<table>
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<tr>
<th>Author, Year (Reference)</th>
<th>Domains</th>
<th>Type of Review</th>
<th>End Date</th>
<th>Sites of Search</th>
<th>Intervention</th>
<th>Other Reviews</th>
<th>Description of Subjects Included</th>
<th>Treatments Assessed(*)</th>
<th>Principal Outcomes Assessed(*)</th>
<th>Intervention Duration and Timing of Outcomes</th>
<th>Results</th>
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<tr>
<td>Higgins et al., 2000 (25)</td>
<td>Symptom: pain</td>
<td>Systematic review and meta-analysis</td>
<td>February to June 1999</td>
<td>72 citations including 5 systematic reviews, and 67 reports of 43 unique studies; 16 of 30 studies identified through reviews were randomized and controlled, as were 4 additional studies.</td>
<td>Intervention studies and analysis of site of death overlap completely with Gomes and Higgins's (60) update. Gysels and Higgins's (27) review addressed a much broader spectrum of issues within cancer care, unlike this one that focused on end stage, not specific to cancer.</td>
<td>Patients cared for by palliative care services (home care, hospital-based, and hospice in Europe, Australia, and the United States.</td>
<td>Any intervention of more than 1 individual, at least 1 of whom has specialist training, or who spend all their working time in palliative care, in a hospital, home or community setting, or in a combination of these.</td>
<td>Patient and caregiver quality of life, symptoms, site of death, healthcare use and costs.</td>
<td>Short-, intermediate- and long-term interventions</td>
<td>This review focused uniquely on a meta-analysis and review of the clinical effectiveness of palliative care teams.</td>
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<tr>
<td>Carr et al., 2002 (26)</td>
<td>Symptoms: pain and depression</td>
<td>Systematic review</td>
<td>June 2001</td>
<td>34 RCTs of pain interventions</td>
<td>The pharmacologic and medical therapies for pain and depression are not addressed elsewhere. The findings about the effectiveness of psychosocial and education changes are also addressed within Gysels and Higgins's (27) systematic review of supportive cancer care.</td>
<td>Patients with cancer</td>
<td>Any treatment for cancer-related pain and depression</td>
<td>Pain</td>
<td>Most were intermediate- to short-term</td>
<td>The review updated a review conducted for the AHRQ 2 y earlier. Thirty-four new studies, 5 of which were studies of chemotherapeutic agents, addressed cancer pain, including bone metastases (additional studies addressed mucositis). The studies addressed breakthrough pain, nonsteroidal, adjunct analgesics, radiotherapy or radiopharmaceuticals, opioids trials, and bisphosphonates. This update was consistent with the original review that found consistent evidence for the efficacy of these interventions, although study heterogeneity (in intervention design as well as outcome) precluded meta-analysis. The review was also unable to address the preferred route of administration or comparisons among drugs. Eleven controlled trials of the effect of medications on depressive symptoms in cancer patients were identified (6 of which were randomized, 1 of which addressed depression prevention and 1 of which was a pain study that included a depression outcome). All studies of antidepressants for 6 wk demonstrated efficacy. Two studies that were limited to 4 wk trials did not. Hundreds of studies addressed psychosocial interventions for depression, so the review only summarized meta-analyses. Psychosocial studies, including group or individual counseling, education, and social support strategies were effective.</td>
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</table>

Outcomes were extracted from all studies considered by the review. Patient outcomes were characterized as pain, other symptoms, quality of life, satisfaction, referral to other services, and therapeutic interventions. Twenty studies evaluated pain as an outcome, and standardized mean differences (SMD) were determined. The mean SMD was 0.41 (95% CI, 0.11 to 0.63) in favor of the effect of palliative care teams in reducing pain. 11 controlled trials of the effect of medications on depressive symptoms in cancer patients were identified, (6 of which were randomized) 1 of which addressed depression prevention, and 1 of which was a pain study that included a depression outcome. All studies of antidepressants for 6 or more weeks demonstrated efficacy. 2 studies which were limited to 4 week trials did not. Hundreds of studies addressed psychosocial interventions for depression, so the review only summarized meta-analyses. Psychosocial studies, including group or individual counseling, education, and social support strategies were effective.
<table>
<thead>
<tr>
<th>Study</th>
<th>Symptom</th>
<th>Review Type</th>
<th>Publication Date</th>
<th>Number of Studies</th>
<th>Study Design</th>
<th>Study Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gysels and Higginson, 2004</td>
<td>Pain, dyspnea, and depression</td>
<td>Systematic review</td>
<td>March 2003</td>
<td>317</td>
<td>22 overlapped multiple review domains</td>
<td>The review covered a broad range of interventions, especially those related to the clinical organization of care to improve supportive care for cancer, although symptoms were not a specific aim of the review.</td>
</tr>
<tr>
<td>Pan et al., 2000</td>
<td>Pain and dyspnea</td>
<td>Systematic review</td>
<td>1998</td>
<td>11 RCTs</td>
<td>2 nonrandomized, controlled trials</td>
<td>Extremely diverse (and mostly single) studies addressed TENS, acupuncture, massage, aromatherapy, psychological therapies, music therapy, hypnosis, acupressure, breathing retraining, psychoanalysis, breath counseling. All studies were small (the largest of acupuncture was 239 and most others included 20–30 patients). Study quality was not evaluated, and no conclusions could be offered about the effectiveness of individual modalities.</td>
</tr>
<tr>
<td>Wilson, 2004</td>
<td>Pain</td>
<td>Systematic review</td>
<td>September 2003</td>
<td>24 studies</td>
<td>Designs not reported</td>
<td>Most studies identified were observational, but interventions identified were reviewed by Gysels and Higginson (27) and Higginson et al. (25). The review was not organized to address symptom interventions specifically, although pain was frequently reported as an outcome of these studies.</td>
</tr>
<tr>
<td>Knott et al., 2005</td>
<td>Pain and depression</td>
<td>Systematic review</td>
<td>June 2004</td>
<td>34 RCTs and controlled clinical trials</td>
<td>N/A</td>
<td>Approximately half of studies included some measure of quality of life or symptoms. Among these heterogeneous studies, a beneficial effect of exercise was noted on pain in 2 studies, and depression or anxiety in 5 studies.</td>
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</table>

The review underscores the relevance of these approaches for improving symptomatic care, although there was mixed evidence in favor of any particular approach with regard to pain or dyspnea. The review examined social support and spiritual care. Two systematic reviews and 15 studies, including 6 high-quality, RCTs addressed social support. These studies all highlighted the importance of bridging professional roles and multidisciplinary efforts to improve social support. Fifteen studies within the overall review examined various interventions with behavioral components that were generally effective for depression. All studies of spiritual support that were identified were low quality, pointing out the need for additional research.
Lee et al., 2005 (51)  Symptom: pain  Systematic review  February 2004  7 intervention studies  N/A  This 1 high-quality, randomized study was published in 2003. Low-quality studies overlapped with Pain et al. (28).

Patients with cancer  Manual and ear acupuncture, electro-acupuncture  Pain  Immediate to 1 mo  3 RCTs were identified, only 1 of which was high quality (Jadad score 5). This placebo-controlled, 3-arm study of ear acupuncture in 90 patients demonstrated efficacy using the visual analogue scale.

Furlan et al., 2006 (32)  Symptom: pain  Meta-analysis  May 2005  41 randomized trials  N/A  None  6019 patients with chronic noncancer pain, average age 58.1 y (range, 40–71), 63% female, 85% white. Any opioid administered for 7 d or more. Trials were identified for codeine, morphine, tramadol, and propoxyphene.

Intensity of pain relief, function, and opioid side effects  1–16 wk  Thirty randomized, placebo-controlled trials identified, of which 28 were meta-analyzed (pain standardized mean difference [SMD], −0.60 [CI −0.69 to −0.50]). Functional status (SMD, −0.31 [CI −0.41 to −0.22]). Side effects that occurred more commonly on opioids included constipation (risk difference [RD], 16%), nausea (RD, 15%), dizziness or vertigo (RD, 8%), somnolence or drowsiness (RD, 9%), vomiting (RD, 5%) and dry skin, itching, or pruritis (RD, 4%). Most trials addressed arthritis or neuropathic pain, and the degree to which they addressed late-stage disease is unclear.

Tremont-Lukats et al., 2005 (33)  Symptom: pain  Meta-analysis  December 2002  27 randomized, double-blind, controlled trials  N/A  None  Patients with neuropathic pain, average age 51.7 y, median size for trials was 28. Systematically administered local anesthetic-type drugs (meperidine, lidocaine, and tocainamide).

Pain intensity (100 mm VAS most common)  Immediate- to short-term  19 trials evaluated lidocaine or mexiletine for chronic, neuropathic pain and found they were effective vs. placebo (weighted mean difference [WMD], −10.60 mm [CI −14.52 to −6.68, P < 0.001]). 5 trials compared lidocaine, mexiletine, or tocainamide vs. other analgesics and found no difference (WMD, −0.60 mm [CI −6.96 to 5.75 mm]). The degree to which these trials addressed late-stage disease is unclear.

Jennings et al., 2002 (61)  Symptom: dyspnea  Meta-analysis  May 1999  18 double-blind, RCTs  N/A  None  Patients with dyspnea from any disease. Two studies addressed cancer and 1 heart failure. Any opioid given to relieve dyspnea.

Dyspnea (most studies used visual analogue scale)  Immediate (single-dose studies) to short-term, (multiple-dose duration not described.)  16 of 18 studies had Jadad scores of 4, all of them only failing to describe randomization procedures. All studies were small with the total sample in the 18 studies of 293 and the largest study of 79 patients. Results across these studies were consistent, and 12 studies showed a pooled SMD, −0.31 (CI −0.50 to −0.13). No clinically significant adverse effects of opioids on respiratory function were noted in these studies.

Salman et al., 2003 (62)  Symptom: dyspnea  Meta-analysis  September 2000  20 randomized trials  N/A  None  Patients with COPD (FEV1<70% or FEV1/FVC<70%). Almost all studies addressed patients in their mid-60s. Almost all studies used intermittent oxygen use during exertion for COPD. Some studies used different doses or used intermittent oxygen use during exertion for COPD. 6–12 wk for patients with mild or moderate COPD (15 studies), 10 wk–2 mo for patients with severe COPD (6 studies).

Exercise capacity and dyspnea (12 studies used the CRQD)  Both walking distance and dyspnea outcomes were strongly related. Among all 12 studies that used the CRQD, 11 that included at least lower extremity training (vs. 1 that did not) demonstrated a pooled benefit. Of 3 studies of severe COPD, 2 that included at least 6 mo (vs. 1 of <3 mo) did not demonstrate benefit. Short- and longer-term trials were both effective in mild to moderate COPD.

Booth et al., 2004 (63)  Symptom: dyspnea  Meta-analysis  End date not reported (most recent trial 2001)  37 studies, including 20 randomized designs  N/A  None  Patients with advanced cancer, heart failure, and COPD. Intermittent, ambulatory, and long-term oxygen therapy.

All studies reported some measure of dyspnea (most commonly Borg or visual analogue scale)  Immediate, longer-term trials up to 12 wks  Most studies (22) were conducted to evaluate intermittent oxygen use during exertion for COPD. Of these, 13 demonstrated a benefit on dyspnea. Only 2 were negative, and others indicated increased endurance with equivalent dyspnea. Fewer studies evaluated COPD patients at rest, patients with cancer, or heart failure. With the exception of oxygen for exercise, evidence was mixed for all these conditions. 2 of 3 studies in advanced cancer showed benefit in crossover trials comparing room air.

Rain et al., 2005 (64)  Symptom: dyspnea  Meta-analysis  April 2004  20 RCTs  N/A  None  Patients with stable COPD. Theophylline treatment for 27 Dyspnea, patient preference, and walk distance.

Not reported  Only 2 studies reported dyspnea and wheezing using similar numerical scale. Together, they found nonsignificant improvements in symptoms. Five other studies reported disparate measures of symptoms, all of which reported improvement in the intervention group.
### Dyspnea

<table>
<thead>
<tr>
<th>Study</th>
<th>Symptom</th>
<th>Meta-analysis</th>
<th>Search Start Date</th>
<th>Search End Date</th>
<th>N/A</th>
<th>Meta-analysis</th>
<th>Search Termination Reported</th>
<th>Timing</th>
<th>Effect Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shukla et al., 2006 (65)</td>
<td>Dyspnea</td>
<td>Meta-analysis</td>
<td>December 2005</td>
<td>54 RCTs of crossover or parallel design from 33 unique studies</td>
<td>N/A</td>
<td>None</td>
<td>Patients with symptoms, stable airflow obstruction (FEV1 &lt;75%). Patients could be receiving inhaled steroids. Trials were included if FEV1/FVC was &lt;70% at baseline.</td>
<td>Long-acting β-agonists (formoterol or salmeterol) vs. anticholinergics (ipatropium or tiotropium) or placebo with or without rescue β-agonists</td>
<td>Dyspnea-free days, rescue medication use and exacerbations, and dyspnea self-report</td>
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</table>

### Depression

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<tr>
<th>Study</th>
<th>Symptom</th>
<th>Meta-analysis</th>
<th>Search Start Date</th>
<th>Search End Date</th>
<th>N/A</th>
<th>Meta-analysis</th>
<th>Search Termination Reported</th>
<th>Timing</th>
<th>Effect Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roffe et al., 2005 (71)</td>
<td>Depression</td>
<td>Systematic review</td>
<td>Search termination not reported but most recent citation 2002</td>
<td>6 RCTs</td>
<td>N/A</td>
<td>None</td>
<td>Patients with mixed-stage cancer</td>
<td>Guided imagery, imagery, or visualization as the sole adjuvant to patients undergoing therapy, or sole palliative therapy</td>
<td>Depression, anxiety</td>
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</tbody>
</table>

### Living with Advance Care Planning

<table>
<thead>
<tr>
<th>Study</th>
<th>Symptom</th>
<th>Meta-analysis</th>
<th>Search Start Date</th>
<th>Search End Date</th>
<th>N/A</th>
<th>Meta-analysis</th>
<th>Search Termination Reported</th>
<th>Timing</th>
<th>Effect Size</th>
</tr>
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<tbody>
<tr>
<td>Hanson et al., 1997 (76)</td>
<td>Advance care planning</td>
<td>Systematic review</td>
<td>March 1996</td>
<td>16 studies, 7 of which were randomized trials</td>
<td>N/A</td>
<td>This review and its conclusions overlap almost entirely with Guo and Harstall (79)</td>
<td>Healthy and chronically ill outpatients</td>
<td>Interventions to improve end-of-life care</td>
<td>Advance directive completion</td>
</tr>
<tr>
<td>Baggs, 2002 (77)</td>
<td>Advance care planning</td>
<td>Systematic review</td>
<td>2000</td>
<td>86 reports of some overlapping studies including multiple reports from 4 intervention trials, 3 of which were randomized</td>
<td>N/A</td>
<td>Mostly observational studies. Interventions covered by Higginson et al. (25)</td>
<td>Patients with advanced or terminal illness, age &gt;45 y</td>
<td>Interventions to improve end-of-life care</td>
<td>Diverse</td>
</tr>
<tr>
<td>Song, 2004 (78)</td>
<td>Advance care planning</td>
<td>Systematic review</td>
<td>December 2002</td>
<td>7 studies, including 5 RCTs</td>
<td>2 observational studies</td>
<td>No other review aimed to characterize effective outcomes. Healthy or chronically ill, mostly elderly outpatients. One study addressed inpatients. Discussions addressed end-of-life care</td>
<td>Satisfaction, emotional well-being</td>
<td>Not reported</td>
<td>Few studies have evaluated effective outcomes of advance care planning. Three studies, 2 of which were randomized, showed improved satisfaction or emotional well-being following discussions. No study demonstrated a worsening of satisfaction or emotional well-being following care planning discussions.</td>
</tr>
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</table>
Advance review, support the effectiveness various communication interventions (prompts to physicians, physician–patient communication, education) to improve advance directive completion rates in outpatient and nursing home settings.

Oomas and Higginson, 2006 (86)  
Advance care planning  | Meta-analysis  | September 2004  | 58 studies, including 3 RCTs and 1 quasi-experimental study  | Studies through 1999 were addressed in a previous report (4)  | Terminally ill patients with cancer  | Intervention studies included various palliative care or hospice services  | Site of death  | Not reported  

The review identified a limited number of interventional studies. 17 factors were associated with home death in the observational literature, including low functional status, preferences, previous receipt of home care and its intensity, living with relatives, and extended family support.

Higginson et al., 2000 (25)  
Advance care planning  | Systematic review and meta-analysis  | February to June 1999  | 72 citations, including 5 systematic reviews and 67 reports of 43 unique studies identified through reviews were randomized and controlled, as were 4 additional studies  | Changes and analysis of site of death overlap completely with Gomes and Higginson’s (80) update.  | Patients cared for by palliative care services (home care, hospital-based, and hospice in Europe, Australia, and the United States)  | Any intervention of more than 1 individual, at least 1 who has specialist training or spends all their working time in palliative care, in a hospital, home or community setting, or in a combination of these.  | Patient and caregiver quality of life and symptoms, site of death, healthcare utilization, and costs.  | Short-, intermediate- and long-term interventions  

This review focused uniquely on a meta-analysis and review of the clinical effectiveness of palliative care teams. Many of the palliative interventions are included in a later update focused specifically on cancer Gysels and Higginson (27).

Outcomes were extracted from all studies considered by the review. 9 studies included information on home death rate. Although the SMD was significant (0.28), excluding 1, large, outlier study (National Hospice Study) reduced the estimate of effect and its significance 0.18 (CI = 0.07 to 0.33).

Shaw et al., 2006 (81)  
Advance care planning  | Systematic review  | December 2004  | 16 studies, including 2 interventions  | None  | The 2 intervention trials addressed whether discussing patient preferences improved surrogate concordance accuracy  | Patient-surrogate concordance  | Not reported  

Only 2 of 16 studies evaluated interventions. Observational studies indicated that surrogates often understood patient preferences (68% concordance for 19 526 paired responses); however, the 2 intervention studies were ineffective in improving surrogate concordance.

Wilson, 2004 (29)  
Advance care planning  | Systematic review  | September 2003  | 11 studies, design not reported  | Intervention studies covered in Wilson overlap almost completely with previous reviews by Higginson et al. (25) and Gysels and Higginson (27)  | Patients with serious, chronic, or terminal illness  | Palliative care and hospice service delivery innovations in hospital, home care, nursing home, and hospice settings.  | Advance directive completion  | Short, intermediate, and long-term interventions  

Most studies identified were observational, but interventions identified were reviewed by Gysels and Higginson (27) and Higginson et al. (25).
| Oysels and Higginson, 2004 (27) | Continuity Systematic review March 2003 | 317 studies (22 overlapped multiple review domains), 13 studies on coordination of care, including 11 RCTs. 317 studies (22 overlapped multiple review domains). 2 observational studies address coordination, 5 addressed information enhancement | Wilson (29) overlapped but was much less extensive | Patients with cancer | Any intervention to improve supportive or palliative care. Review examined diverse system interventions to improve aspects of supportive or palliative cancer care. These interventions included care coordination, promoting user involvement, face-to-face communication, improving information, psychological, spiritual, and social support, generalist and specialist palliative care delivery, rehabilitation, complementary and alternative therapies, and caregiver support including bereavement. | Symptoms, quality of life, patient, caregiver, and provider satisfaction with care, knowledge, place of care and site of death, utilization | Short-, intermediate- and long-term interventions | The review covered a broad range of interventions, especially those related to the clinical organization of care, to improve supportive care for cancer. |

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2 meta-analyses (discussing 23 RCTs) and 11 RCTs addressed face-to-face communication. 2 meta-analyses, 1 of which included 10 RCTs and 17 additional RCTs on information enhancement.

The review addressed several areas with specific implications for continuity—coordination of care, information, and communication. A key aspect of studies that improved coordination and was associated with successful home-based care was enhanced communication between professional providers and caregivers.

With respect to face-to-face communication, the review suggested that a few high-quality studies support training strategies to improve physician communication. Mixed evidence supports a relationship between improved physician communication and patient outcomes.

Regarding information enhancement strategies, effective approaches stressed processes that included listening to, recording, and responding to patient's needs and priorities.
Continuity Systematic review and meta-analysis February to June 1999 72 citations including 5 systematic reviews, and 67 reports of 43 unique studies; 15 / 30 studies identified through reviews were randomized and controlled, as were 4 additional studies. Changes and analysis of site of death overlap completely with Gomes and Higginson’s (80) update -10 30 studies identified through systematic reviews were retrospective or observational, as were 10 of the additional studies. Patients cared for by palliative care services (home care, hospital-based, and hospice) in Europe, Australia, and the United States Any intervention of more than one individual, at least one of whom has specialist training, or who spends all their working time in palliative care, in a hospital, home / community setting or in a combination of these. Patient and caregiver quality of life and symptoms, site of death, healthcare utilization, costs. Short, intermediate, and long term interventions This review focused uniquely on a meta-analysis and review of the clinical effectiveness of palliative care teams. Many of the palliative interventions are included in a later update focused specifically on cancer (27).

Outcomes were extracted from all studies considered by the review. 9 studies included information on home death rate. Although the SMD was significant (0.28), excluding one, large outlier study (National Hospice Study) reduced the estimate of effect and its significance (0.18, 95% CI -0.07 to 0.33).

Based on a priori decision and confirmed by tests of homogeneity, studies were evaluated based on whether they were multidisciplinary team oriented, focused on enhancing patient self-care, or used telephone coordination. Multidisciplinary teams demonstrated the most impact on mortality risk (risk ratio [RR] 0.75, 95% CI 0.59 to 0.96), heart failure (RR 0.74, 95% CI 0.63 to 0.87) and all-cause hospitalizations (RR 0.81, 95% CI 0.71 to 0.92). Other strategies were beneficial, but less so.

Patients in these trials had a high mortality rate (10-30% over 6-12 mo of follow-up). During a pooled mean observation period of 8 mo, there were less readmissions in 18 studies among intervention than control patients (relative risk [RR] 0.75, 95% CI 0.64 to 0.88). In 14 studies, there was a trend toward lower mortality among intervention patients, and in 6 studies a greater percentage improvement in quality of life scores.
| Smeenk et al., 1998 (115) | Systematic review | 1997 | 9 studies, including 5 randomized | Not reported | Complete overlap of intervention studies with Higginson et al. (25) | Patients with terminal cancer | Intervention aimed at more than 1 aspect of care with the main goal of improving home support | Quality of life, readmission | Immediate to 3 mos | Heterogeneity and limited outcomes did not allow for synthesis, but there were no benefits to special home care services for patients with cancer. Very few high quality studies were identified. |
| Taylor et al., 2005 (113) | Meta-analysis | January 2005 | 9 RCTs | N/A | None | Patients with moderate to severe chronic obstructive pulmonary disease (COPD) | Nursing led or coordinated case management | Mortality, readmission, and quality of life (7 studies) and disability (5 studies) | 3–12 mos | 2 studies evaluated interventions of only 1 mo with little evidence of benefit. Meta-analysis of longer term interventions indicated no difference in mortality (odds ratio 0.85, 95% CI 0.58 to 1.26), as well as quality of life, disability, or emotional well-being. Mixed evidence was found (2 trials favoring, 3 not favoring) with respect to reducing readmission. |
| Wilson 2004 (29) | Systematic review | September 2003 | 11 studies, design not reported | Design not reported | Intervention studies covered in Wilson overlap almost completely with prior reviews by Higginson et al. (25) and Gysels and Higginson (27) | Patients with serious, chronic, or terminal illness | Palliative care and hospice service delivery innovations in hospital, home care, nursing home, and hospice settings. | Communication and site of care | Not reported | Most studies identified were observational, but interventions identified were reviewed by Gysels and Higginson (27) and Higginson et al. (25). One summary covered nurse case management, finding mixed evidence, although only 4 relevant RCTs were cited. |
| Windham et al., 2003 (118) | Systematic review | March 2002 | 32 studies including 15 RCTs, 16 controlled designs | 1 descriptive study | Focused on older heart failure patients regardless of setting | Older patients with heart failure (median study size, 63) | Interventions to reduce utilization | Hospital admissions (29 studies), hospital days, and other utilization measures | Not reported | More effective studies used a variety of interventions including close monitoring of symptoms by nurses or care managers. Education was common component of effective programs, and they often included a multidisciplinary team component (e.g., physician, nurse, and case managers). |
| Acton and Kang, 2001 (132) | Meta-analysis | 1999 | 24 reports, including 13 experimental studies and 14 quasi-experimental or before and after evaluations | N/A | The study was dementia-specific, so narrower than Sorenson (133) and more stringent designs than Yin (130) | 1254 caregivers of patients with dementia (mean 51 participants per study) | Interventions designed to reduce burden for caregivers of patients with dementia | Caregiver burden | Immediate to 8 mo | Weighted pooled effect of 21 homogenous interventions was insignificant (-0.08, 95% CI -0.19 to 0.02). Examining specific intervention types, 3 multi-component studies showed a small effect on burden (0.46, 95% CI 0.14 to 0.78), although other intervention types did not. |
| Acton and Winter, 2002 (131) | Systematic review | 2001 | 73 published and unpublished reports, all of which had either control group or pre-post design | N/A | This review overlaps with Acton’s other review, and discusses a wider range of study designs using a qualitative synthesis | Caregivers of patients with dementia | Interventions designed to reduce burden for caregivers of patients with dementia | Caregiver burden, knowledge, psychosocial wellbeing | Immediate to 1 year | The findings of this review were similar to those of Acton and Winter’s (131) methodologically more stringent and quantitative review. |
The review covered a broad range of interventions, especially those related to the clinical organization of care, to improve supportive care for short, cancer, with respect to services for caregivers, studies were too diverse to draw conclusions related to specific supportive strategies.

Interventions included care coordination, promoting user involvement, face to face communication, improving information, psychological, spiritual, and social support, generalist and specialist palliative care delivery, rehabilitation, complementary and alternative therapies, and caregiver support including bereavement.

Outcomes were extracted from all studies considered by the review. 13 studies reported caregiver outcomes and a standardized mean difference was 0.15 (95% CI -0.14 to 0.48) consistent with a nonsignificant positive effect.
### Wilson et al., 1999 (129)
- **Caregiving burden**: Systematic review
- **June 1998**
- **83 studies identified, 22 'key papers' highlighted in the paper, of which 3 are randomized designs**
- **Intervention trials discussed in 'key papers' also identified in Higginson et al. (25)**
- **Palliative care services including hospice**
- **Patient and caregiver satisfaction**
- **Not reported**

> The small, methodologically limited studies identified suggested an association between palliative care and improved satisfaction.

### Wilson, 2004 (29)
- **Caregiving burden**: Systematic review
- **September 2003**
- **3 reviews and 8 studies, design not reported**
- **Intervention studies covered in Wilson overlap almost completely with prior reviews by Higginson et al. (25) and Gysels and Higginson (27)**
- **Patients with serious chronic or terminal illness**
- **Palliative care and hospice service delivery innovations in hospital, home care, nursing home, and hospice settings.**
- **Diverse family needs**
- **Short, intermediate, and long term interventions**
- **Most studies identified were observational, but interventions identified were reviewed by Gysels and Higginson (27) and Higginson et al. (25).**

### Yin et al., 2002 (130)
- **Caregiving burden**: Meta-analysis
- **2000**
- **26 studies included 17 randomized designs**
- Similar review aim to Sorenson (133) but narrower methodological criteria. About half of studies overlap.
- **1970 caregivers of elderly adults, mean study size 109, mean caregiver age 60.1 y, 79% women**
- **Interventions to reduce burden for caregivers of elderly adults**
- **Caregiver burden**
- **2 wk to 1 year**

Both group and individual interventions demonstrated a positive, beneficial effect. Weighted mean effect for all studies was 0.41 (95% CI 0.32 to 0.51) indicating a moderate positive treatment effect. That effect was maintained but diminished among the 11 randomized studies.

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* Reviews may have had broader aims or the studies may have included other outcomes, but those that are most relevant to this review are highlighted. Three reviews addressed multiple domains and each of these reviews is described in each section to which it was relevant. AHRQ = Agency for Healthcare Research and Quality; COPD = Chronic Respiratory Disease Questionnaire; OR = odds ratio; RCT = randomized controlled trial; RD = risk difference; SMD = standardized mean differences; WMD = weighted mean difference.