventions includes intravenous infusions, paracentesis and intrathecal analgesia. The service aims were: to put in place a sustainable and affordable specialist palliative care service for the population within the Midhurst and surrounding areas; to reduce acute hospital interventions and inpatient hospice stays; to ensure that patient choice is maximised by providing as much treatment and support in the home/ community setting as possible . Duration unclear. Concurrent medication/care: not stated	delivering the service in the last year of life; cost of care post referral to a specialist palliative care service in the last year of life.		
Data sources				
Health outcomes: From participants in the study. Quality-of-life weights: NA Cost sources: For the ABC the researchers created reference costs for the activities carried out by the Midhurst service.				
Comments				
Source of funding: Academic or government funding (MacMillan Cancer Support) Limitations: UK based CCA. The methods for estimating costs for each intervention compared are very different. An activity based costing was only able to be conducted for the Midhurst intervention. The study does not explain the methodology of matching patients who received the Midhurst service to the usual hospice service therefore it is not clear if the patient characteristics were similar. The number of inpatient stays has been used as a proxy for early identification of needing supportive/palliative care but it does not appear that anything else has been controlled for. The study could not collect detailed data on the extent of involvement of primary care services therefore they could not accurately estimate the cost. The study reports national average costs of hospice costs which may not be an accurate cost of hospice use in the				

Study	Noble 2014 [168]			
local area. Other:				
Overall applicability: Partially applicable[(a)] Overall quality: Very serious limitations[(b)]				

Abbreviations: ARD: Absolute risk difference; CCA: cost-consequence analysis; 95% CI: 95% confidence interval; ICER: incremental cost-effectiveness ratio; NR: not reported; pa: probabilistic analysis; RR: Risk ratio
(a) Directly applicable / Partially applicable / Not applicable
(b) Minor limitations / Potentially serious limitations / Very serious limitations

Study	Pattenden 2013[180]			
Study details	Population & interventions	Costs	Health outcomes	Cost-effectiveness
Economic analysis: CCA (health outcomes: number of unscheduled admissions, length of stay, mean number of admissions per patient) Study design: Prospective non-randomised cohort study with historical control Approach to analysis: Costs and outcomes of the 'Better together' (BT) joint British Heart Foundation (BHF) heart failure specialist nurses (HFSN) and Mari Curie Cancer Care Nurses (MCN) implemented in Bradford and Poole were compared to historical control groups in both areas.	Population: Intervention group: Patients with advanced congestive heart failure (all patients had a New York Heart Association (NYHA) severity classification of III or IV). Control group: a convenience sample identified retrospectively from service caseloads in Poole and Bradford. Nurses selected all NYHA III and IV patients who would have been considered eligible for a palliative care service such as BT. Patient characteristics: N= 197 (99 intervention, 98 control) Bradford	Total costs (mean per patient): Bradford Intervention 1: £3,243 Intervention 2: £2,056 Incremental(2−1): saves £1,187 (95% CI: NR; p=NR) Poole Intervention 1: £2,874 Intervention 2: £2,026 Incremental: (2−1): saves £848 (95% CI: NR; p=NR) Currency & cost year: 2006 /7 UK pounds Cost components incorporated: Costs of medical procedures, inpatient care and the direct cost of providing the intervention.	Number of unscheduled admissions: RR 0.64 (CI: 0.49, 0.85); ARD 231 fewer per 1000 Length of stay (Bradford subgroup): 2.4 lower (CI: 5.69 lower, 0.89 higher) Length of stay (Poole subgroup): 1 higher (CI: (6.02 lower, 8.02 higher) Number of admissions per patient – Bradford subgroup): 0.3 lower (CI: 0.85 lower, 0.25 higher) Number of admissions per patient – Poole subgroup): 1 lower (CI: 1.54, 0.46 lower)	ICER: NA Analysis of uncertainty: NR

Study	Pattenden 2013[180]			
Perspective: UK NHS Follow-up: 2 years Treatment effect duration: Until the end of the patients' lives. Discounting: Costs: NA; Outcomes: NA	Mean age: 76 control, 79.9 intervention Male: 60.8% control, 59.7% intervention Poole Mean age: 81.7 control, 83.5 intervention Male: 69.2% control, intervention 62.2% Intervention 1 (control group): N=98 (76 Bradford; 22 Poole) BT not available. In Bradford, the heart failure and PC services were already working in partnership with palliative care and the HFSN had organised a weekly heart failure support group in the MC hospice day unit. In Poole the HFSNs had primarily received their caseloads from cardiologists and had fewer severely ill and elderly patients and concentrated more on newly diagnosed CHF patients. Intervention 2 (intervention group): N=99 (62 Bradford; 37 Poole)			

Study	Pattenden 2013[180]			
	BT Palliative care service – Staff from the BHF and MCN underwent training to learn about each other's working practices. BHF HFSN provided education and advice to patients and carers. They managed symptoms through clinical assessment and regular medication review. MCN provided practical palliative physical nursing care (administration of prescribed medications for pain relief and agitation, psychological support from referral until end of life). They liaised with district nurses and other support services for the provision of comfort aids. Marie Curie Cancer Care healthcare assistants (MCHCAs) provided respite care and psychological support to patients and carers. Day or night shifts could be booked days or weeks in advance and patients could use the service occasionally (to avoid readmission) regularly (for respite or last weeks of care) or as a one-off			

Study	Pattenden 2013[180]			
	during a particular spell of ill health but were discharged until service was needed again.			
Data sources				
Health outcomes: Averted admissions are the difference between the observed and the expected admissions for heart failure in the intervention group. Expected admissions are those we would observe if the admission rate in the intervention group were the same as that observed in the control group. Quality-of-life weights: NA Cost sources: Inpatient costs and the costs of procedures undergone while in hospital were estimated using the appropriate healthcare resource group (HRG), identified in the basis of diagnosis, age and intervention data. Reference cost data for 2006/7 used to cost the HRGs and cost of any additional procedures added to give the total inpatient cost for each patient. Admissions from Sept 2006 to August 2008 (intervention groups) and September 2004 to August 2006 (control groups) were costed. For Poole data was sources from patients' electronic records. In Bradford, the PCT supplied the data from their administrative databases. Full costs of employing specialist nurses and costs of session per month provided by MCN and MCHCAs.				
Comments				
Source of funding: NR Limitations: UK based CCA of costs to secondary care.Data on New York Heart Association (NYHA) scores were not available for the controls so clinical comparability could not be demonstrated. Cost data on outpatient, primary and community care use were not available for either group so analysis only focused on secondary care costs which therefore does not provide enough information to be able to determine if total costs were really lower in the intervention groups. Cost may have been shifted from secondary to primary/community settings. In Bradford, patients in the intervention group were significantly older than their control group with a mean difference of 3.8 years. This could have affected the clinical outcomes observed biasing the results in favour of the intervention. The paper reports after BT the HFSNs in Poole began to receive more of their caseloads from 'care of the elderly' wards, GPs and district nurses which increased the proportion of people in their caseloads with a severity classification of III or IV. This means the cost of the historical controls could be underestimated as they previously had a lower severity case mix of patients. Other:				
Overall applicability: Partially applicable[(a)] Overall quality: Very serious limitations[(b)]				

Abbreviations: BT: better together; CCA: cost-consequence analysis; 95% CI: 95% confidence interval; MC: Marie-Curie; NR: not reported; RR: risk ratio
(a) Directly applicable / Partially applicable / Not applicable
(b) Minor limitations / Potentially serious limitations / Very serious limitations

Study	Pham 2014[181]			
Study details	Population & interventions	Costs	Health outcomes	Cost effectiveness
Economic analysis: CUA(a) Study design:	Population: A cohort of Ontarian decedents (average age 72, approx. 50% female) and their primary informal	Total costs (mean per patient): Intervention 1: £28,065 Intervention 2: £25,588	QALDs (mean total of patient and caregiver): Intervention 1: 518.53 Intervention 2: 519.00	ICER (Intervention 2 versus Intervention 1): Dominant 95% CI: NR

Study	Pham 2014[181]			
Probabilistic decision analytic markov model (microsimulation) Approach to analysis: Each intervention was compared to usual care as the interventions were not considered mutually exclusive; could be used in combination to improve the quality of EOL care. Pathways generated (with associated health outcomes and costs) for each patient in cohort (microsimulation) and averages derived from sum of simulated data. Markov model used to simulate patterns of EOL care; related health care utilisation and recurrent events experienced (for example: ED visits, hospital admissions). 1-day cycle length with simulation starting at 1st day of last year of life, tracking daily events for the following 365 days. Model accounted for a proportion of patients who were designated with a palliative	caregivers (average age 56, approx. 68% female) Intervention 1: Usual care (see Table 79) Intervention 2: PTC: In-home (see Table 79) Intervention 3: PTC: Inpatient (see Table 79) Intervention 4: PTC: Comprehensive (see Table 79) Intervention 5: PCPDs: Identifying LTC residents with EoL goals and preferences for EPC (see Table 79) Intervention 6: PCPDs: Ethics consultation for ICU patients with treatment conflicts (see Table 79) Intervention 7: PCPDs: Improving family conferences for relatives of patients dying in the ICU (see Table 79) Intervention 8: Multicomponent psycho-educational interventions for patients and families	Intervention 3: £27,145 Intervention 4: £28,360 Intervention 5: £28,051 Intervention 6: £28,018 Intervention 7: £28,096 Intervention 8: £30,733 Intervention 9: £28,175 Incremental (2−1): saves £2,477 Incremental (3−1): saves £920 Incremental (4−1): £295 Incremental (5−1): saves £15 Incremental (6−1): saves £48 Incremental (7−1): £31 Incremental (8−1): £2,668 Incremental (9−1): £110 (95% CI: NR; p=NR) Currency & cost year: 2013 Canadian dollars (presented here as 2013 UK pounds(b)) Cost components incorporated: Time specific daily healthcare costs in the last year of life (ED visit, Hospital care, Home care, LTC, Rehabilitation,	Intervention 3: 518.80 Intervention 4: 521.18 Intervention 5: 518.54 Intervention 6: 518.63 Intervention 7: 519.02 Intervention 8: 522.16 Intervention 9: 519.35 Incremental (2−1): 0.47 Incremental (3-1): 0.27 Incremental (4-1): 2.65 Incremental (5-1): 0.01 Incremental (6-1): 0.10 Incremental (7-1): 0.49 Incremental (8-1): 3.63 Incremental (9-1): 0.82 (95% CI: NR; p=NR)	ICER (Intervention 3 versus Intervention 1): Dominant 95% CI: NR ICER (Intervention 4 versus Intervention 1): £40,632.49 per QALY gained 95% CI: NR ICER (Intervention 5 versus Intervention 1): Dominant 95% CI: NR ICER (Intervention 6 versus Intervention 1): Dominant 95% CI: NR ICER (Intervention 7 versus Intervention 1): £23,092.97 per QALY gained 95% CI: NR ICER (Intervention 8 versus Intervention 1): £268,270.12 per QALY gained 95% CI: NR ICER (Intervention 9 versus Intervention 1): £48,965.06 per QALY gained 95% CI: NR Analysis of uncertainty: A number of probabilistic and one-way sensitivity analyses conducted to explore key sources of variability and uncertainty in

Study	Pham 2014[181]			
prognosis before last year of life. On any day, simulated patients could begin receiving home care services, be admitted to LTC, visit the ED, or be admitted to hospital. Simulated patients with a palliative prognosis could receive a combination of acute or palliative services at home, in LTC, or in hospital. All decedents assumed to die on the 365th day. Perspective: Ontario Ministry of Health and Long-Term Care Time horizon/Follow-up 1 year Discounting: Costs: 0%; Outcomes: 0% (Time horizon 1-year)	(see Table 79) Intervention 9: Supportive interventions for informal caregivers (see Table 79)	Outpatient visit, Physician, Drugs/devices, other); Other daily healthcare costs in the last year of life (ICU stay, CCC stay, Non-home hospice stay, ALC, PWC stay); resources required to deliver the interventions and their associated costs.		the simulated model. Model calibration (via visual inspection) was performed to ensure model projections were consistent with observed data for the HQO ICES and OHRI ICES cohorts.
Data sources				
Data was obtained from two EoL cohorts for tracked patterns of care and health care resource utilisation in 12 months before death from linked administration databases at ICES. One cohort consisted of 265,284 Ontario decedents from January 1 2007 to December 31 2009 referred to as the HQO ICES cohort. The other cohort consisted of 175,478 Ontarian decedents from April 1 2010 to March 31 2012, referred to as the OHRI ICES cohort. Health outcomes: Natural history (proportion of patients with a palliative prognosis) was derived using the OHRI ICES summary data. Summary data from the ICES cohorts were used to quantify patterns of EoL care practice in Ontario. Usual care included some provision of services related to the intervention strategies. Monthly data from the HQO ICES cohort were used to estimate daily transition rates. Effectiveness evidence for in-home palliative care team was derived from an RCT comparing the intervention to a control group, in the analysis this was assumed to the the same as the usual care strategy. For all interventions the summary estimates of effectiveness were derived using data from RCTs obtained through SRs of the literature; where appropriate pooled effects were calculated using a random effects approach. Quality-of-life weights: Pooled effect size from 3 RCTs using HRQOL scale specific to EOL (Functional Assessment of Chronic Illness Therapy – Spiritual Well-Being, scale) was estimated for comprehensive palliative care team. Assumption was made that generic instruments (EQ-5D) would be less responsive by a relative reduction of 0.8 therefore effect size was converted by multiplying by				

Study	Pham 2014[181]
the reduction factor. Absolute QALY weight change scores were estimated by multiplying by an assumed standard deviation of 0.18. The absolute QALY weight change score was applied to the QALY weights of patients with a palliative prognosis during their hospital days and post discharge days. Duration effect of QALY weight change scores was three months; as summary data for HQO ICES cohort indicated patients were identified with a palliative prognosis approximately 3 months prior to death. Literature searches conducted to obtain decrements in QALY weights for patients with acute conditions that required ED visits, hospital days, ICU days. QALY weight decrements also estimated for caregivers. Cost sources: HQO ICES cohort was used to calculate the time specific healthcare costs in the last year of life. A combination of sources including data from the HQO ICES cohort, input from a local CCC facility and the central east residential hospice working group were used to cost the other daily costs in the last year of life. A combination of sources including data from 11 teams in Ontario (Lukas et. al 2013), HQO expert panel, published inputs and inputs from 6 RCTs included in a systematic review were used to estimate the resource use required for the included interventions. Unit costs of staff sourced from CFNU, CIHI and expert opinion.	
Comments	
Source of funding: Health Quality Ontario Limitations: Not a UK study therefore study population and costs not directly appropriate. Model assumes that last year of life is known which does not reflect reality. Model assumes that interventions do not affect survival time which does not reflect reality. Model assumes that a palliative prognosis can be determined by resource use of patients therefore doesn't account for patients with a terminal illness who do not receive EOL care services in the last year of life, it is not clear how this effects the cost effectiveness results. Cost effectiveness results for in-home palliative care are subject to EOL care in the control group of the RCT study being the same as the usual care strategy; this is unlikely to be true. The model does not explicitly take into account that some of the interventions are currently provided as part of usual care therefore it is likely that the treatment effects are overestimated. Estimating the intervention effect on HRQOL as well as decrements in QALY weights through downstream resource use risks the possibility of double counting. Other:	
Overall applicability: Partially applicable[(c)]	Overall quality: Potentially serious limitations[(d)]

Abbreviations: ALC: alternate level of care; CCC: complex continuing care; CFNU: Canadian Federation of Nurses Unions; CIHI: Canadian Institute for Health Information; CEA: cost-effectiveness analysis; 95% CI: 95% confidence interval; CUA: cost–utility analysis; da: deterministic analysis; ED: emergency department; EOL: end of life; EQ-5D: Euroqol 5 dimensions (scale: 0.0 [death] to 1.0 [full health], negative values mean worse than death); EPC: early palliative care; HQO: Health quality Ontario; ICER: incremental cost-effectiveness ratio; ICES: Institute for Clinical Evaluative Sciences; ICU: intensive care unit; LTC: Long term care; NR: not reported; OHRI: Ottawa hospital research institute; pa: probabilistic analysis; QALD: quality-adjusted life day; QALYs: quality-adjusted life years; PCPDs: patient care planning decisions; PCT: palliative care team; PCW: palliative care ward.

(a) The primary analysis in the study was a CEA and the CUA was conducted as a sensitivity analysis. Only the CUA has been extracted as considered most relevant according to the NICE reference case.

(b) Converted using 2013 purchasing power parities[174]

(c) Directly applicable / Partially applicable / Not applicable

(d) Minor limitations / Potentially serious limitations / Very serious limitations

Table 79: Interventions, subgroups and timing of intervention strategies

Intervention	Description	Subgroup	Timing of Intervention
Usual Care	Current patterns of EoL care; decedents were identified with a palliative prognosis if they received	All decedents (with and without a palliative prognosis in their last year of life); the former received	Current patterns of EoL care observed from linked health administrative

Intervention	Description	Subgroup	Timing of Intervention
	at least 1 palliative care service (for example:, physician billing for palliative consultation)	additional interventions listed below	databases at ICES
Palliative care team			
PTC: In-home	An inter-professional core team that coordinates and delivers palliative services in the home, including the patient and family, a physician, nurse, social worker, and other team members (for example:, a bioethicist, a chaplain)	Decedents with a palliative prognosis who received home care	When a palliative prognosis is detected in a decedent receiving home care
PTC: Inpatient	A team that includes a palliative care physician, a nurse, a hospital social worker, and a chaplain. The team assesses the needs of patients with respect to symptom management, psychosocial and spiritual support, and EoL care planning, and provides care and support for patients and informal caregivers	Decedents with a palliative prognosis who received inpatient care	When a palliative prognosis is detected in a decedent receiving hospital care
PTC: Comprehensive	A team with an outpatient clinic and an inpatient consultant team. The core intervention includes consultation and follow-up in the clinic by a physician and a nurse. The team communicates with family physicians. Home care physicians from the team provide back-up support to family physicians doing house calls or direct care	Decedents with a palliative prognosis who received home care or inpatient care	When a palliative prognosis is detected in a decedent receiving home care or hospital care
Patient care planning decisions			
PCPDs: Identifying LTC residents with EoL goals and preferences for EPC	A structured interview is used to identify LTC residents with a palliative prognosis. Residents'	Decedents with a palliative prognosis in LTC	When a palliative prognosis is detected in a LTC resident

Intervention	Description	Subgroup	Timing of Intervention
	physicians are notified and asked to authorize a visit by a member of an in-home palliative care team		
PCPDs: Ethics consultation for ICU patients with treatment conflicts	ICU nurses identify ICU patients with treatment conflicts that could lead to incompatible courses of action. An ethics consultant discusses the conflicts in easily understood ethical terms with the involved parties (for example:, patients, family, attending physicians), facilitates communication, and explores ways to address and resolve the conflicts	Decedents admitted to ICU in the last month of life	When treatment conflicts are identified by ICU nurses
PCPDs: Improving Family conferences for relatives of patients dying in the ICU	A proactive EoL conference involving the ICU team members caring for the patient and family and a brochure to facilitate communication during the conference. The aim of the family conference is to lessen the effects of bereavement for caregivers	Decedents in the ICU and their families	Last ICU stay
Educational Interventions for Patients and Caregivers			
Multicomponent psycho-educational interventions for patients and families	Education is delivered by APNs with palliative care specialty training. The APNs conduct 4 initial structured educational and problem-solving sessions by phone with the patient and caregiver. The educational approach is designed to encourage patient activation, self-management, and empowerment. The APNs also conduct monthly telephone follow-up	Decedents with a palliative prognosis and their families	When a palliative prognosis is detected

Intervention	Description	Subgroup	Timing of Intervention
	until the patient dies		
Supportive Interventions for Informal Caregivers			
Supportive interventions for Informal caregivers	Direct support for caregivers (for example:, breaks from caregiving), increasing coping skills (for example:, by providing programs that develop problem-solving) and enhancing well-being (for example:, by providing counselling, relaxation or psychotherapy)	Caregivers of decedents with a palliative prognosis	When a palliative prognosis is detected

Study	Youens 2017 [238]			
Study details	Population & interventions	Costs	Health outcomes	Cost effectiveness
Economic analysis: CCA (health outcomes: place of death, number of admissions, length of stay) Study design: Retrospective cohort analysis with multivariate regression (propensity score-weighted) Approach to analysis: Perspective: WA health system perspective Time horizon/Follow-up 10 years	Population: 28,561 West Australian cancer decedents from 2001 to 2011 (16,530 (57.9%) accessed the service) Cohort settings: Age: <50: 1,921, 50-74: 12,808, 75+: 13,832 Female 44% Intervention 1: No additional community palliative care services (PCS) available on a regular/routine basis: Those who did not access community based PCS. Intervention 2:	Adjusted difference in mean cost of all hospitalisations and ED presentations in last 12 months: £2,240 lower (CI: £2,697, £1,788) Adjusted difference in mean cost of all hospitalisations and ED presentations in last 6 months: £b,c09 lower (CI: £2,650, £1,968) Adjusted difference in mean cost of all hospitalisations and ED presentations in last 3 months: £2,214 lower (CI:	Preferred and actual place of death (people dying out of hospital): RR 2.03 (CI: 1.96, 2.11); ARD 248 more per 1,000 All cause hospitalisation at follow-up 12 months before death: Rate Ratio 1.01 (CI: 0.96, 1.05) All cause unplanned hospitalisation at follow-up 12 months before death: Rate ratio 0.94 (CI: 0.91, 0.97)	ICER (Intervention 2 versus Intervention 1): NA Analysis of uncertainty: None.

Study	Youens 2017 [238]			
Discounting: Costs: 0% ; Outcomes: 0%	Community based Palliative Care Service: An interdisciplinary service with teams comprising nurses, doctors, care aids, counsellors, chaplains, social workers, and volunteers, in which clinical nurses are case coordinators. Teams are available to provide care around the clock. The service focuses on alleviating physical symptoms and providing psychological and spiritual support for people with terminal illness.	£2,467, £1,960) Adjusted difference in mean cost of all hospitalisations and ED presentations in last 1 months: £1,570 lower (CI: 177, 1,405) Adjusted difference in mean cost of all hospitalisations and ED presentations in last week: £325 lower (CI: £399, £249) Currency & cost year: 2012 Australian dollars (presented here as 2012 UK pounds(a)) Cost components incorporated: Cumulative cost of hospital admissions at the end of life.	All cause ED presentations at follow-up 12 months before death: Rate ratio 0.92 (CI: 0.89, 0.96) Length of stay (days) for inpatient hospitalisation at follow-up 12 months before death: Mean difference -4.19 (CI: -4.58, 3.88)	
Data sources				
Health outcomes: Retrospective analysis of cohort data using linked administrative records from cancer registry, hospital, emergency department, and mortality and PCS databases. Quality-of-life weights: NA. Cost sources: Cost of episodes of care based on average cost of AR-DRG code recorded using national hospital cost data collections for WA. ED presentations costed using URG as reported in Independent Hospital Pricing Authority's National Hospital Cost Data Collection reports. URG cost reports available for 2010-12 so costs extrapolated backward to provide estimated costs of earlier study years. All costs adjusted to 2012 price levels, using health price indices calculated from Health and Welfare expenditure series of the Australian Institute of				

Study	Youens 2017 [238]
Health and Welfare.	
Comments	
Source of funding: NR. Limitations: Not a UK study therefore study population and costs not directly appropriate. Costs only include the cumulative costs of hospital admissions at the end of life, they do not include the costs of providing the intervention, and therefore it is not possible to determine whether the service is likely to be cost effective. Other:	
Overall applicability: Partially applicable(b)	Overall quality: Very serious limitations(c)

Abbreviations: ARD: Absolute risk difference; AR-DRG: Australian refined diagnostic related group CCA: cost–consequence analysis; 95% CI: 95% confidence interval; ICER: incremental cost-effectiveness ratio; NR: not reported;, URG: Urgency related group, RR: risk ratio
(a) Converted using 2012 purchasing power parities[174]
(b) Directly applicable / Partially applicable / Not applicable
(c) Minor limitations / Potentially serious limitations / Very serious limitations

H.2 Availability of additional community services in an acute/emergency scenario

Study	McCaffrey 2013 [146]			
Study details	Population & interventions	Costs	Health outcomes	Cost-effectiveness
Economic analysis: Within trial CEA (primary health outcome: days at home, also reported: place of death) Study design: RCT Approach to analysis: Mean costs and effectiveness were calculated for the PEACH and usual care arms including: days at home, place of death,	Population: Patients were eligible if they were ≥18, had complex or unstable symptom management and high care needs that preferred care to be delivered at home and/or a home death, who lived with a caregiver or had a caregiver on discharge. 32 consenting participants (predominately with advanced cancer) were randomised to receive PEACH or usual care in a	Total costs (mean per patient): Intervention 1: £4,562 Intervention 2: £2,489 Incremental (2−1): £2,073 (95% CI: NR; p=NR) Currency & cost year: 2010 Australian dollars (presented here as 2010 UK pounds(a)) Cost components incorporated:	Days at home (mean per patient): Intervention 1: 13.1 (8.5, 17.7) Intervention 2: 12.1 (5.9, 18.4) Incremental (2−1): 1 (95% CI) NR Note: 68% of participants died during follow-up. Preferred and actual	ICER (Intervention 2 versus Intervention 1): £2,073 per day at home gained Analysis of uncertainty: A willingness to pay threshold was not set but a threshold analysis was performed which estimated that expected benefits of PEACH over 28 days exceed expected costs of the intervention when the threshold value for one extra day at home exceeded £490. The estimates are sensitive to the direction of treatment effect and PEACH programme costs.

Study	McCaffrey 2013 [146]			
PEACH intervention costs, specialist palliative care service use, acute hospital and palliative care unit inpatient stays; and outpatient visits. Perspective: Australian health system Follow-up: 28 days Treatment effect duration: 28 days Discounting: NA	3:1 ratio. (In PEACH arm n=23, in usual care arm n=8) Cohort settings: N=31 (N=23 intervention 1, N=8 intervention 2) Mean age: 63.6 Male: 58.1% Intervention 1: Usual care which encompassed conventional discharge planning with existing community services including specialist palliative care, access to an after-hours number, and equipment from loan pools. Intervention 2: Palliative care extended packages at home (PEACH): An individualised care package determined by local protocols for community and inpatients. Services are rapidly mobilised, essential equipment is secured, allied health is coordinated and higher	Costs of the PEACH intervention included staff and administration costs. Costs also included costs of specialist palliative care services and inpatient stays.	place of death (people dying at home) 28 days: RR 0.7 (CI: 0.38 to 1.3) ARD 240 fewer per 1000	Removal of a high cost outlier from the analysis reduced the threshold value above to £394.

Study	McCaffrey 2013 [146]			
	intensity nursing is provided (up to 24h/day for up to 5 days). N=8			
Data sources				
Health outcomes: Patient-level data was collected prospectively. Quality-of-life weights: NA Cost sources: Resource use was costed according to the Australian Manual of Resource Items and their Associated Costs in 2010 Australian Dollars. Inpatient stays were costed using case-mix weights for Australian Refined Diagnosis Related Groups inpatient stays as recommended by the Australian Medical Services Advisory Committee guidelines. Specialist palliative care services and PEACH costs were estimated using hourly rates of local salaries (plus 30% on-cost) agency costs and equipment hire. PEACH administration costs were included. Outpatient visits were costed using the National Hospital Cost Data Collection.				
Comments				
Source of funding: The Australian Government Department of Health and Ageing under the National Palliative Care Program, Palliative Care for People at Home. NM was also funded through the National Palliative Care Program and Flinders University. Limitations: Australian study. Health outcomes are not expressed in QALYs. Short follow-up time of 28 days and only 68% of participants died during follow-up. Difficult to interpret the cost effectiveness of the intervention as there is no willingness to pay threshold set for an additional day spent at home for people at the end of life. Higher proportion of usual care recruited as inpatients which may restrict days at home. Cost estimated did not include claims data for any additional costs of community care so the true costs of the models of care in each arm may be underestimated, however, costs not expected to differ by arm. Informal care-giver costs not included (as health system perspective taken) but costs could shift from service providers to families. Generalisability of results limited to care provided by similar costing and funding models. Very small sample size, only 8 in the usual care arm. Other:				
Overall applicability:(c) Partially Applicable Overall quality(d) Very serious limitations				

Abbreviations: CEA: cost-effectiveness analysis; 95% CI: 95% confidence interval; ICER: incremental cost-effectiveness ratio; NR: not reported;
(c) Converted using 2010 purchasing power parities[174]
(d) Directly applicable / Partially applicable / Not applicable
(e) Minor limitations / Potentially serious limitations / Very serious limitations

Appendix I: Health economic analysis

A cost analysis was conducted for different out-of-hours community interventions identified by the committee, from the literature or from the call for evidence (please see the details of the analysis in the separate report via the NICE website).

Appendix J: Excluded studies

J.1 Excluded clinical studies

J.1.1 Table 80: Studies excluded from the clinical review on the availability of additional community services on a regular/routine basis

Study	Exclusion reason
Adib-Hajbaghery 2013[3]	Inappropriate study design
Aimonino Ricauda 2008[6]	Not review population
Anonymous 2005[7]	Inappropriate study design
Applebaum 1980[10]	Not review population
Arris 2015[11]	Inappropriate study design
Ausserhofer 2016[12]	Inappropriate study design
Axelsson 1998[13]	Incorrect interventions
Back 2005[14]	Incorrect interventions
Backus 2002[15]	Not review population
Bakitas 2015[18]	Systematic review is not relevant to review question or unclear PICO
Barlow 2007[19]	Systematic review is not relevant to review question or unclear PICO
Barrett 2010[20]	Inappropriate study design
Bekkema 2015[21]	Inappropriate study design
Berkowitz 2005[23]	Not review population
Bernabei 1998[24]	Not review population
Biese 2014[25]	Not review population
Bower 2011[26]	Inappropriate study design
Bowles 2011[27]	Not review population
Brandi 2004[28]	Not review population
Brooks 2014[31]	Not review population
Burke 2015[34]	Not review population
Butler 2012[35]	Inappropriate study design
Buurman 2010[36]	Not review population
Byron 2007[37]	Inappropriate study design
Candy 2011[38]	Systematic review is not relevant to review question or unclear PICO
Caplan 2004[39]	Not review population
Carr 2008[40]	Inappropriate study design

Study	Exclusion reason
Chae 2001[42]	Not review population
Chen 2010[43]	Not review population
Cherofsky 2011[44]	Systematic review is not relevant to review question or unclear PICO
Chiang 2016	Inappropriate intervention
Chumbler 2005[48]	Not review population
Chumbler 2009[47]	Not review population
Clark 2000[49]	Inappropriate study design
Cleland 2005[50]	Not review population
Coleman 2004[51]	Not review population
Condelius 2010[52]	Not review population
Corrie 2013[53]	Not review population
Crisp 2014[55]	Inappropriate study design
Cummings 1990[57]	Not review population
Cummings 2012[56]	Not review population
Damiani 2009[58]	Not review population
Darkins 2015[59]	Not review population
De Almeida mello 2016[60]	Not review population
De Conno 1996[61]	Inappropriate study design
De Graaf 2016[62]	Inappropriate study design
De Luca 2016[63]	Not review population
De Toledo 2006[64]	Inappropriate study design. Not review population
Dellasega 2001[65]	Not review population
Devlin 2009[66]	Inappropriate study design
Dhiliwal 2015[67]	Inappropriate study design
Dougherty 2015[68]	Not review population. Inappropriate study design
Downar 2013[69]	Incorrect interventions
Drame 2012[70]	Not review population
Dunagan 2005[71]	Not review population
Eklund 2013[72]	Not review population
Feltner 2014[73]	Systematic review is not relevant to review question or unclear PICO
Fernandes 2010[74]	Not review population
Ferrell 1998[75]	Incorrect interventions
Finkelstein 2004[76]	Not review population
Finlay 2002[77]	Systematic review is not relevant to review question or unclear PICO
Fontecha 2013[78]	Incorrect interventions. Not review population
Fowell 2002[79]	Incorrect interventions
Franks 2004[80]	Not review population
Garåsen 2007[82]	Not review population
Gardner-Nix 1995[83]	Inappropriate study design
Gibson 2016[84]	Inappropriate study design
Golbeck 2011[85]	Not review population
Goldman 2014[86]	Not review population
Gomes 2013[87]	Systematic review is not relevant to review question or unclear

Study	Exclusion reason
	PICO
Gonseth 2004[88]	Not review population
Gott 2013[89]	Inappropriate study design
Grabowski 2014[90]	Not review population
Grady 2003[91]	Inappropriate study design
Graham 2005[92]	Incorrect interventions
Grande 2000[93]	Not review population. Not Adults (aged 18 yrs. or over) with progressive life limiting conditions thought to be entering their last year of life
Greer 1986[95]	Inappropriate intervention
Haggerty 1991[96]	Not review population
Hagglund 2015[97]	Not review population
Herber 2013[98]	Systematic review is not relevant to review question or unclear PICO
Hex 2015[99]	Not review population
Higginson 2002[100]	Inappropriate study design
Hopp 2006[102]	Not review population
Howell 2011[103]	Inappropriate study design
Hughes 1990[105]	Not review population
Hui 2001[107]	Inappropriate study design
Ingleton 2011[108]	Inappropriate study design
Inglis 2015[109]	Not review population
Ishani 2016[110]	Not review population
Lupati 2016[111]	Inappropriate study design
Jocham 2009	Inappropriate intervention
Johnson 1988[113]	Incorrect interventions
Kane 1984	Incorrect interventions
Kao 2015[116]	Incorrect interventions
Keating 2008[117]	Not review population
Kenny 2010[118]	Not review population. Inappropriate study design
Kidd 2010[119]	Systematic review is not relevant to review question or unclear PICO
Knies 2015[121]	Not review population
Kohri 2013[122]	Inappropriate study design
Kronman 2008[123]	Incorrect interventions
Kuo 2013[124]	Not review population
Kuzuya 2006[125]	Not review population
Low 2011[135]	Not review population
Laila 2008[126]	Not review population
Lakasing 2009[127]	Inappropriate study design
Lee 2000[129]	Not review population
Lee 2014[128]	Inappropriate study design
Liddy 2008[132]	Not review population
Lin 2015[133]	Not review population
Livingston 2013[134]	Incorrect interventions
Luckett 2013[136]	Systematic review is not relevant to review question or unclear PICO

Study	Exclusion reason
Lutz 2009[139]	Not review population
Mader 2008[140]	Not review population
Maliakkal 2014[141]	Not review population
Mani 2014[142]	Inappropriate study design
Martin 1994[143]	Not review population
Mason 2007[144]	Not review population
Mayor 2008[145]	Incorrect interventions
McCaffrey 2013[146]	Incorrect interventions
McCauley 2006[147]	Not review population
McCusker 2003[148]	Not review population
McHugh 2013[149]	Not review population
McLoughlin 2015[150]	Inappropriate study design
McNamara 2013[151]	Incorrect interventions
Melis 2010[153]	Not review population
Menon 2015[154]	Inappropriate study design
Mitchell 2004[155]	Incorrect interventions
Molina 2013[157]	Inappropriate study design
Monroe 2010[158]	Inappropriate study design
Montgomery 2003[159]	Not review population
Moriarty 2007[160]	Inappropriate study design
Morris 2013[161]	Inappropriate study design
Mottram 2002[162]	Systematic review is not relevant to review question or unclear PICO
Nielsen 2003[166]	Not review population
Nikmat 2015[167]	Not review population
Noble 2015[168]	Incorrect interventions
Noel 2000[169]	Not review population
Nowels 1999[170]	Incorrect interventions
O'Brien 2010[171]	Inappropriate study design
Oliver 2012[172]	Systematic review is not relevant to review question or unclear PICO
Ong 2011[173]	Inappropriate study design
Ouslander 2009[176]	Incorrect interventions. Not review population
Ouslander 2011[175]	Inappropriate study design
Pare 2009[178]	Inappropriate study design
Pare 2013[177]	Not review population
Parker 2009[179]	Not review population
Phelan 2015[182]	Systematic review is not relevant to review question or unclear PICO
Porter 2015[183]	Inappropriate study design
Pouliot 2015[184]	Not review population
Raftery 1996[187]	Incorrect interventions
Ranganathan 2013[188]	Not review population
Rich 1993[189]	Not review population
Sabesan 2012[191]	Not review population
Samii 2006[193]	Not review population

Study	Exclusion reason
Saugo 2008[194]	Incorrect interventions
Schectman 2014[195]	Inappropriate study design
Schneider 2016[196]	Inappropriate study design
Seamark 1998[197]	Incorrect interventions
Segelman 2014[198]	Not review population
Seibert 2008[199]	Not review population
Sejr Kirring 2013[200]	Inappropriate study design
Shepperd 1998[205]	Not review population
Shepperd 2016[204]	Systematic review is not relevant to review question or unclear PICO
Shepperd 2016[206]	Systematic review is not relevant to review question or unclear PICO
Smeenk 1998[208]	Systematic review is not relevant to review question or unclear PICO
Stall 2014[209]	Systematic review is not relevant to review question or unclear PICO
Stephens 2014[210]	Not review population
Sulistio 2015[211]	Incorrect interventions
Taft 2005[212]	Not review population
Takahashi 2012[213]	Not review population
Tam 2014[214]	Incorrect interventions
Terol 2001[215]	Inappropriate study design
Teunissen 2007[216]	Inappropriate study design
Tieman 2016[217]	Inappropriate study design
Tiernan 2002[218]	Inappropriate study design
Trahan 2016[219]	Inappropriate study design
Travers 2002[220]	Inappropriate study design
Treloar 2009[221]	Inappropriate study design
Tsamandouraki 1992	Incorrect interventions
Venning 1990[223]	Inappropriate study design
Ventura 2014[224]	Systematic review is not relevant to review question or unclear PICO
Vuorinen 2014[225]	Not review population
Wakefield 2008[226]	Not review population
Wales 1984	Incorrect interventions
While 2013[228]	Inappropriate study design
Whitten 2009[229]	Incorrect interventions
Wong 2005[231]	Not review population
Wootton 2009[233]	Not review population
Wootton 2010[234]	Not review population
Wray 2010[235]	Incorrect interventions
Wysocki 2014[236]	Incorrect interventions. Not review population
Yost 1995[237]	Not review population
Young 2010[239]	Inappropriate study design
Young 2011[240]	Inappropriate study design
Zheng 2016[241]	Systematic review is not relevant to review question or unclear PICO

Study	Exclusion reason
Zhou 2012[242]	Inappropriate study design
Zimmer 1985[243]	Not review population

J.1.2 Table 81: Studies excluded from the clinical review on the availability of additional community services in an acute/emergency scenario

Study	Exclusion reason
Addington-Hall 1992[2]	Incorrect interventions
Adib-Hajbaghery 2013[3]	Inappropriate study design
Ahlner-Elmqvist 2004[4]	Incorrect interventions
Aiken 2006[5]	Incorrect interventions
Aimonino Ricauda 2008[6]	Not review population
Anonymous 2005[7]	Inappropriate study design
Applebaum 1980[10]	Not review population
Arris 2015[11]	Inappropriate study design
Ausserhofer 2016[12]	Inappropriate study design
Axelsson 1998[13]	Incorrect interventions
Back 2005[14]	Incorrect interventions
Backus 2002[15]	Not review population
Bakitas 2009[17]	Incorrect interventions
Bakitas 2015[18]	Systematic review is not relevant to review question or unclear PICO
Barlow 2007[19]	Systematic review is not relevant to review question or unclear PICO
Barrett 2010[20]	Inappropriate study design
Bekkema 2015[21]	Inappropriate study design
Berkowitz 2005[23]	Not review population
Bernabei 1998[24]	Not review population
Biese 2014[25]	Not review population
Bower 2011[26]	Inappropriate study design
Bowles 2011[27]	Not review population
Brandi 2004[28]	Not review population
Brian Cassel 2016[30]	Incorrect interventions
Brooks 2014[31]	Not review population
Brumley 2003[33]	Incorrect interventions
Brumley 2007[32]	Incorrect interventions
Burke 2015[34]	Not review population
Butler 2012[35]	Inappropriate study design
Buurman 2010[36]	Not review population
Byron 2007[37]	Inappropriate study design
Candy 2011[38]	Systematic review is not relevant to review question or unclear PICO
Caplan 2004[39]	Not review population
Carr 2008[40]	Inappropriate study design
Chae 2001[42]	Not review population
Chen 2010[43]	Not review population
Cherofsky 2011[44]	Systematic review is not relevant to review question or unclear

	PICO
Chiang 2016[45]	Systematic review is not relevant to review question or unclear PICO
Chitnis 2013[46]	Incorrect interventions
Chumbler 2005[48]	Not review population
Chumbler 2009[47]	Not review population
Clark 2000[49]	Inappropriate study design
Cleland 2005[50]	Not review population
Coleman 2004[51]	Not review population
Condelius 2010[52]	Not review population
Corrie 2013[53]	Not review population
Costantini 2003[54]	Incorrect interventions
Crisp 2014[55]	Inappropriate study design
Cummings 1990[57]	Not review population
Cummings 2012[56]	Inappropriate study design. Not review population
Damiani 2009[58]	Not review population
Darkins 2015[59]	Not review population
De Almeida Mello 2016[60]	Not review population
De Conno 1996[61]	Inappropriate study design
De Graaf 2016[62]	Inappropriate study design
De Luca 2016[63]	Not review population
De Toledo 2006[64]	Inappropriate study design. Not review population
Dellasega 2001[65]	Not review population
Devlin 2009[66]	Inappropriate study design
Dhiliwal 2015[67]	Inappropriate study design
Dougherty 2015[68]	Inappropriate study design. Not review population
Downar 2013[69]	Incorrect interventions
Drame 2012[70]	Not review population
Dunagan 2005[71]	Not review population
Eklund 2013[72]	Not review population
Feltner 2014[73]	Not review population
Fernandes 2010[74]	Not review population
Ferrell 1998[75]	Incorrect interventions
Finkelstein 2004[76]	Not review population
Finlay 2002[77]	Systematic review is not relevant to review question or unclear PICO
Fontecha 2013[78]	Incorrect interventions. Not review population
Fowell 2002[79]	Incorrect interventions
Franks 2004[80]	Not review population
Garåsen 2007[82]	Not review population
Gardner-Nix 1995[83]	Inappropriate study design
Gibson 2016[84]	Inappropriate study design
Golbeck 2011[85]	Not review population
Goldman 2014[86]	Not review population
Gomes 2013[87]	Systematic review is not relevant to review question or unclear PICO
Gonseth 2004[88]	Not review population

Gott 2013[89]	Inappropriate study design
Grabowski 2014[90]	Not review population
Grady 2003[91]	Inappropriate study design
Graham 2005[92]	Incorrect interventions
Grande 2000[93]	Not review population
Gray 1987[94]	Incorrect interventions
Greer 1986[95]	Incorrect interventions
Haggerty 1991[96]	Not review population
Hagglund 2015[97]	Not review population
Herber 2013[98]	Systematic review is not relevant to review question or unclear PICO
Hex 2015[99]	Not review population
Higginson 2002[100]	Inappropriate study design
Hopp 2006[102]	Not review population
Howell 2011[103]	Inappropriate study design
Hughes 1990[105]	Not review population
Hughes 2000[106]	Incorrect interventions
Hui 2001[107]	Inappropriate study design
Ingleton 2011[108]	Inappropriate study design
Inglis 2015[109]	Not review population
Ishani 2016[110]	Not review population
Iupati 2016[111]	Inappropriate study design
Jocham 2009[112]	Incorrect interventions
Johnson 1988[113]	Incorrect interventions
Jordhoy 2000[114]	Incorrect interventions
Kane 1984[115]	Incorrect interventions
Kao 2015[116]	Incorrect interventions
Keating 2008[117]	Not review population
Kenny 2010[118]	Inappropriate study design. Not review population
Kidd 2010[119]	Systematic review is not relevant to review question or unclear PICO
Knies 2015[121]	Not review population
Kohri 2013[122]	Inappropriate study design
Kronman 2008[123]	Incorrect interventions
Kuo 2013[124]	Not review population
Kuzuya 2006[125]	Not review population
Low 2011[135]	Not review population
Laila 2008[126]	Not review population
Lakasing 2009[127]	Inappropriate study design
Lee 2000[129]	Not review population
Lee 2014[128]	Inappropriate study design
Leppert 2012[131]	Incorrect interventions
Liddy 2008[132]	Not review population
Lin 2015[133]	Not review population
Livingston 2013[134]	Incorrect interventions
Luckett 2013[136]	Systematic review is not relevant to review question or unclear PICO

Lutz 2009[139]	Not review population
Mader 2008[140]	Not review population
Maliakkal 2014[141]	Not review population
Mani 2014[142]	Inappropriate study design
Martin 1994[143]	Not review population
Mason 2007[144]	Not review population
Mayor 2008[145]	Inappropriate study design
McCauley 2006[147]	Not review population
McCusker 2003[148]	Not review population
McHugh 2013[149]	Not review population
McLoughlin 2015[150]	Inappropriate study design
McNamara 2013[151]	Incorrect interventions
Melin-Johansson 2010[152]	Incorrect interventions
Melis 2010[153]	Not review population
Menon 2015[154]	Inappropriate study design
Mitchell 2004[155]	Incorrect interventions
Moinpour 1989[156]	Inappropriate study design
Molina 2013[157]	Inappropriate study design
Monroe 2010[158]	Inappropriate study design
Montgomery 2003[159]	Not review population
Moriarty 2007[160]	Inappropriate study design
Morris 2013[161]	Inappropriate study design
Mottram 2002[162]	Systematic review is not relevant to review question or unclear PICO
Nielsen 2003[166]	Not review population
Nikmat 2015[167]	Not review population
Noble 2015[168]	Incorrect interventions
Noel 2000[169]	Not review population
Nowels 1999[170]	Incorrect interventions
O'Brien 2010[171]	Inappropriate study design
Oliver 2012[172]	Systematic review is not relevant to review question or unclear PICO
Ong 2011[173]	Inappropriate study design
Ouslander 2009[176]	Not review population. Incorrect interventions
Ouslander 2011[175]	Not review population
Pare 2009[178]	Inappropriate study design
Pare 2013[177]	Not review population
Parker 2009[179]	Not review population
Phelan 2015[182]	Systematic review is not relevant to review question or unclear PICO
Porter 2015[183]	Inappropriate study design
Pouliot 2015[184]	Not review population
Raftery 1996[187]	Incorrect interventions
Ranganathan 2013[188]	Not review population
Rich 1993[189]	Not review population
Riolfi 2014[190]	Incorrect interventions
Sabesan 2012[191]	Not review population

Sahlen 2016[192]	Incorrect interventions
Samii 2006[193]	Not review population
Saugo 2008[194]	Incorrect interventions
Schectman 2014[195]	Inappropriate study design
Schneider 2016[196]	Not review population. Inappropriate study design
Seamark 1998[197]	Incorrect interventions
Segelman 2014[198]	Not review population
Seibert 2008[199]	Not review population
Sejr Kirring 2013[200]	Inappropriate study design
Seow 2008[202]	Incorrect interventions
Seow 2014	Incorrect intervention
Sessa 1996[203]	Incorrect interventions
Shepperd 1998[205]	Systematic review is not relevant to review question or unclear PICO
Shepperd 2016[206]	Systematic review is not relevant to review question or unclear PICO
Smeenk 1998[207]	Incorrect interventions
Stall 2014[209]	Systematic review is not relevant to review question or unclear PICO
Stephens 2014[210]	Not review population
Sulistio 2015[211]	Incorrect interventions
Taft 2005[212]	Not review population
Takahashi 2012[213]	Not review population
Tam 2014[214]	Incorrect interventions
Terol 2001[215]	Inappropriate study design
Teunissen 2007[216]	Inappropriate study design
Tieman 2016[217]	Inappropriate study design
Tiernan 2002[218]	Inappropriate study design
Trahan 2016[219]	Inappropriate study design
Travers 2002[220]	Inappropriate study design
Treloar 2009[221]	Inappropriate study design
Tsamandouraki 1992[222]	Incorrect interventions
Venning 1990[223]	Inappropriate study design
Ventura 2014[224]	Systematic review is not relevant to review question or unclear PICO
Vuorinen 2014[225]	Not review population
Wakefield 2008[226]	Not review population
Wales 1983[227]	Incorrect interventions
While 2013[228]	Inappropriate study design
Whitten 2009[229]	Incorrect interventions
Wong 2005[231]	Not review population
Wong 2013[232]	Incorrect interventions
Wootton 2009[233]	Not review population
Wootton 2010[234]	Not review population
Wray 2010[235]	Incorrect interventions
Wysocki 2014[236]	Not review population. Incorrect interventions
Yost 1995[237]	Not review population

Young 2010[239]	Inappropriate study design
Young 2011[240]	Inappropriate study design
Zheng 2016[241]	Systematic review is not relevant to review question or unclear PICO
Zhou 2012[242]	Inappropriate study design
Zimmer 1985[243]	Not review population

J.2 Excluded economic studies

No economic studies were excluded from this review.