This review focused uniquely on a meta-analysis and review of the clinical effectiveness of palliative care teams.

AHRQ, 2002; Carr et al., 2002; Higginson et al., 2000; Gysels and Higginson's (27) review.

The review updated a review conducted for the AHRQ 2 years earlier. Thirty-four new studies, 5 of which were studies of chemotherapeutic agents, were identified with 14 of 30 studies and included in this review.

Patients with cancer were included in 24 of 30 studies; the remaining 6 studies addressed depression prevention and 1 of which was a pain study that included a depression outcome. All studies of antidepressants for depression, so the review only summarized meta-analyses. Psychosocial studies, including group or individual counseling, education, or social support strategies were effective.

Outcomes were extracted from all studies, including those of depression and pain. The review 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 interventions for depression (AHRQ) 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.

Pain most were addressed, which included counseling, education, and social support strategies. The findings about the effectiveness of psychosocial and education changes are also addressed within the original review that found consistent evidence for these interventions, although study heterogeneity in intervention design as well as outcome prevented meta-analysis. The review was also unable to address the preferred route of administration or comparisons among interventions for depression (AHRQ) 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.

Pain most were addressed; which included counseling, education, and social support strategies. The findings about the effectiveness of psychosocial and education changes are also addressed within the original review that found consistent evidence for these interventions, although study heterogeneity in intervention design as well as outcome prevented meta-analysis. The review was also unable to address the preferred route of administration or comparisons among interventions for depression (AHRQ) 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.

Pain most were addressed; which included counseling, education, and social support strategies. The findings about the effectiveness of psychosocial and education changes are also addressed within the original review that found consistent evidence for these interventions, although study heterogeneity in intervention design as well as outcome prevented meta-analysis. The review was also unable to address the preferred route of administration or comparisons among interventions for depression (AHRQ) 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.

Pain most were addressed; which included counseling, education, and social support strategies. The findings about the effectiveness of psychosocial and education changes are also addressed within the original review that found consistent evidence for these interventions, although study heterogeneity in intervention design as well as outcome prevented meta-analysis. The review was also unable to address the preferred route of administration or comparisons among interventions for depression (AHRQ) 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.
Gysels and Higginson, 2004 (27)  
Symptoms: pain, dyspnea, and depression  
Systematic review  
March 2003  
317 studies (22 overlapped multiple review domains), many studies addressed symptoms, although the review did not present results specifically by symptoms.

317 studies (22 overlapped multiple review domains), many studies addressed symptoms although the review did not present results specifically by symptoms.

Partial overlap with other earlier reviews that covered aspects of care planning or support for caregivers of patients with cancer. This review was much more comprehensive and included a discussion of other reviews and meta-analyses relevant to the topic.

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, and utilization  
Short-, intermediate-; and long- 

Interventions  
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.

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.

Pan et al., 2000 (28)  
Symptoms: pain and dyspnea  
Systematic review  
1998  
11 RCTs, 2 nonrandomized, controlled trials  
8 case reports  
Low-quality studies overlapped with Lee et al. (31)  
Patients receiving palliative or terminal care.  
Complementary and alternative interventions for pain and dyspnea.  
Pain and dyspnea  
Not reported  
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.

Wilson, 2004 (29)  
Symptom: pain  
Systematic review  
September 2003  
24 studies, designs not reported.  
Intervention studies covered 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.  
Pain and other symptoms  
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). The review was not organized to address symptom interventions specifically, although pain was frequently reported as an outcome of these studies.

Knott et al., 2005 (30)  
Symptoms: pain and depression  
Systematic review  
June 2004  
34 RCTs and controlled, clinical trials  
N/A  
None  
Patients with cancer (16 addressed breast cancer, 22 addressed active treatment, and 12 post-treatment phase)  
Physical exercise  
Physical function and quality of life, including symptoms  
5 wk–12 mo  
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.
Lee et al., 2005 (31)  
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).

Pain in cancer  
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 93 patients demonstrated efficacy using the visual analogue scale.

Furlan et al., 2006 (32)  
Symptom: pain  
Meta-analysis  
May 2005  
41 randomized trials  
N/A  
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 −0.56]). 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 pruritus (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 (mexilitine, lidocaine, and tocainamide)  
Pain intensity (100 mm VAS most common)  
Immediate-to-short-term  
18 trials evaluated lidocaine or mexilitine for chronic, neuropathic pain and found they were effective vs. placebo (weighted mean difference [WMD], −0.60 mm [CI, −1.42 to −0.68], P <0.001). 5 trials compared lidocaine, mexilitine, or tocainamide vs. other anaesthetics 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 <75%). Almost all studies addressed patients in their mid-60s.

Any type of rehabilitation (upper-extremity, lower-extremity, or respiratory muscle exercise)  
Exercise capacity and dyspnea (12 studies used the CRQD)  
6–12 wk for patients with mild or moderate COPD (15 studies), 10 wk–2 mo for patients with severe COPD (6 studies)  
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.

Raim 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.
Symptom: dyspnea

Meta-analysis

December 2005

54 RCTs of crossover or parallel design from 33 unique studies

N/A

None

Patients with symptoms, stable airflow obstruction (FEV₁ <75%), Patients could be receiving inhaled steroids. Trials were included if FEV₁/FVC was <70% at baseline.

Long-acting β-agonists (formoterol or salmeterol) vs. anticholinergics (ipatropium or tiotropium) or placebo with or without rescue β-agonists

Dyspnea-free days, rescue medication use and exacerbations, and dyspnea self-report

4–16 wk

Few studies reported symptom-free days and nights, and measures were heterogeneous. Twelve studies comparing long-acting β-agonists to placebo reduced exacerbations (odds ratio [OR], 0.74 [CI, 0.64 to 0.87]). Four studies reported hospitalization and the pooled effect indicated reduced risk of hospitalization. No difference was noted vs. anticholinergics. Two studies comparing long acting β-agonists to placebo reported dyspnea using the Transitional Dyspnea Index and the pooled effect for the odds ratio of clinically meaningful improvement in dyspnea was 1.70 (CI 1.25 to 2.31, P <0.001). No difference in TDI was noted in 2 studies that compared long acting β-agonists to anticholinergics.

Roffe et al., 2005 (71)

Symptom: depression

Systematic review

Search termination not reported but most recent citation 2002

6 RCTs

N/A

None

Patients with mixed-stage cancer

Guided imagery, imagery, or visualization as the sole adjuvant to patients undergoing therapy, or sole palliative therapy

Depression, anxiety

Immediate to 3 wks

Only 4 of 6 studies were published and all were small and of low quality. No conclusions could be drawn about the effectiveness of guided imagery.

Walsh et al., 1998 (75)

Advance care planning

Systematic review

August 1997

10 RCTs

N/A

Four of 10 studies also cited by Gysels and Higginson (27)

Cancer outpatients

Communication interventions to improve breaking bad news, including written summaries and audiotapes

Knowledge recall, understanding, satisfaction, psychological well-being

5 d–5 mo

Inconsistent effects on knowledge and satisfaction noted, and few studies addressed psychological adjustment.

Hanson et al., 1997 (76)

Advance care planning

Systematic review

March 1996

16 studies, 7 of which were randomized trials

N/A

This review and its conclusions overlap almost entirely with Guo and Harstall (79)

Healthy and chronically ill outpatients

Interventions to improve end-of-life care

Advance directive completion

Not reported

All the studies addressed end-of-life discussions and advance directive completion.

Baggs, 2002 (77)

Advance care planning

Systematic review

2000

86 reports of some overlapping studies, including multiple reports from 4 intervention trials, 3 of which were randomized

Mostly observational studies.

Interventions covered by Higginson et al. (25)

Patients with advanced or terminal illness, age >45 y

Interventions addressed hospital-based, end-of-life care

Diverse

Not reported

The few and diverse nature of the interventions precludes conclusions about effective practices to improve care.

Song, 2004 (78)

Advance care planning

Systematic review

December 2002

7 studies, including 5 RCTs

2 observational studies

No other review aimed to characterize effective outcomes.

Healthy or chronically ill, mostly older outpatients. One study addressed inpatients.

Discussions addressed end-of-life care

Satisfaction, emotional well-being

Not reported

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.
Guo and Hardall, 2004 (79) | Advance care planning | Systematic review | March 2004 | 1 systematic review (Rolle et al. (71)) and 10 RCTs | N/A | This report subsumed Hanson et al. (76). Mostly elderly patients, including those in nursing homes (2 studies), hospitals, and outpatient settings. Interventions to improve advance directive implementation. Advance directive completion rates, understanding, satisfaction. Not reported. The review was intended to identify studies supporting advance directive implementation. Six of the RCTs, as well as studies addressed in the review, support the effectiveness of 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 (80) | Advance care planning | Meta-analysis | September 2004 | 59 studies, including 3 RCTs and 1 quasi-experimental study | 54 observational studies | 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. 15 of 30 studies identified through reviews were randomized and controlled, as were 4 additional studies. 14 of 30 studies identified through systematic reviews were retrospective or observational, as were 10 of the additional studies. Changes and analysis of site of death overlapped 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).

Shalowitz et al., 2006 (81) | Advance care planning | Systematic review | December 2004 | 16 studies, including 2 interventions | 14 observational studies | None | Unclear. The 2 intervention trials addressed whether discussing patient preferences improved surrogate accuracy. Patient–surrogate concordance. Not reported. Outcomes were extracted from all studies considered by the review. 9 studies included information on home death rate. Although the SMD was significant (0.33), excluding 1, large, outlier study (National Hospice Study) reduced the estimate of effect and its significance 0.18 (CI =0.07 to 0.33).

Wilson, 2004 (29) | Advance care planning | Systematic review | September 2003 | 11 studies, design not reported | 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).
<table>
<thead>
<tr>
<th>Gysels and Higginson, 2004 (27)</th>
<th>Continuity Systematic review</th>
<th>March 2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>317 studies (22 overlapped multiple review domains), 13 studies on coordination of care, including 11 RCTs.</td>
<td>Wilson (29) overlapped but was much less extensive</td>
<td>Patients with cancer</td>
</tr>
<tr>
<td>317 studies (22 overlapped multiple review domains), 2 observational studies address coordination, 5 addressed information enhancement</td>
<td>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.</td>
<td>Symptoms, quality of life, patient, caregiver, and provider satisfaction with care, knowledge, place of care and site of death, utilization</td>
</tr>
<tr>
<td>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</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.</td>
<td></td>
</tr>
</tbody>
</table>

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 patients’ needs and priorities.
Higginson et al., 2000 (25)
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.
14/30 studies identified through systematic reviews were retrospective or observational, as were 10 of the additional studies.
Changes and analysis of site of death overlap completely with Gomes and Higginson’s (80) update.
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).

McAlister et al., 2004 (116)
Continuity Meta-analysis
2003
29 randomized trials
N/A
Focused on outpatient heart failure care and broad inclusion criteria.
5039 patients with heart failure
Outpatient-based multidisciplinary management strategies
Mortality, readmission
3–12 mo
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 0.93). Other strategies were beneficial, but less so.

PHease et al., 2004 (117)
Continuity Meta-analysis
October 2003
18 randomized controlled studies
N/A
Narrowly construed to evaluate high-quality studies of readmission, the study overlaps partially with McAlister (24) and Windham (29) which was broader in aims and design.
Older (>55 y) patients discharged from the hospital with heart failure.
3304 patients in the included studies were 62% male and 14% nonwhite.
Mean participant age was >70 y in 16/18 trials and mean left ventricular ejection fraction <40% in 8 trials.
Interventions targeting heart failure with components for inpatient care and post-discharge support.
Readmission and mortality
3–12 mo
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.

Ram et al., 2004 (114)
Continuity Meta-analysis
May 2003
7 randomized trials
N/A
None
744 patients presenting to the emergency department with an acute exacerbation of COPD, considered for admission, elderly (mean age in 6 trials 68–71 y), balanced gender except for 1 study
Hospital at home versus hospitalization
Mortality (8 studies) and readmission (7 studies)
2–3 mo
Mortality (relative risk 0.89, 95% CI 0.72 to 1.12) and hospital re-admission (relative risk 0.86, 95% CI 0.61-1.05) were not significantly different compared with inpatient care. Costs were significantly lower in four studies (1 Spanish, 1 Australian) that reported it favoring hospital at home.
Immediate to 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.

### Quality of life, readmission

6 mos

Very few high quality studies were identified.

### Intervention

**Smeenk et al., 1998 (115)**
- **Continuity** Systematic review
- **Year** 1997
- **Studies** 9, including 5 randomized
- **Not reported**
- **Patients with** terminal cancer
- **Intervention** aimed at more than 1 aspect of care with the main goal of improving home support
- **Quality of life, re-admission** Immediate to 8 mos

**Taylor et al., 2005 (113)**
- **Continuity** Meta-analysis
- **January** 2005
- **9 RCTs**
- **N/A** None
- **Patients with** moderate to severe chronic obstructive pulmonary disease (COPD)
- **Intervention** Nurse-led or coordinated case management
- **Mortality, re-admission, and quality of life (7 studies) and disability (5 studies)**
- **Not reported Complete overlap**

**Wilson 2004 (29)**
- **Continuity** 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)**

**Windham et al., 2003 (118)**
- **Continuity** Systematic review
- **March 2002**
- **32 studies including 15 RCTs, 16 controlled designs**
- **1 descriptive study**
- **Focused on older heart failure patients regardless of setting**
- **Other patients with heart failure (median study size, 63)**
- **Not reported**

**Acton and Kang, 2001 (132)**
- **Caregiving burden** 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)**
- **Caregiver burden** Immediate to 8 mo

**Acton and Winter, 2002 (131)**
- **Caregiving burden** 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 cancer. With respect to services for caregivers, studies were too diverse to draw conclusions related to specific supportive strategies. Intermediate, and long term symptoms, 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.

Interventions and analysis of site of death overlap completely with Gomes and Higginson’s (60) update. Patients cared for by palliative care services (home care, hospital based, and hospice in Europe, Australia, and the United States) 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.

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 (4).

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.

Downloaded From: http://annals.org/pdfaccess.ashx?url=/data/journals/aim/20152/ on 10/15/2018
<table>
<thead>
<tr>
<th>Reference</th>
<th>Topic</th>
<th>Methodology</th>
<th>Year</th>
<th>Studies</th>
<th>Key Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wilkinson et al., 1999</td>
<td>Caregiving burden</td>
<td>Systematic review</td>
<td>June 1998</td>
<td>83 studies identified; 22 key papers highlighted in the paper, of which 3 are randomized designs</td>
<td>Not reported</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Intervention trials discussed in key papers identified in Higginson et al. (25)</td>
<td>Terminal illness patients</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Palliative care services including hospice</td>
<td>Patient and caregiver satisfaction</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Not reported</td>
<td>The small, methodologically limited studies identified suggested an association between palliative care and improved satisfaction.</td>
</tr>
<tr>
<td>Wilson, 2004 (29)</td>
<td>Caregiving burdens</td>
<td>Systematic review</td>
<td>September 2003</td>
<td>3 reviews and 8 studies, design not reported</td>
<td>Design not reported</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Intervention studies covered in Wilson overlap almost completely with prior reviews by Higginson et al. (25) and Gysels and Higginson (27)</td>
<td>Patients with serious chronic or terminal illness</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Palliative care and hospice service delivery innovations in hospital, home care, nursing home, and hospice settings.</td>
<td>Diverse family needs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Most studies identified were observational, but interventions identified were reviewed by Gysels and Higginson (27) and Higginson et al. (25).</td>
<td>Short, intermediate, and long term interventions</td>
</tr>
<tr>
<td>Yin et al., 2002 (130)</td>
<td>Caregiving burden</td>
<td>Meta-analysis</td>
<td>2000</td>
<td>26 studies included 17 randomized designs</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Similar review aim to Sorenson (133) but narrower methodological criteria. About half of studies overlap.</td>
<td>1970 caregivers of elderly adults, mean study size 109, mean caregiver age 60.1 y, 79% women</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Interventions to reduce burden for caregivers of elderly adults</td>
<td>Caregiver burden</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2 wk to 1 year</td>
<td>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.</td>
</tr>
</tbody>
</table>

* 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.