

Appendix A. List of Acronyms

Acronym	Definition
RCT	Randomized Controlled Trial
QOL	Quality of Life
KQ	Key Question
BPI	Brief Pain Inventory
POLST	Physicians Orders for Life Sustaining Treatment
EPC	Evidence-based Practice Center
COPD	Chronic Obstructive Pulmonary Disease
ROB	Risk of Bias
AHRQ	Agency for Healthcare Research and Quality
CQG	Closing The Quality Gap

Appendix B. Detailed Search Strategies

Appendix B.1. General search strings

PubMed	((("end of life"[tiab] OR "palliative care"[mh] OR "palliative care"[tiab] OR "hospice care"[mh] OR "hospice care"[tiab] OR "supportive care"[tiab] OR "terminally ill"[tiab] OR "terminal care"[tiab]) AND ("quality improvement"[mh] OR "quality improvement"[tiab] OR "quality assurance, health care"[mh] OR "quality assurance"[tiab] OR "continuity of patient care"[mh] OR "patient care planning"[mh] OR "patient care planning"[tiab] OR "consult"[tiab] OR "systematic measurement"[tiab] OR "systematic assessment"[tiab])) NOT (editorial[pt] OR comment[pt]))	3419	Limited to 2000-2011
PsycINFO	(End of life OR palliative care OR hospice care OR supportive care OR terminally ill OR terminal care) AND (Quality improvement OR quality assurance OR continuity of patient care OR patient care planning OR consult OR systematic measurement) from 2000 to 2011	170	
CINAHL	(End of life OR palliative care OR hospice care OR supportive care OR terminally ill OR terminal care) AND (Quality improvement OR quality assurance OR continuity of patient care OR patient care planning OR consult OR systematic measurement) from 2000 to 2011	1020	
Cochrane			
1	Palliative care OR Palliative care MeSH	1592	
2	Hospice care OR Hospice care MeSH	154	
3	Quality assurance, health care MeSH	750	
4	Continuity of patient care MeSH	437	
5	Patient care planning OR patient care planning MeSH	408	
6	End of life OR supportive care OR terminally ill OR terminal care	4532	
7	#1 OR #2 OR #6	5864	
8	Quality assurance OR quality assurance, health care MeSH	988	
9	Patient care planning OR patient care planning MeSH	1680	
10	Quality improvement OR (quality assurance, health care MeSH OR quality assurance) OR continuity of patient care MeSH OR (patient care planning OR patient care planning MeSH) OR consult OR systematic measurement OR systematic assessment	12296	
11	#7 AND #10	1209	
12	#11 from 2000 to 2011	989	
DARE	(End of life OR palliative care OR hospice care OR supportive care OR terminally ill OR terminal care) AND (Quality improvement OR quality assurance OR continuity of patient care OR patient care planning OR consult OR systematic measurement) from 2000 to 2011	429/194/205/30	

Appendix B.2. Cancer management and pain search strings

PubMed	((Cancer[tiab] AND care[tiab]) AND (communication[mh] OR communication[tiab] OR psychosocial[tiab] OR distress[tiab] OR (pain[tiab] AND management[tiab]))) NOT (editorial[pt] OR comment[pt])	4536	Limited to 2000-2011
PsycInfo	(Cancer AND Care) AND Communication OR psychosocial OR distress OR (Pain AND management) from 2000 to 2011	1059	
CINAHL			
1	Cancer AND care	83460	
2	Communication OR psychosocial OR distress	234643	
3	Pain AND management	51896	
4	S2 OR S3	279667	
5	S1 AND S4	18212	
6	S1 AND S4 from 2000 to 2011	2251	
Cochrane			
1	Cancer AND care	4880	
2	Communication MeSH	1002	
3	(Cancer AND care) AND (Communication)	63	
4	Communication	4739	
5	(Cancer AND care) AND (Communication MeSH OR Communication tiab)	182	
6	Psychosocial OR distress	8672	
7	Pain MeSH	8539	
8	Pain	51077	
9	Management	29126	
10	(Cancer AND care) AND (Communication MeSH OR Communication tiab OR psychosocial OR distress OR ((pain MeSH OR pain tiab) AND management))	601	
11	(Cancer AND care) AND (Communication MeSH OR Communication tiab OR psychosocial OR distress OR ((pain MeSH OR pain tiab) AND management)) from 2000 to 2011	454	
DARE	Cancer AND care AND (communication OR psychosocial OR distress OR (pain AND management)) from 2000-2011	189/107/61/21	

Appendix B.3. Nursing home and care/planning/pain search strings

PubMed	("nursing homes"[mh] OR "nursing homes"[tiab] OR "nursing home"[tiab]) AND ("patient care planning"[mh] OR "patient care planning"[tiab] OR (pain[tiab] AND management[tiab])) NOT (editorial[pt] OR comment[pt])	653	Limited to 2000-2011
PsycINFO	(Nursing homes OR nursing home) AND patient care planning OR (pain and management) from 2000-2011	149	
CINAHL	(Nursing homes OR nursing home) AND patient care planning OR (pain and management) from 2000-2011	520	
Cochrane			
1	Nursing homes MeSH	855	
2	Patient care planning MeSH	408	
3	Nursing homes OR nursing home OR nursing homes MeSH	3070	
4	Patient care planning OR patient care planning MeSH	1680	
5	Pain and management	4507	
6	#3 AND (#4 OR #5)	172	
DARE	(Nursing homes OR nursing home) AND patient care planning OR (pain and management) from 2000-2011	1007/572/349/ 86	

Appendix C. Screening Forms

Abstract screening (include)

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Refid: 12, Skateboards: Are they really perilous? A retrospective study from a district hospital.
 Rethnam U, Yesupalan RS, Sinha A.

BACKGROUND: Skateboarding has been a popular sport among teenagers even with its attendant associated risks. The literature is packed with articles regarding the perils of skateboards. Is the skateboard as dangerous as has been portrayed?

METHODS: This was a retrospective study conducted over a 5 year period. All skateboard related injuries seen in the Orthopaedic unit were identified and data collated on patient demographics, mechanism & location of injury, annual incidence, type of injury, treatment needed including hospitalisation.

RESULTS: We encountered 50 patients with skateboard related injuries. Most patients were males and under the age of 15. The annual incidence has remained low at about 10. The upper limb was predominantly involved with most injuries being fractures. Most injuries occurred during summer. The commonest treatment modality was plaster immobilisation. The distal radius was the commonest bone to be fractured. There were no head & neck injuries, open fractures or injuries requiring surgical intervention.

CONCLUSION: Despite its negative image among the medical fraternity, the skateboard does not appear to be a dangerous sport with a low incidence and injuries encountered being not severe. Skateboarding should be restricted to supervised skateboard parks and skateboarders should wear protective gear. These measures would reduce the number of skateboarders injured in motor vehicle collisions, reduce the personal injuries among skateboarders, and reduce the number of pedestrians injured in collisions with skateboarders.

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KEY QUESTIONS

1. What is the evidence for the effectiveness of quality improvement interventions for key targets and settings relevant to palliative and end-of-life care?
 - a) Specific targets: What is the effectiveness for processes and outcomes for pain, communication, continuity, coordination, and transitions, and patient and family distress, in palliative and end-of-life populations?
 - b) Specific settings: What is the effectiveness for quality improvement interventions in any domain within hospice programs and in nursing homes?
2. What is the evidence for different quality improvement models for improving palliative and end-of-life care in the domains of pain and communication?
 - a) What is the evidence for different types of quality improvement interventions?
 - b) What is the evidence for different models in palliative care: structural, integrative, compared with consultative?

1. Does this apply to any of the key questions?

No (identify "exclusion criteria") Yes

3. Inclusion

- Systematic review (a literature review focused on a research question that tries to identify, appraise, select and synthesize all high quality research evidence relevant to that question.)
 - Other accepted study design
- Clear Response

Unclear: no abstract, or cannot determine eligibility from abstract alone

4. Comment

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EXCLUDE:

- If the study is evaluating an INTERVENTION that is clearly a THERAPY - such as art therapy or cognitive-behavioral therapy, or a support group - as a therapy in one group of patients compared to another, it is not a QI intervention but a therapeutic intervention. Some of these studies do get tricky, if it is trying to integrate more psychosocial support into health care, or if there seems to be a patient educator/reminder/ data collection component (such as distress screening), we may need to look at the full article to sort out if this is a QI or therapy intervention. If you're not sure, just mark as "unclear" - see below where I have tailored the types of QI interventions somewhat to this field - will need to continue to work on this
- Studies on SCREENING, PREVENTION, or CANCER CONTROL
- QUALITATIVE studies
- CHRONIC NON-CANCER PAIN
- FOCUS GROUPS and usually SURVEY, esp if there is no intervention
- Advanced directives/are planning intervention but not in a palliative care population

INCLUDE:

- Studies addressing lung, ovarian, hepatic or pancreatic cancers are generally addressing end-of-life or palliative care
- ADVANCE CARE planning addressing palliative and end-of-life care
- SYSTEMATIC REVIEWS: only include if they 1) address QI and 2) if they state "systematic review" in the abstract
- SYMPTOM SCREENING, SYSTEMATIC ASSESSMENT are QI
- "NON-PHARMACOLOGICAL" and "PSYCHOEDUCATIONAL" can be QI - should usually include, could be patient education, which is QI (include if it appears that there's a patient education component)
- QUANTITATIVE results
- Studies MUST have a control group to be an included intervention. A cohort's study in a population (same group of patients) is NOT included (e.g., measuring pain in a group of patients before and after a pain education intervention); the only pre-post studies are where the patients are different pre and post (such as an intervention in a hospital).

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2. Exclusion Criteria (choose ONE) Definitions

- Not a study about quality improvement (see definition)
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- Does not include patient- and family-centered outcomes in the results (see definition)
- Not an included study design (see definition)
- Other

Clear Response

4. Comment



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5. Comment

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[Clear Response](#)

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Framework: <https://systematic-review.net/Generic/getAttachment.php?id=1>

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- Studies MUST have a control group to be an included intervention. A cohort study in a population (same group of patients) is NOT included (e.g., measuring pain in a group of patients before and after a pain education intervention); the only pre-post studies are where the patients are different pre and post (such as an intervention in a hospital).

NOTES:

QI intervention must occur within or affect care within the healthcare system.
Educational interventions must be linked to the aspect of care.

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Appendix D. Excluded Articles

- A Nurse Delivered Management Programme for Depression in People With Cancer Reduces Depressive Symptoms Compared With Usual Care.. Evidence-Based Mental Health. 2009/02//: 12 (1). 9
Does not address a palliative care intervention or population
Not a study about quality improvement
- Abbo, E. D. and Volandes, A. E.. A forced choice: the value of requiring advance directives. J Clin Ethics. 2008: 19 (2). 127-40
Not an included study design
- Acton, G. J. and Kang, J.. Interventions to reduce the burden of caregiving for an adult with dementia: a meta-analysis. Res Nurs Health. 2001: 24 (5). 349-60
Does not address a palliative care intervention or population
- Adegbehingbe, O. O., Akinyoola, A. L., Ariyibi, A. L., and Oginni, L. M.. Direct integration of government funding and family support for musculoskeletal tumor care in a resource-constrained country. Oncology. 2009: 76 (6). 398-404
Does not address a palliative care intervention or population
Not a study about quality improvement
- Ahmed Nisar, Ahmedzai, S. a. m., Vora Vandana, Harrison Sophie, and Paz Silvia. Supportive care for patients with gastrointestinal cancer. Ahmed Nisar, Ahmedzai Sam, Vora Vandana, Harrison Sophie, Paz Silvia. Supportive care for patients with gastrointestinal cancer. Cochrane Database of Systematic Reviews: Reviews 2004 Issue 3 John Wiley & Sons, Ltd Chichester, UK DOI: 10.1002/14651858.CD003445.pub2. 2004: (3)
Not a study about quality improvement
Not an included study design
- Alexander, B. J., Plank, P., Carlson, M. B., Hanson, P., Picken, K., and Schwebke, K.. Methods of pain assessment in residents of long-term care facilities: a pilot study. J Am Med Dir Assoc. 2005: 6 (2). 137-43
Does not address a palliative care intervention or population
- Allen, R. S., Allen, J. Y., Hilgeman, M. M., and DeCoster, J.. End-of-life decision-making, decisional conflict, and enhanced information: race effects. J Am Geriatr Soc. 2008: 56 (10). 1904-9
Does not address a palliative care intervention or population
- Andersen, B. L., Farrar, W. B., Golden-Kreutz, D. M., Glaser, R., Emery, C. F., Crespino, T. R., Shapiro, C. L., and Carson, W. E. 3rd. Psychological, behavioral, and immune changes after a psychological intervention: a clinical trial. J Clin Oncol. 2004: 22 (17). 3570-80
Does not address a palliative care intervention or population
Not a study about quality improvement
- Badger, T., Segrin, C., Meek, P., Lopez, A. M., Bonham, E., and Sieger, A.. Telephone interpersonal counseling with women with breast cancer: symptom management and quality of life. Oncol Nurs Forum. 2005: 32 (2). 273-9
Does not address a palliative care intervention or population
Not a study about quality improvement
- Baider, L., Peretz, T., Hadani, P. E., and Koch, U.. Psychological intervention in cancer patients: a randomized study. General hospital psychiatry. 2001: 23 (5). 272-7
Does not address a palliative care intervention or population
Not a study about quality improvement
- Barrio-Cantalejo, I. M., Molina-Ruiz, A., Simon-Lorda, P., Camara-Medina, C., Toral Lopez, I., del Mar Rodriguez del Aguila, M., and Bailon-Gomez, R. M.. Advance directives and proxies' predictions about patients' treatment preferences. Nurs Ethics. 2009: 16 (1). 93-109
Does not address a palliative care intervention or population
- Best practices guide statewide QI project. Healthcare Benchmarks Qual Improv. 2004: 11 (3). 30-2
Not an included study design
- Boesen, E. H., Ross, L., Frederiksen, K., Thomsen, B. L., Dahlstrom, K., Schmidt, G., Naested, J., Krag, C., and Johansen, C.. Psychoeducational intervention for patients with cutaneous malignant melanoma: a replication study. J Clin Oncol. 2005: 23 (6). 1270-7
Does not address a palliative care intervention or population
- Bordeleau, L., Szalai, J. P., Ennis, M., Leszcz, M., Speca, M., Sela, R., Doll, R., Chochinov, H. M., Navarro, M., Arnold, A., Pritchard, K. I., Bezjak, A., Llewellyn-Thomas, H. A., Sawka, C. A., and Goodwin, P. J.. Quality of life in a randomized trial of group psychosocial support in metastatic breast cancer: overall effects of the intervention and an exploration of missing data. J Clin Oncol. 2003: 21 (10). 1944-51
Does not address a palliative care intervention or population
Not a study about quality improvement
- Boyes, A., Newell, S., Girgis, A., McElduff, P., and Sanson-Fisher, R.. Does routine assessment and real-time feedback improve cancer patients' psychosocial well-being?. Eur J Cancer Care (Engl). 2006: 15 (2). 163-71
Does not address a palliative care intervention or population
- Bramsen, I., van der Linden, M. H., Eskens, F. J., Bijvank, E. M., van Groeningen, C. J., Kaufman, H. J., and Aaronson, N. K.. Evaluation of a face-to-face psychosocial screening intervention for cancer

- patients: acceptance and effects on quality of life. *Patient Educ Couns*. 2008; 70 (1). 61-8
- Does not address a palliative care intervention or population**
- Brown, P., Clark, M. M., Atherton, P., Huschka, M., Sloan, J. A., Gamble, G., Girardi, J., Frost, M. H., Piderman, K., and Rummans, T. A.. Will improvement in quality of life (QOL) impact fatigue in patients receiving radiation therapy for advanced cancer?. *Am J Clin Oncol*. 2006; 29 (1). 52-8
- Does not address a palliative care intervention or population**
- Brown, R. F., Butow, P. N., Sharrock, M. A., Henman, M., Boyle, F., Goldstein, D., and Tattersall, M. H.. Education and role modelling for clinical decisions with female cancer patients. *Health Expect*. 2004; 7 (4). 303-16
- Does not address a palliative care intervention or population**
- Not a study about quality improvement**
- Bucher, J. A., Loscalzo, M., Zabora, J., Houts, P. S., Hooker, C., and BrintzenhofeSzoc, K.. Problem-solving cancer care education for patients and caregivers. *Cancer Pract*. 2001; 9 (2). 66-70
- Does not include patient- and family-centered outcomes in teh results**
- Not an included study design**
- Burgio, K. L., Goode, P. S., Urban, D. A., Umlauf, M. G., Locher, J. L., Bueschen, A., and Redden, D. T.. Preoperative biofeedback assisted behavioral training to decrease post-prostatectomy incontinence: a randomized, controlled trial. *J Urol*. 2006; 175 (1). 196-201; discussion 201
- Does not address a palliative care intervention or population**
- Butler, L. D., Koopman, C., Cordova, M. J., Garlan, R. W., DiMiceli, S., and Spiegel, D.. Psychological distress and pain significantly increase before death in metastatic breast cancer patients. *Psychosomatic medicine*. 2003; 65 (3). 416-26
- Not a study about quality improvement**
- Not an included study design**
- Casarett, D., Kapo, J., and Caplan, A.. Appropriate use of artificial nutrition and hydration--fundamental principles and recommendations. *N Engl J Med*. 2005; 353 (24). 2607-12
- Not an included study design**
- Cepeda, M. S., Chapman, C. R., Miranda, N., Sanchez, R., Rodriguez, C. H., Restrepo, A. E., Ferrer, L. M., Linares, R. A., and Carr, D. B.. Emotional disclosure through patient narrative may improve pain and well-being: results of a randomized controlled trial in patients with cancer pain. *J Pain Symptom Manage*. 2008; 35 (6). 623-31
- Not a study about quality improvement**
- Chan, C. L., Ho, R. T., Lee, P. W., Cheng, J. Y., Leung, P. P., Foo, W., Chow, L. W., Sham, J. S., and Spiegel, D.. A randomized controlled trial of psychosocial interventions using the psychophysiological framework for Chinese breast cancer patients. *Journal of psychosocial oncology*. 2006; 24 (1). 3-26
- Does not address a palliative care intervention or population**
- Not a study about quality improvement**
- Chan, R. and Webster, J.. End-of-life care pathways for improving outcomes in caring for the dying. *Cochrane Database Syst Rev*. 2010; (1). CD008006
- Does not include patient- and family-centered outcomes in teh results**
- Not a study about quality improvement**
- Chang, M. C., Chang, Y. C., Chiou, J. F., Tsou, T. S., and Lin, C. C.. Overcoming patient-related barriers to cancer pain management for home care patients. A pilot study. *Cancer Nurs*. 2002; 25 (6). 470-6
- Does not address a palliative care intervention or population**
- Chang, P. H., Lai, Y. H., Shun, S. C., Lin, L. Y., Chen, M. L., Yang, Y., Tsai, J. C., Huang, G. S., and Cheng, S. Y.. Effects of a Walking Intervention on Fatigue-Related Experiences of Hospitalized Acute Myelogenous Leukemia Patients Undergoing Chemotherapy: a Randomized Controlled Trial.. *Journal of Pain & Symptom Management*. 2008/05//: 35 (5). 524, 534
- Does not address a palliative care intervention or population**
- Not a study about quality improvement**
- Chung, S. K., Ahn, M. J., Yoo, J. Y., Choi, M., Hyang, N., Woo, S. R., Kim, S. S., Kim, S. A., and Oh, E. G.. Implementation of best practice for chemotherapy-induced nausea and vomiting in an acute care setting. *Int J Evid Based Healthc*. 2011; 9 (1). 32-8
- Does not address a palliative care intervention or population**
- Not an included study design**
- Clark, Paul G.. The Relationship Between Psychological Distress and Health Efficacy in People With Cancer in an Acute Inpatient Care Setting: an Intervention Study.. *Dissertation Abstracts International Section a: Humanities and Social Sciences*. 2008///: 69 (2-A)
- Not an included study design**
- Comley, A. L. and DeMeyer, E.. Assessing patient satisfaction with pain management through a continuous quality improvement effort. *J Pain Symptom Manage*. 2001; 21 (1). 27-40
- Does not address a palliative care intervention or population**
- Not a study about quality improvement**
- Cook, A. J.. Cognitive-behavioral pain management for elderly nursing home residents. *The journals of gerontology. Series B, Psychological sciences and social sciences*. 98; 53 (1). P51-9
- Does not address a palliative care intervention or population**
- Not a study about quality improvement**
- Cornbleet, M. A., Campbell, P., Murray, S., Stevenson, M., and Bond, S.. Patient-held records in cancer and palliative care: a randomized, prospective trialt. *Palliat Med*. 2002; 16 (3). 205-12
- Not a study about quality improvement**
- Coventry, P. A., Grande, G. E., Richards, D. A., and Todd, C. J.. Prediction of appropriate timing of palliative care for older adults with non-malignant life-

- threatening disease: a systematic review. *Age Ageing*. 2005; 34 (3). 218-27
- Not a study about quality improvement**
- Cranston Josephine, M., Crockett Alan, and Currow David. Oxygen therapy for dyspnoea in adults. Cranston Josephine M, Crockett Alan, Currow David. Oxygen therapy for dyspnoea in adults. *Cochrane Database of Systematic Reviews: Reviews 2008 Issue 3* John Wiley & Sons, Ltd Chichester, UK DOI: 10.1002/14651858.CD004769.pub2. 2008: (3).
- Not a study about quality improvement**
- Csaszar, N., Ganju, A., Mirnics, Z. S., and Varga, P. P.. Psychosocial issues in the cancer patient. *Spine (Phila Pa 1976)*. 2009; 34 (22 Suppl). S26-30
- Not a study about quality improvement**
- Currow, D. C., Abernethy, A. P., Shelby-James, T. M., and Phillips, P. A.. The impact of conducting a regional palliative care clinical study. *Palliative medicine*. 2006; 20 (8). 735-43
- Does not include patient- and family-centered outcomes in teh results**
- Not a study about quality improvement**
- Dale, J., Petrova, M., Munday, D., Koistinen-Harris, J., Lall, R., and Thomas, K.. A national facilitation project to improve primary palliative care: impact of the Gold Standards Framework on process and self-ratings of quality. *Qual Saf Health Care*. 2009; 18 (3). 174-80
- Does not include patient- and family-centered outcomes in teh results**
- Daly, B. J.. Organizational change and delivery of multidisciplinary palliative care. *Respir Care*. 2000; 45 (12). 1501-10; discussion 1510-2
- Does not include patient- and family-centered outcomes in teh results**
- Not an included study design**
- Danvers, L., Freshwater, D., Cheater, F., and Wilson, A.. Providing a Seamless Service for Children With Life-Limiting Illness: Experiences and Recommendations of Professional Staff at the Diana Princess of Wales Children's Community Service.. *Journal of Clinical Nursing*. 2003/05//: 12 (3). 351, 359
- Not a study about quality improvement**
- Not an included study design**
- de la Porte, P. W., Lok, D. J., van Veldhuisen, D. J., van Wijngaarden, J., Cornel, J. H., Zuithoff, N. P., Badings, E., and Hoes, A. W.. Added value of a physician-and-nurse-directed heart failure clinic: results from the Deventer-Alkmaar heart failure study. *Heart (British Cardiac Society)*. 2007; 93 (7). 819-25
- Does not address a palliative care intervention or population**
- Del Sindaco, D., Pulignano, G., Minardi, G., Apostoli, A., Guerrieri, L., Rotoloni, M., Petri, G., Fabrizi, L., Caroselli, A., Venusti, R., Chiantera, A., Giulivi, A., Giovannini, E., and Leggio, F.. Two-year outcome of a prospective, controlled study of a disease management programme for elderly patients with heart failure. *Journal of cardiovascular medicine (Hagerstown, Md.)*. 2007; 8 (5). 324-9
- Does not address a palliative care intervention or population**
- Detering, K. M., Hancock, A. D., Reade, M. C., and Silvester, W.. The impact of advance care planning on end of life care in elderly patients: randomised controlled trial. *BMJ*. 2010; 340. c1345
- Does not address a palliative care intervention or population**
- Dewey, A. N. N.. Summaries of Nursing Rare-Related Systematic Reviews From the Cochrane Library: Psychosocial Interventions for Reducing Fatigue During Cancer Treatment in Adults.. *International Journal of Evidence-Based Healthcare*. 2010/06//: 8 (2). 106, 107
- Not a study about quality improvement**
- Not an included study design**
- Doctor-Patient Communication Is Critical to How Parents View the Quality of End-of-Life Care for Children With Cancer.. *Ahrq Research Activities*. 2006/04//: (308). 12
- Not an included study design**
- Dodd, M. J., Cho, M. H., Miaskowski, C., Painter, P. L., Paul, S. M., Cooper, B. A., Duda, J., Krasnoff, J., and Bank, K. A.. A randomized controlled trial of home-based exercise for cancer-related fatigue in women during and after chemotherapy with or without radiation therapy. *Cancer Nurs*. 2010; 33 (4). 245-57
- Does not address a palliative care intervention or population**
- Downe-Wamboldt, B. L., Butler, L. J., Melanson, P. M., Coulter, L. A., Singleton, J. F., Keefe, J. M., and Bell, D. G.. The effects and expense of augmenting usual cancer clinic care with telephone problem-solving counseling. *Cancer Nurs*. 2007; 30 (6). 441-53
- Does not address a palliative care intervention or population**
- Dragone, M. A., Bush, P. J., Jones, J. K., Bearison, D. J., and Kamani, S.. Development and evaluation of an interactive CD-ROM for children with leukemia and their families. *Patient Educ Couns*. 2002; 46 (4). 297-307
- Does not address a palliative care intervention or population**
- Dufault, M. A. and Willey-Lessne, C.J *Nurs Care Qual*. 19-33
- Does not address a palliative care intervention or population**
- published in 1999
- Duggleby, W. D., Degner, L., Williams, A., Wright, K., Cooper, D., Popkin, D., and Holtslander, L.. Living with hope: initial evaluation of a psychosocial hope intervention for older palliative home care patients. *J Pain Symptom Manage*. 2007; 33 (3). 247-57
- Not a study about quality improvement**
- Dulko, D.. Implementation of National Pain Guidelines by Acute Care Oncology Nurse Practitioners Using an Audit and Feedback Strategy.. 2007/// 156 p
- Not an included study design**
- Edmonds, P., Hart, S., Wei, G. a. o., Vivat, B., Burman, R., Silber, E., and Higginson, I. J.. Palliative care for people severely affected by multiple sclerosis: evaluation of a novel palliative care service. *Mult Scler*. 2010; 16 (5). 627-36

- Does not address a palliative care intervention or population**
 Edwards, A. G., Hailey, S., Maxwell, M., Fairchild, A., Pituskin, E., Rose, B., Ghosh, S., Dutka, J., Driga, A., Tachynski, P., Borschneck, J., Gagnon, L., Macdonnell, S., Middleton, J., Thavone, K., Carstairs, S., Brent, D., and Severin, D.. Psychological interventions for women with metastatic breast cancer: The rapid access palliative radiotherapy program: blueprint for initiation of a one-stop multidisciplinary bone metastases clinic. *Cochrane Database Syst Rev: Support Care Cancer*. 2004; 17 (2. 2). CD004253, 163-70
- Does not address a palliative care intervention or population**
 El-Jawahri, A., Podgurski, L. M., Eichler, A. F., Plotkin, S. R., Temel, J. S., Mitchell, S. L., Chang, Y., Barry, M. J., and Volandes, A. E.. Use of video to facilitate end-of-life discussions with patients with cancer: a randomized controlled trial. *J Clin Oncol*. 2010; 28 (2). 305-10
- Does not address a palliative care intervention or population**
 Ell, K., Xie, B., Quon, B., Quinn, D. I., Dwight-Johnson, M., and Lee, P. J.. Randomized controlled trial of collaborative care management of depression among low-income patients with cancer. *J Clin Oncol*. 2008; 26 (27). 4488-96
- Does not address a palliative care intervention or population**
 Erridge, S. C., Gaze, M. N., Price, A., Kelly, C. G., Kerr, G. R., Cull, A., MacDougall, R. H., Howard, G. C., Cowie, V. J., and Gregor, A.. Symptom control and quality of life in people with lung cancer: a randomised trial of two palliative radiotherapy fractionation schedules. *Clinical oncology (Royal College of Radiologists (Great Britain))*. 2005; 17 (1). 61-7
- Not a study about quality improvement**
 Fann, J. R., Fan, M. Y., and Unutzer, J.. Improving primary care for older adults with cancer and depression. *J Gen Intern Med*. 2009; 24 Suppl 2. S417-24
- Does not address a palliative care intervention or population**
 Finding peace through hospice care. *Johns Hopkins Med Lett Health After* 50. 2006; 18 (9). 3
- Not a study about quality improvement**
 Fisher, Susan E.. A Pain Assessment and Communication Training Intervention to Improve Detection of Behavioral Pain Cues and Pain Management Communication Among Direct-Care Staff in the Nursing Home.. *Dissertation Abstracts International: Section B: the Sciences and Engineering*. 2007///: 67 (10-B)
- Does not address a palliative care intervention or population**
Not an included study design
 Forchuk, C.. A Nurse-Delivered Intervention Was Effective for Depression in Patients With Cancer.. *Evidence-Based Nursing*. 2009///: 12 (1). 17
- Does not address a palliative care intervention or population**
Not an included study design
 Ford Pitorak, E., Beckham Armour, M., and Sivec, H. D.. Project safe conduct integrates palliative goals into comprehensive cancer care. *J Palliat Med*. 2003; 6 (4). 645-55
- Not an included study design**
 Franck, L. S., Allen, A., and Oulton, K.. Making pain assessment more accessible to children and parents: can greater involvement improve the quality of care?. *The Clinical journal of pain*. 2007; 23 (4). 331-8
- Does not address a palliative care intervention or population**
 Friedrichsdorf, S. J.. Pain management in children with advanced cancer and during end-of-life care. *Pediatr Hematol Oncol*. 2010; 27 (4). 257-61
- Not a study about quality improvement**
Not an included study design
 Geller, M. A., Downs, L. S., Judson, P. L., Ghebre, R., Argenta, P. A., Carson, L. F., Jonson, A. L., Godfrey, K., Vogel, R. I., and Petzel, S. V.. Learning about ovarian cancer at the time of diagnosis: video versus usual care. *Gynecol Oncol*. 2010; 119 (2). 370-5
- Does not address a palliative care intervention or population**
 Giesler, R. B., Given, B., Given, C. W., Rawl, S., Monahan, P., Burns, D., Azzouz, F., Reuille, K. M., Weinrich, S., Koch, M., and Champion, V.. Improving the quality of life of patients with prostate carcinoma: a randomized trial testing the efficacy of a nurse-driven intervention. *Cancer*. 2005; 104 (4). 752-62
- Does not address a palliative care intervention or population**
 Gillick, M. R.. Adapting advance medical planning for the nursing home. *J Palliat Med*. 2004; 7 (2). 357-61
- Not a study about quality improvement**
 Girgis, A., Breen, S., Stacey, F., and Lecathelinais, C.. Impact of two supportive care interventions on anxiety, depression, quality of life, and unmet needs in patients with nonlocalized breast and colorectal cancers. *J Clin Oncol*. 2009; 27 (36). 6180-90
- Does not address a palliative care intervention or population**
 Given, B., Given, C. W., Sikorskii, A., Jeon, S., Sherwood, P., and Rahbar, M.. The Impact of Providing Symptom Management Assistance on Caregiver Reaction: Results of a Randomized Trial.. *Journal of Pain & Symptom Management*. 2006/11//: 32 (5). 433, 443
- Does not address a palliative care intervention or population**
Not a study about quality improvement
 Given, C., Given, B., Rahbar, M., Jeon, S., McCorkle, R., Cimprich, B., Galecki, A., Kozachik, S., Devoss, D., Brady, A., Fisher-Malloy, M. J., Courtney, K., and Bowie, E.. Does a symptom management intervention affect depression among cancer patients: results from a clinical trial. *Psychooncology*. 2004; 13 (11). 818-30
- Does not address a palliative care intervention or population**
Not a study about quality improvement
 Gotay, C. C., Moinpour, C. M., Unger, J. M., Jiang, C. S., Coleman, D., Martino, S., Parker, B. J., Bearden, J. D.,

- Dakhil, S., Gross, H. M., Lippman, S., and Albain, K. S.. Impact of a peer-delivered telephone intervention for women experiencing a breast cancer recurrence. *J Clin Oncol*. 2007; 25 (15). 2093-9
Does not address a palliative care intervention or population
- Grassi, L., Rossi, E., Caruso, R., Nanni, M. G., Pedrazzi, S., Sofritti, S., and Sabato, S.. Educational intervention in cancer outpatient clinics on routine screening for emotional distress: an observational study. *Psychooncology*. 2011
Does not address a palliative care intervention or population
- Graves, K. D., Carter, C. L., Anderson, E. S., and Winett, R. A.. Quality of life pilot intervention for breast cancer patients: use of social cognitive theory. *Palliat Support Care*. 2003; 1 (2). 121-34
Does not address a palliative care intervention or population
- Grimaldo, D. A., Wiener-Kronish, J. P., Jurson, T., Shaughnessy, T. E., Curtis, J. R., and Liu, L. L.. A randomized, controlled trial of advanced care planning discussions during preoperative evaluations. *Anesthesiology*. 2001; 95 (1). 43-50; discussion 5A
Does not address a palliative care intervention or population
- Gysels, M. and Higginson, I. J.. Interactive technologies and videotapes for patient education in cancer care: systematic review and meta-analysis of randomised trials. *Support Care Cancer*. 2007; 15 (1). 7-20
Does not address a palliative care intervention or population
- Gysels, M., Richardson, A., and Higginson, I. J.. Communication training for health professionals who care for patients with cancer: a systematic review of effectiveness. *Support Care Cancer*. 2004; 12 (10). 692-700
Not a study about quality improvement
Not an included study design
- Haber, J.. Review: Existing Evidence Does Not Support a Survival Benefit for Women With Metastatic Breast Cancer Who Participate in Group Psychological Interventions Compared With Usual Care.. *Evidence-Based Nursing*. 2004/10//: 7 (4). 111
Not a study about quality improvement
Not an included study design
- Hall, S., Chochinov, H., Harding, R., Murray, S., Richardson, A., and Higginson, I. J.. A Phase II randomised controlled trial assessing the feasibility, acceptability and potential effectiveness of dignity therapy for older people in care homes: study protocol. *BMC Geriatr*. 2009; 9. 9
Does not include patient- and family-centered outcomes in teh results
Not a study about quality improvement
- Hall, S., Edmonds, P., Harding, R., Chochinov, H., and Higginson, I. J.. Assessing the feasibility, acceptability and potential effectiveness of Dignity Therapy for people with advanced cancer referred to a hospital-based palliative care team: Study protocol. *BMC Palliat Care*. 2009; 8. 5
Does not include patient- and family-centered outcomes in teh results
Not an included study design
- Hanser, S. B., Bauer-Wu, S., Kubicek, L., Healey, M., Manola, J., Hernandez, M., and Bunnell, C.. Effects of a music therapy intervention on quality of life and distress in women with metastatic breast cancer. *J Soc Integr Oncol*. 2006; 4 (3). 116-24
Not a study about quality improvement
- Harding, R. and Higginson, I. J.. What is the best way to help caregivers in cancer and palliative care? A systematic literature review of interventions and their effectiveness. *Palliat Med*. 2003; 17 (1). 63-74
Other
- Harris, D., Hillier, L. M., and Keat, N.. Sustainable practice improvements: impact of the Comprehensive Advanced Palliative Care Education (CAPCE) program. *J Palliat Care*. 2007; 23 (4). 262-72
Does not include patient- and family-centered outcomes in teh results
Not an included study design
- Hermiz, O., Comino, E., Marks, G., Daffurn, K., Wilson, S., and Harris, M.. Randomised controlled trial of home based care of patients with chronic obstructive pulmonary disease. *BMJ (Clinical research ed.)*. 2002; 325 (7370). 938
Does not address a palliative care intervention or population
- Hersch, J., Juraskova, I., Price, M., and Mullan, B.. Psychosocial interventions and quality of life in gynaecological cancer patients: a systematic review. *Psychooncology*. 2009; 18 (8). 795-810
Does not address a palliative care intervention or population
Not a study about quality improvement
- Higginson, I. J., Hart, S., Burman, R., Silber, E., Saleem, T., and Edmonds, P.. Randomised controlled trial of a new palliative care service: Compliance, recruitment and completeness of follow-up. *BMC Palliat Care*. 2008; 7. 7
Does not include patient- and family-centered outcomes in teh results
- Higginson, I. J., McCrone, P., Hart, S. R., Burman, R., Silber, E., and Edmonds, P. M.. Is short-term palliative care cost-effective in multiple sclerosis? A randomized phase II trial. *J Pain Symptom Manage*. 2009; 38 (6). 816-26
Does not address a palliative care intervention or population
- Hilarius, D. L., Kloeg, P. H., Gundy, C. M., and Aaronson, N. K.. Use of health-related quality-of-life assessments in daily clinical oncology nursing practice: a community hospital-based intervention study. *Cancer*. 2008; 113 (3). 628-37
Does not address a palliative care intervention or population
- Hill, T. E., Ginsburg, M., Citko, J., and Cadogan, M.. Improving End-of-Life Care in Nursing Facilities: the Community State Partnership to Improve End-of-Life Care -California.. *Journal of Palliative Medicine*. 2005/04//: 8 (2). 300, 312

- Does not include patient- and family-centered outcomes in the results**
Not a study about quality improvement
Hinds, P. S.. Fostering coping by adolescents with newly diagnosed cancer. *Semin Oncol Nurs*. 2000: 16 (4). 317-27; discussion 328-36
Does not address a palliative care intervention or population
Hoffmann, W., Munzinger, H., Horstkotte, E., and Greiser, E.. A population-based evaluation of an intervention to improve advanced stage cancer pain management. *J Pain Symptom Manage*. 2004: 28 (4). 342-50
Does not include patient- and family-centered outcomes in the results
Not a study about quality improvement
Hogan, D. B. and Fox, R. A.. A prospective controlled trial of a geriatric consultation team in an acute-care hospital. *Age and ageing*. 90: 19 (2). 107-13
Does not address a palliative care intervention or population
Holley, S. and Borger, D.. Energy for living with cancer: preliminary findings of a cancer rehabilitation group intervention study. *Oncol Nurs Forum*. 2001: 28 (9). 1393-6
Not an included study design
Houts, A. C., Lipinski, D., Olsen, J. P., Baldwin, S., and Hasan, M.. Use of the Patient Care Monitor to screen for depression in adult cancer patients interviewed with the structured clinical interview for DSM-IV. *Psychooncology*. 2010: 19 (4). 399-407
Not a study about quality improvement
Hudson, P., Thomas, T., Quinn, K., Cockayne, M., and Braithwaite, M.. Teaching family carers about home-based palliative care: final results from a group education program. *J Pain Symptom Manage*. 2009: 38 (2). 299-308
Not an included study design
Hulsman, R. L., Ros, W. J., Winnubst, J. A., and Bensing, J. M.. The effectiveness of a computer-assisted instruction programme on communication skills of medical specialists in oncology. *Med Educ*. 2002: 36 (2). 125-34
Does not address a palliative care intervention or population
Husebo, B. S., Ballard, C., and Aarsland, D.. Pain treatment of agitation in patients with dementia: a systematic review. *Int J Geriatr Psychiatry*. 2011
Does not address a palliative care intervention or population
Not a study about quality improvement
Ibfelt, E., Rottmann, N., Kjaer, T., Hoybye, M. T., Ross, L., Frederiksen, K., Johansen, C., and Dalton, S. O.. No change in health behavior, BMI or self-rated health after a psychosocial cancer rehabilitation: Results of a randomized trial. *Acta Oncol*. 2011: 50 (2). 289-98
Does not address a palliative care intervention or population
Idell, C. S., Grant, M., and Kirk, C.. Alignment of pain reassessment practices and National Comprehensive Cancer Network guidelines. *Oncol Nurs Forum*. 2007: 34 (3). 661-71
- Does not address a palliative care intervention or population**
Does not include patient- and family-centered outcomes in the results
Jaarsma, T., Halfens, R., Tan, F., Abu-Saad, H. H., Dracup, K., and Diederiks, J.. Self-care and quality of life in patients with advanced heart failure: the effect of a supportive educational intervention. *Heart & lung : the journal of critical care*. 2000: 29 (5). 319-30
Does not address a palliative care intervention or population
Jack, B., Boland, A., Dickson, R., Stevenson, J., and McLeod, C.. Best supportive care in lung cancer trials is inadequately described: a systematic review. *Eur J Cancer Care (Engl)*. 2010: 19 (3). 293-301
Not a study about quality improvement
Johansson, B., Brandberg, Y., Hellbom, M., Persson, C., Petersson, L. M., Berglund, G., and Glimelius, B.. Health-related quality of life and distress in cancer patients: results from a large randomised study. *Br J Cancer*. 2008: 99 (12). 1975-83
Does not address a palliative care intervention or population
Johansson, B., Holmberg, L., Berglund, G., Brandberg, Y., Hellbom, M., Persson, C., Glimelius, B., and Sjoden, P. O.. Reduced utilisation of specialist care among elderly cancer patients: a randomised study of a primary healthcare intervention. *Eur J Cancer*. 2001: 37 (17). 2161-8
Does not address a palliative care intervention or population
Not a study about quality improvement
Jones, K. R., Fink, R., Vojir, C., Pepper, G., Hutt, E., Clark, L., Scott, J., Martinez, R., Vincent, D., and Mellis, B. K.. Translation research in long-term care: improving pain management in nursing homes. *Worldviews Evid Based Nurs*. 2004: 1 Suppl 1. S13-20
Does not address a palliative care intervention or population
Not a study about quality improvement
Jones, K.. Effective pain management: lessons from a nursing home research study. *J Healthc Qual*. 2006: 28 (1). 41-7
Does not address a palliative care intervention or population
Not an included study design
Jones, L., Harrington, J., Barlow, C. A., Tookman, A., Drake, R., Barnes, K., and King, M.. Advance care planning in advanced cancer: Can it be achieved? An exploratory randomized patient preference trial of a care planning discussion. *Palliat Support Care*. 2011: 9 (1). 3-13
Does not address a palliative care intervention or population
Does not include patient- and family-centered outcomes in the results
Kaasalainen Sharon, Brazil Kevin, Coker Esther, Ploeg Jenny, Martin-Misener Ruth, Donald Faith, Dicenso Alba, Hadjistavropoulos Thomas, Dolovich Lisa, Papaioannou Alexandra, Emili Anna, and Burns, T. I. M.. An Action-Based Approach to Improving Pain

- Management in Long-Term Care.. Canadian Journal on Aging. 2010/12//: 29 (4). 503, 517
Does not address a palliative care intervention or population
Not a study about quality improvement
- Kane, R. L. and Mach, J. R. Jr.. Improving Health Care for Assisted Living Residents.. Gerontologist. 2007/12/02/: 47. 100, 109
Not an included study design
Not an included study design
- Kang, K. A., Shim, J. S., Jeon, D. G., and Koh, M. S.. [The effects of logotherapy on meaning in life and quality of life of late adolescents with terminal cancer]. J Korean Acad Nurs. 2009: 39 (6). 759-68
Not a study about quality improvement
- Katz, M. R., Irish, J. C., and Devins, G. M.. Development and pilot testing of a psychoeducational intervention for oral cancer patients. Psychooncology. 2004: 13 (9). 642-53
Not an included study design
Not an included study design
- Kaufner, M., Murphy, P., Barker, K., and Mosenthal, A.. Family satisfaction following the death of a loved one in an inner city MICU. Am J Hosp Palliat Care. 2008: 25 (4). 318-25
Not an included study design
- Kirchhoff, K. T., Hammes, B. J., Kehl, K. A., Briggs, L. A., and Brown, R. L.. Effect of a disease-specific planning intervention on surrogate understanding of patient goals for future medical treatment. J Am Geriatr Soc. 2010: 58 (7). 1233-40
Does not address a palliative care intervention or population
Not a study about quality improvement
- Kissane, D. W., McKenzie, M., Bloch, S., Moskowitz, C., McKenzie, D. P., and O'Neill, I.. Family focused grief therapy: a randomized, controlled trial in palliative care and bereavement. Am J Psychiatry. 2006: 163 (7). 1208-18
Not a study about quality improvement
- Klosky, J. L., Garces-Webb, D. M., Buscemi, J., Schum, L., Tyc, V. L., and Merchant, T. E.. Examination of an interactive-educational intervention in improving parent and child distress outcomes associated with pediatric radiation therapy procedures. Children's Health Care. 2007: 36 (4). 323-34
Does not address a palliative care intervention or population
- Klosky, J. L., Tyc, V. L., Srivastava, D. K., Tong, X., Kronenberg, M., Booker, Z. J., de Armendi, A. J., and Merchant, T. E.. Brief report: Evaluation of an interactive intervention designed to reduce pediatric distress during radiation therapy procedures. J Pediatr Psychol. 2004: 29 (8). 621-6
Does not address a palliative care intervention or population
Not a study about quality improvement
- Kolarik, R. C., Arnold, R. M., Fischer, G. S., and Hanusa, B. H.. Advance care planning. J Gen Intern Med. 2002: 17 (8). 618-24
Does not address a palliative care intervention or population
- Not a study about quality improvement**
- Kost Christiane, Labouvie Hildegard, Kosfelder Joachim, Häußel, Ulrich, Herrmann-Lingen Christoph, Kusch Michael. Veränderung Der Psychischen Belastung Von Krebspatienten Im Rahmen Einer Strukturierten Psychoonkologischen Versorgung. Psychotherapie Psychosomatik Medizinische Psychologie 2009/12//; 59(12):432, 439.
Does not address a palliative care intervention or population
Not an included study design
- Kravitz, R. L., Tancredi, D. J., Street, R. L. Jr, Kalauokalani, D., Grennan, T., Wun, T., Slee, C., Evans Dean, D., Lewis, L., Saito, N., and Franks, P.. Cancer Health Empowerment for Living without Pain (Ca-HELP): study design and rationale for a tailored education and coaching intervention to enhance care of cancer-related pain. BMC Cancer. 2009: 9. 319
Does not include patient- and family-centered outcomes in teh results
- Kressel, L. M. and Chapman, G. B.. The default effect in end-of-life medical treatment preferences. Med Decis Making. 2007: 27 (3). 299-310
Does not address a palliative care intervention or population
- Kristeller, J. L., Rhodes, M., Cripe, L. D., and Sheets, V.. Oncologist Assisted Spiritual Intervention Study (OASIS): patient acceptability and initial evidence of effects. Int J Psychiatry Med. 2005: 35 (4). 329-47
Does not address a palliative care intervention or population
Not a study about quality improvement
- Kroenke, K., Theobald, D., Wu, J., Norton, K., Morrison, G., Carpenter, J., and Tu, W.. Effect of telecare management on pain and depression in patients with cancer: a randomized trial. JAMA. 2010: 304 (2). 163-71
Does not address a palliative care intervention or population
- Kurtz, M. E., Kurtz, J. C., Given, C. W., and Given, B.. A randomized, controlled trial of a patient/caregiver symptom control intervention: effects on depressive symptomatology of caregivers of cancer patients. J Pain Symptom Manage. 2005: 30 (2). 112-22
Does not address a palliative care intervention or population
Not a study about quality improvement
- Kutner, J. S., Bryant, L. L., Beaty, B. L., and Fairclough, D. L.. Symptom Distress and Quality-of-Life Assessment at the End of Life: the Role of Proxy Response.. Journal of Pain & Symptom Management. 2006/10//: 32 (4). 300, 310
Not a study about quality improvement
- Kutner, J. S., Metcalfe, T., Vu, K. O., Fink, R., Nelson-Marten, P., Armstrong, J. D., and Seligman, P. A.. Implementation of an ad hoc hospital-based palliative care consult service. J Pain Symptom Manage. 2004: 28 (5). 526-8
Does not include patient- and family-centered outcomes in teh results
Not a study about quality improvement

- Kutzen, H.. Advanced HIV care planning: how to begin "the" conversation. *HIV Clin*. 2001: 13 (4). 12-5
Not a study about quality improvement
Not an included study design
- Lai, Y. H., Guo, S. L., Keefe, F. J., Tsai, S. L., Chien, C. C., Sung, Y. C., and Chen, M. L.. Effects of brief pain education on hospitalized cancer patients with moderate to severe pain. *Support Care Cancer*. 2004: 12 (9). 645-52
Does not address a palliative care intervention or population
- LaMantia, M. A., Scheunemann, L. P., Viera, A. J., Busby-Whitehead, J., and Hanson, L. C.. Interventions to improve transitional care between nursing homes and hospitals: a systematic review. *J Am Geriatr Soc*. 2010: 58 (4). 777-82
Does not address a palliative care intervention or population
Does not include patient- and family-centered outcomes in teh results
- Lecouturier, J., Crack, L., Mannix, K., Hall, R. H., and Bond, S.. Evaluation of a patient-held record for patients with cancer. *Eur J Cancer Care (Engl)*. 2002: 11 (2). 114-21
Does not address a palliative care intervention or population
Not a study about quality improvement
- Lee, M. and Booth, S.. The pace program and end-of-life care. Providence ElderPlace in Porland, Ore., develops unique approach for enrolled participants. *Health Prog*. 2008: 89 (3). 62-6
Not a study about quality improvement
Not an included study design
- Leonard, W.. Summary of Task Forces I, II, and III, and report of Task Force IV Education & Implementation. *Clin Cardiol*. 2000: 23 (2 Suppl 2). II26-8
Not a study about quality improvement
Not an included study design
- Leone, A. F., Standoli, F., and Hirth, V.. Implementing a pain management program in a long-term care facility using a quality improvement approach. *J Am Med Dir Assoc*. 2009: 10 (1). 67-73
Not a study about quality improvement
Not an included study design
- Lin, C. C., Chou, P. L., Wu, S. L., Chang, Y. C., and Lai, Y. L.. Long-term effectiveness of a patient and family pain education program on overcoming barriers to management of cancer pain. *Pain*. 2006: 122 (3). 271-81
Not a study about quality improvement
Not an included study design
- Lincoln, A.. Improving the conditions of confinement. End-of-life care in prison. *Pharos Alpha Omega Alpha Honor Med Soc*. 2008: 71 (4). 18-25
Not a study about quality improvement
Not an included study design
- Liu, L. N., Li, C. Y., Tang, S. T., Huang, C. S., and Chiou, A. F.. Role of continuing supportive cares in increasing social support and reducing perceived uncertainty among women with newly diagnosed breast cancer in Taiwan. *Cancer Nurs*. 2006: 29 (4). 273-82
Does not address a palliative care intervention or population
Not a study about quality improvement
- Lokk, J.. ["Bamse" helps patients with Parkinson disease during the palliative phase. Alleviation of symptoms and respect for both the patient and the relatives are crucial]. *Lakartidningen*. 2007: 104 (3). 124-7
Not an included study design
- London, M. R., McSkimming, S., Drew, N., Quinn, C., and Carney, B.. Evaluation of a Comprehensive, Adaptable, LifeAffirming, Longitudinal (CALL) palliative care project. *J Palliat Med*. 2005: 8 (6). 1214-25
Not an included study design
- Long, C., Morgan, B. M., Alonzo, T. R., Mitchell, K. M., Bonnell, D. K., and Beardsley, M. E.. Improving Pain Management in Long-Term Care: the Campaign Against Pain.. *Journal of Hospice & Palliative Nursing*. 2010/05//2010 May-Jun: 12 (3). 148, 155
Does not address a palliative care intervention or population
- Lorenz, K. A.. Progress in quality-of-care research and hope for supportive cancer care. *J Clin Oncol*. 2008: 26 (23). 3821-3
Not a study about quality improvement
Not an included study design
- Lynn, J., Nolan, K., Kabcenell, A., Weissman, D., Milne, C., and Berwick, D. M.. Reforming care for persons near the end of life: the promise of quality improvement. *Ann Intern Med*. 2002: 137 (2). 117-22
Not an included study design
- Lynn, J., Schall, M. W., Milne, C., Nolan, K. M., and Kabcenell, A.. Quality improvements in end of life care: insights from two collaboratives. *Jt Comm J Qual Improv*. 2000: 26 (5). 254-67
Not an included study design
- Macvean, M. L., White, V. M., Pratt, S., Grogan, S., and Sanson-Fisher, R.. Reducing the unmet needs of patients with colorectal cancer: a feasibility study of The Pathfinder Volunteer Program. *Support Care Cancer*. 2007: 15 (3). 293-9
Does not address a palliative care intervention or population
- Maex, E. and De Valck, C.. Taking care of the terminally ill cancer patient: the communication compass--a model for communication in oncology. *Ann Oncol*. 2004: 15 Suppl 4: iv215-9
Not a study about quality improvement
Not an included study design
- Maguire, P. and Pitceathly, C.. Improving the psychological care of cancer patients and their relatives. The role of specialist nurses. *J Psychosom Res*. 2003: 55 (5). 469-74
Does not include patient- and family-centered outcomes in teh results
Not a study about quality improvement
- Mallick, I., Sharma, S. C., Behera, D., Ghoshal, S., and Oinam, A. S.. Optimization of dose and fractionation of endobronchial brachytherapy with or without external radiation in the palliative management of non-small cell lung cancer: a prospective randomized

- study. *Journal of cancer research and therapeutics*. 2006; 2 (3). 119-25
- Not a study about quality improvement**
- Manne, S. L., Rubin, S., Edelson, M., Rosenblum, N., Bergman, C., Hernandez, E., Carlson, J., Rocereto, T., and Winkel, G.. Coping and communication-enhancing intervention versus supportive counseling for women diagnosed with gynecological cancers. *J Consult Clin Psychol*. 2007; 75 (4). 615-28
- Does not address a palliative care intervention or population**
- Not a study about quality improvement**
- Manne, S. L., Winkel, G., Rubin, S., Edelson, M., Rosenblum, N., Bergman, C., Hernandez, E., Carlson, J., and Rocereto, T.. Mediators of a coping and communication-enhancing intervention and a supportive counseling intervention among women diagnosed with gynecological cancers. *J Consult Clin Psychol*. 2008; 76 (6). 1034-45
- Does not address a palliative care intervention or population**
- Martin, W. E., Miller, S. C., Welch, L. C., and Burrill, J.. Improving access to hospice: the Physician Feedback and Reminders to Improve Access to Hospice (PFRIAH) study. *Med Health R I*. 2007; 90 (12). 388-90
- Does not include patient- and family-centered outcomes in teh results**
- Not an included study design**
- Martín-Carrasco M, Martín MF, Valero CP et al. Effectiveness of a psychoeducational intervention program in the reduction of caregiver burden in Alzheimer's disease patients' caregivers. *International Journal of Geriatric Psychiatry* 2009; 24(5):489-99.
- Does not address a palliative care intervention or population**
- Martin-Carrasco, M., Martin, M. F., Valero, C. P., Millan, P. R., Garcia, C. I., Montalban, S. R., Vazquez, A. L. G., Piris, S. P., and Vilanova, M. B.. Effectiveness of a psychoeducation intervention program in the reduction of caregiver burden in Alzheimer's Disease patients' caregivers. *International Journal of Geriatric Psychiatry*. 2009; 24 (5). 489-99
- Does not address a palliative care intervention or population**
- Not a study about quality improvement**
- McCann, L., Maguire, R., Miller, M., and Kearney, N.. Patients' perceptions and experiences of using a mobile phone-based advanced symptom management system (ASyMS) to monitor and manage chemotherapy related toxicity. *Eur J Cancer Care (Engl)*. 2009; 18 (2). 156-64
- Does not address a palliative care intervention or population**
- Not a study about quality improvement**
- McClive, Kimberly Pender. The Effects of an Advanced Illness Care Coordination Program on Patient Satisfaction With Health Care Through Improved Patient-Provider Communication.. Dissertation Abstracts International: Section B: the Sciences and Engineering. 2004///: 65 (5-B).
- Not a study about quality improvement**
- Not an included study design**
- McCorkle, R., Dowd, M., Ercolano, E., Schulman-Green, D., Williams, A. L., Siefert, M. L., Steiner, J., and Schwartz, P.. Effects of a nursing intervention on quality of life outcomes in post-surgical women with gynecological cancers. *Psychooncology*. 2009; 18 (1). 62-70
- Does not address a palliative care intervention or population**
- McGarvey, E. L., Leon-Verdin, M., Baum, L. D., Bloomfield, K., Brenin, D. R., Koopman, C., Acton, S., Clark, B., and Parker, B. E. Jr. An evaluation of a computer-imaging program to prepare women for chemotherapy-related alopecia. *Psychooncology*. 2010; 19 (7). 756-66
- Not a study about quality improvement**
- McLachlan, S. A., Allenby, A., Matthews, J., Wirth, A., Kissane, D., Bishop, M., Beresford, J., and Zalberg, J.. Randomized trial of coordinated psychosocial interventions based on patient self-assessments versus standard care to improve the psychosocial functioning of patients with cancer. *J Clin Oncol*. 2001; 19 (21). 4117-25
- Does not address a palliative care intervention or population**
- McQuay Henry, J., Collins Sally, Carroll Dawn, and Moore, R. Andrew. Radiotherapy for the palliation of painful bone metastases. *McQuay Henry J, Collins Sally, Carroll Dawn, Moore R Andrew. Radiotherapy for the palliation of painful bone metastases. Cochrane Database of Systematic Reviews: Reviews 1999 Issue 3 John Wiley & Sons, Ltd Chichester, UK DOI: 10.1002/14651858.CD001793. 99: (3).*
- Despite collecting data from 20 trials no two trials were sufficiently alike to allow pooling
- Not a study about quality improvement**
- Meyers, F. J. and Linder, J.. Simultaneous care: disease treatment and palliative care throughout illness. *J Clin Oncol*. 2003; 21 (7). 1412-5
- Does not include patient- and family-centered outcomes in teh results**
- Not an included study design**
- Miller, D. K., Chibnall, J. T., Videen, S. D., and Duckro, P. N.. Supportive-affective group experience for persons with life-threatening illness: reducing spiritual, psychological, and death-related distress in dying patients. *J Palliat Med*. 2005; 8 (2). 333-43
- Not a study about quality improvement**
- Mishra, S., Bhatnagar, S., Singh, M., Gupta, D., Jain, R., Chauhan, H., and Goyal, G. N.. Pediatric cancer pain management at a regional cancer center: implementation of WHO Analgesic Ladder. *Middle East journal of anesthesiology*. 2009; 20 (2). 239-44
- Not a study about quality improvement**
- Not an included study design**
- Mitchell, C. G.. Mood Disturbance in Oncology Patients With Metastatic Bone Pain in a Self-Care Nursing Intervention.. 2003///. 97 p
- Not a study about quality improvement**
- Not an included study design**
- Monroe, Todd Bryant. Pain Management in Nursing Home Residents With Cancer and Dementia With and

- Without Hospice Services.. Dissertation Abstracts International: Section B: the Sciences and Engineering. 2010///: 71 (5-B)
- Not a study about quality improvement**
Not an included study design
- Morrison, R. S., Chichin, E., Carter, J., Burack, O., Lantz, M., and Meier, D. E.. The effect of a social work intervention to enhance advance care planning documentation in the nursing home. *J Am Geriatr Soc*. 2005: 53 (2). 290-4
- Does not address a palliative care intervention or population**
- Morrison, R. S., Chichin, E., Carter, J., Burack, O., Lantz, M., and Meier, D. E.. The effect of a social work intervention to enhance advance care planning documentation in the nursing home. *Journal of the American Geriatrics Society*. 2005: 53 (2). 290-4
- Does not address a palliative care intervention or population**
- Morrison, R. S., Meier, D. E., Fischberg, D., Moore, C., Degenholtz, H., Litke, A., Maroney-Galin, C., and Siu, A. L.. Improving the management of pain in hospitalized adults. *Arch Intern Med*. 2006: 166 (9). 1033-9
- Does not address a palliative care intervention or population**
- Mularski, R. A., Curtis, J. R., Billings, J. A., Burt, R., Byock, I., Fuhrman, C., Mosenthal, A. C., Medina, J., Ray, D. E., Rubinfeld, G. D., Schneiderman, L. J., Treece, P. D., Truog, R. D., and Levy, M. M.. Proposed quality measures for palliative care in the critically ill: a consensus from the Robert Wood Johnson Foundation Critical Care Workgroup. *Crit Care Med*. 2006: 34 (11 Suppl). S404-11
- Does not include patient- and family-centered outcomes in teh results**
Not an included study design
- Murray, M. A., Stacey, D., Wilson, K. G., and O'Connor, A. M.. Skills training to support patients considering place of end-of-life care: a randomized control trial. *Journal of palliative care*. 2010: 26 (2). 112-21
- Does not include patient- and family-centered outcomes in teh results**
Not a study about quality improvement
- Naylor, M. D., Brooten, D., Campbell, R., Jacobsen, B. S., Mezey, M. D., Pauly, M. V., and Schwartz, J. S.. Comprehensive discharge planning and home follow-up of hospitalized elders: a randomized clinical trial. *JAMA : the journal of the American Medical Association*. 99: 281 (7). 613-20
- Not a study about quality improvement**
- Nightingale, E., Kristjanson, L. J., and Toye, C.. Evaluating the Navigate Care Model: clinical palliative care pathways based on anticipated care outcomes. *Int J Palliat Nurs*. 2003: 9 (7). 298-307; discussion 307
- Not a study about quality improvement**
Not an included study design
- Northouse, L. L., Walker, J., Schafenacker, A., Mood, D., Mellon, S., Galvin, E., Harden, J., and Freeman-Gibb, L.. A family-based program of care for women with recurrent breast cancer and their family members. *Oncol Nurs Forum*. 2002: 29 (10). 1411-9
- Not an included study design**
- Norton, S. A., Hogan, L. A., Holloway, R. G., Temkin-Greener, H., Buckley, M. J., and Quill, T. E.. Proactive palliative care in the medical intensive care unit: effects on length of stay for selected high-risk patients. *Crit Care Med*. 2007: 35 (6). 1530-5
- Does not include patient- and family-centered outcomes in teh results**
Not a study about quality improvement
- Nural, N., Hintistan, S., Gursoy, A. A., and Duman, E. N.. The effect of home healthcare on quality of life in patients diagnosed with gastrointestinal cancer. *Gastroenterol Nurs*. 2009: 32 (4). 273-83
- Does not address a palliative care intervention or population**
- O'Brien, M. A., Whelan, T. J., Villasis-Keever, M., Gafni, A., Charles, C., Roberts, R., Schiff, S., and Cai, W.. Are cancer-related decision aids effective? A systematic review and meta-analysis. *J Clin Oncol*. 2009: 27 (6). 974-85
- Does not address a palliative care intervention or population**
Not a study about quality improvement
- Oeseburg, B., Wynia, K., Middel, B., and Reijneveld, S. A.. Effects of case management for frail older people or those with chronic illness: a systematic review. *Nurs Res*. 2009: 58 (3). 201-10
- Does not address a palliative care intervention or population**
- Oh, P. J. and Kim, S. H.. Effects of a brief psychosocial intervention in patients with cancer receiving adjuvant therapy. *Oncol Nurs Forum*. 2010: 37 (2). E98-104
- Does not address a palliative care intervention or population**
- Oldenmenger, W. H., Sillevs Smitt, P. A., van Dooren, S., Stoter, G., and van der Rijt, C. C.. A systematic review on barriers hindering adequate cancer pain management and interventions to reduce them: a critical appraisal (Structured abstract). *European Journal of Cancer*. 2009: 45 (8). 1370-1380
- Not an included study design**
poor quality systematic review
- Oleske, D. M. and Hauck, W. W.. A population-based evaluation of the impact of interventions for improving care to cancer patients in the home setting. *Home Health Care Services Quarterly*. 88: 9 (1). 45
- Does not address a palliative care intervention or population**
Not a study about quality improvement
- Oliver, D. P., Bickel-Swenson, D., Zweig, S., Kruse, R., and Mehr, D.. Experience with implementation of a quality improvement project for the care of nursing home residents. *J Nurs Care Qual*. 2009: 24 (2). 100-4
- Does not address a palliative care intervention or population**
Not an included study design
- O'Mahony, S., McHenry, J., Blank, A. E., Snow, D., Eti Karakas, S., Santoro, G., Selwyn, P., and Kvetan, V.. Preliminary report of the integration of a palliative care team into an intensive care unit. *Palliat Med*. 2010: 24 (2). 154-65
- Not a study about quality improvement**

- Pearlman, R. A., Starks, H., Cain, K. C., and Cole, W. G.. Improvements in advance care planning in the Veterans Affairs System: results of a multifaceted intervention. *Arch Intern Med*. 2005: 165 (6). 667-74
Does not address a palliative care intervention or population
- Perry, E., Swartz, J., Brown, S., Smith, D., Kelly, G., and Swartz, R.. Peer mentoring: a culturally sensitive approach to end-of-life planning for long-term dialysis patients. *Am J Kidney Dis*. 2005: 46 (1). 111-9
Not a study about quality improvement
- Posthauer, M. E.. The role of nutritional therapy in palliative care. *Adv Skin Wound Care*. 2007: 20 (1). 32-3
Not a study about quality improvement
- Powis, J., Etchells, E., Martin, D. K., MacRae, S. K., and Singer, P. A.. Can a "good death" be made better?: A preliminary evaluation of a patient-centred quality improvement strategy for severely ill in-patients. *BMC Palliat Care*. 2004: 3 (1). 2
Not an included study design
- Pruyn, J. F., Heule-Dieleman, H. A., Knegt, P. P., Mosterd, F. R., van Hest, M. A., Sinnige, H. A., Pruy, A. T., and de Boer, M. F.. On the enhancement of efficiency in care for cancer patients in outpatient clinics: an instrument to accelerate psychosocial screening and referral. *Patient Educ Couns*. 2004: 53 (2). 135-40
Does not address a palliative care intervention or population
- Puntillo, K. A. and Mcadam, J. L.. Communication Between Physicians and Nurses as a Target for Improving End-of-Life Care in the Intensive Care Unit: Challenges and Opportunities for Moving Forward.. *Critical Care Medicine*. 2006/11/02/: 34 (11). S332, 40
Does not include patient- and family-centered outcomes in teh results
Not an included study design
- Quill, T. E.. Dying and decision making--evolution of end-of-life options. *N Engl J Med*. 2004: 350 (20). 2029-32
Does not include patient- and family-centered outcomes in teh results
Not an included study design
- Rao, A. V., Hsieh, F., Feussner, J. R., and Cohen, H. J.. Geriatric evaluation and management units in the care of the frail elderly cancer patient. *J Gerontol A Biol Sci Med Sci*. 2005: 60 (6). 798-803
Does not address a palliative care intervention or population
Not a study about quality improvement
- Rask, M. T., Jensen, M. L., Andersen, J., and Zachariae, R.. Effects of an intervention aimed at improving nurse-patient communication in an oncology outpatient clinic. *Cancer Nurs*. 2009: 32 (1). E1-11
Does not address a palliative care intervention or population
- Ravasco, P., Monteiro Grillo, I., and Camilo, M.. Cancer wasting and quality of life react to early individualized nutritional counselling!. *Clinical Nutrition*. 2007: 26 (1). 7-15
Not a study about quality improvement
- Razavi, D., Merckaert, I., Marchal, S., Libert, Y., Conradt, S., Boniver, J., Etienne, A. M., Fontaine, O., Janne, P., Klastersky, J., Reynaert, C., Scalliet, P., Slachmuylder, J. L., and Delvaux, N.. How to optimize physicians' communication skills in cancer care: results of a randomized study assessing the usefulness of posttraining consolidation workshops. *J Clin Oncol*. 2003: 21 (16). 3141-9
Does not address a palliative care intervention or population
Does not include patient- and family-centered outcomes in teh results
- Resnick, B., Quinn, C., and Baxter, S.. Testing the feasibility of implementation of clinical practice guidelines in long-term care facilities. *J Am Med Dir Assoc*. 2004: 5 (1). 1-8
Does not address a palliative care intervention or population
Not a study about quality improvement
- Resultan, E.. Improving the quality of care for terminally ill children. *Healthplan*. 2003: 44 (2). 38-41
Not an included study design
- Rodin, G., Lloyd, N., Katz, M., Green, E., Mackay, J. A., and Wong, R. K.. The treatment of depression in cancer patients: a systematic review. *Support Care Cancer*. 2007: 15 (2). 123-36
Does not address a palliative care intervention or population
Not a study about quality improvement
- Rodin, G., Zimmermann, C., Mayer, C., Howell, D., Katz, M., Sussman, J., Mackay, J. A., and Brouwers, M.. Clinician-patient communication: evidence-based recommendations to guide practice in cancer. *Curr Oncol*. 2009: 16 (6). 42-9
Not a study about quality improvement
Not an included study design
- Ross, L., Thomsen, B. L., Karlsen, R. V., Boesen, E. H., and Johansen, C.. A randomized psychosocial intervention study on the effect of home visits on the well-being of Danish colorectal cancer patients--the INCA Project. *Psychooncology*. 2005: 14 (11). 949-61
Does not address a palliative care intervention or population
- Rottmann, N., Dalton, S. O., Bidstrup, P. E., Wurtzen, H., Hoybye, M. T., Ross, L., Christensen, J., Frederiksen, K., Hansen, D. G., and Johansen, C.. No improvement in distress and quality of life following psychosocial cancer rehabilitation. A randomised trial. *Psychooncology*. 2011
Does not address a palliative care intervention or population
- Russell, P. B., Aveyard, S. C., and Oxenham, D. R.. An assessment of methods used to evaluate the adequacy of cancer pain management. *J Pain Symptom Manage*. 2006: 32 (6). 581-8
Not an included study design
- Sahler, O. J., Fairclough, D. L., Phipps, S., Mulhern, R. K., Dolgin, M. J., Noll, R. B., Katz, E. R., Varni, J. W., Copeland, D. R., and Butler, R. W.. Using problem-solving skills training to reduce negative affectivity in mothers of children with newly diagnosed cancer:

- report of a multisite randomized trial. *J Consult Clin Psychol.* 2005; 73 (2). 272-83
Does not address a palliative care intervention or population
Not a study about quality improvement
- Sandgren, A. K. and McCaul, K. D.. Long-term telephone therapy outcomes for breast cancer patients. *Psychooncology.* 2007; 16 (1). 38-47
Does not address a palliative care intervention or population
- Sarna, L.. Effectiveness of structured nursing assessment of symptom distress in advanced lung cancer. *Oncol Nurs Forum.* 98: 25 (6). 1041-8
Not an included study design
pre-2000
- Schenker, Y.. Nurse-Led Palliative Care Improves Quality of Life and Mood of Cancer Patients.. *Journal of Clinical Outcomes Management.* 2009/10//: 16 (10). 451, 452
Not a study about quality improvement
Not an included study design
- Schneider, N. M.. Managing congestive heart failure using home telehealth. *Home Healthc Nurse.* 2004; 22 (10). 719-22
Not an included study design
- Schofield, P., Carey, M., Love, A., Nehill, C., and Wein, S.. "Would you like to talk about your future treatment options"? Discussing the transition from curative cancer treatment to palliative care. *Palliat Med.* 2006; 20 (4). 397-406
Not a study about quality improvement
- Schou, I., Ekeberg, O., Karesen, R., and Sorensen, E.. Psychosocial intervention as a component of routine breast cancer care-who participates and does it help?. *Psychooncology.* 2008; 17 (7). 716-20
Does not address a palliative care intervention or population
- Schwartz, C. E., Wheeler, H. B., Hammes, B., Basque, N., Edmunds, J., Reed, G., Ma, Y., Li, L., Tabloski, P., and Yanko, J.. Early intervention in planning end-of-life care with ambulatory geriatric patients: results of a pilot trial. *Arch Intern Med.* 2002; 162 (14). 1611-8
Does not address a palliative care intervention or population
Does not include patient- and family-centered outcomes in teh results
- Scott, J. T., Entwistle, V. A., Sowden, A. J., and Watt, I.. Communicating with children and adolescents about their cancer. *Cochrane Database Syst Rev.* 2001: (1). CD002969
Does not address a palliative care intervention or population
- Scott, J. T., Harmsen, M., Pricor, M. J., Sowden, A. J., and Watt, I.. Interventions for improving communication with children and adolescents about their cancer. *Cochrane Database Syst Rev.* 2003: (3). CD002969
Does not address a palliative care intervention or population
Not a study about quality improvement
- Simple, C. J. and McGowan, B.. Need for appropriate written information for patients, with particular reference to head and neck cancer. *J Clin Nurs.* 2002; 11 (5). 585-93
Not an included study design
- Shalowitz, D. I., Garrett-Mayer, E., and Wendler, D.. The accuracy of surrogate decision makers: a systematic review. *Arch Intern Med.* 2006; 166 (5). 493-7
Not a study about quality improvement
- Shelby-James, T. M., Currow, D. C., Phillips, P. A., Williams, H., and Abernethy, A. P.. Promoting patient centred palliative care through case conferencing. *Aust Fam Physician.* 2007; 36 (11). 961-4
Does not include patient- and family-centered outcomes in teh results
- Shell, J. A.. Evidence-based practice for symptom management in adults with cancer: sexual dysfunction. *Oncol Nurs Forum.* 2002; 29 (1). 53-66; quiz 67-9
Does not address a palliative care intervention or population
Not a study about quality improvement
- Shelton, W., Moore, C. D., Socaris, S., Gao, J., and Dowling, J.. The effect of a family support intervention on family satisfaction, length-of-stay, and cost of care in the intensive care unit. *Crit Care Med.* 2010; 38 (5). 1315-20
Does not address a palliative care intervention or population
- Shirahama, M., Tanba, K., Yoshida, K., Nagata, M., and Ikeda, Y.. [End of life care for patients without malignancy]. *Nippon Naika Gakkai Zasshi.* 2007; 96 (8). 1741-8
Not an included study design
- Shojania, K. G., Duncan, B. W., McDonald, K. M., Wachter, R. M., and Markowitz, A. J.. Making health care safer: a critical analysis of patient safety practices. *Evid Rep Technol Assess (Summ).* 2001: (43). i-x, 1-668
Does not address a palliative care intervention or population
Not an included study design
- Silliman, R. A., McGarvey, S. T., Raymond, P. M., and Fretwell, M. D.. The Senior Care Study. Does inpatient interdisciplinary geriatric assessment help the family caregivers of acutely ill older patients?. *Journal of the American Geriatrics Society.* 90: 38 (4). 461-6
Does not address a palliative care intervention or population
Not a study about quality improvement
- Sitzia, J., Cotterell, P., and Richardson, A.. Interprofessional collaboration with service users in the development of cancer services: the Cancer Partnership Project. *J Interprof Care.* 2006; 20 (1). 60-74
Does not include patient- and family-centered outcomes in teh results
Not an included study design
- Smith, M. C., Kemp, J., Hemphill, L., and Vojir, C. P.. Outcomes of therapeutic massage for hospitalized cancer patients. *Journal of nursing scholarship : an official publication of Sigma Theta Tau International Honor Society of Nursing / Sigma Theta Tau.* 2002; 34 (3). 257-62

- Not a study about quality improvement**
Smith, M. Y., DuHamel, K. N., Egert, J., and Winkel, G.. Impact of a brief intervention on patient communication and barriers to pain management: results from a randomized controlled trial. *Patient Educ Couns*. 2010; 81 (1). 79-86
Does not address a palliative care intervention or population
- Song, M. K., Donovan, H. S., Piraino, B. M., Choi, J., Bernardini, J., Verosky, D., and Ward, S. E.. Effects of an intervention to improve communication about end-of-life care among African Americans with chronic kidney disease. *Appl Nurs Res*. 2010; 23 (2). 65-72
Does not address a palliative care intervention or population
- Song, M. K.. Effects of end-of-life discussions on patients' affective outcomes. *Nurs Outlook*. 2004; 52 (3). 118-25
Does not address a palliative care intervention or population
- Sr Marie Ruegg, Schirm, V., and Boyce, B.. Making "caring connections". A new program enhances end-of-life care in a retirement community in Ohio. *Health Prog*. 2004; 85 (1). 34-7
Not an included study design
- Steel, A., Underwood, C., Notley, C., and Blunt, M.. The impact of offering a relatives' clinic on the satisfaction of the next-of-kin of critical care patients-a prospective time-interrupted trial. *Intensive Crit Care Nurs*. 2008; 24 (2). 122-9
Does not address a palliative care intervention or population
- Stehl, M. L., Kazak, A. E., Alderfer, M. A., Rodriguez, A., Hwang, W. T., Pai, A. L. H., Boeving, A., and Reilly, A.. Conducting a randomized clinical trial of an psychological intervention for parents/caregivers of children with cancer shortly after diagnosis. *Journal of Pediatric Psychology*. 2009; 34 (8). 803-16
Does not address a palliative care intervention or population
- Steinhauser, K. E., Alexander, S. C., Byock, I. R., George, L. K., Olsen, M. K., and Tulskey, J. A.. Do preparation and life completion discussions improve functioning and quality of life in seriously ill patients? Pilot randomized control trial. *J Palliat Med*. 2008; 11 (9). 1234-40
Not a study about quality improvement
- Stenberg, U., Ruland, C. M., and Miaskowski, C.. Review of the literature on the effects of caring for a patient with cancer. *Psychooncology*. 2010; 19 (10). 1013-25
Not a study about quality improvement
- Stevenson, K. M., Dahl, J. L., Berry, P. H., Beck, S. L., and Griffie, J.. Institutionalizing effective pain management practices: practice change programs to improve the quality of pain management in small health care organizations. *J Pain Symptom Manage*. 2006; 31 (3). 248-61
Does not address a palliative care intervention or population
Not an included study design
- Strong, V., Waters, R., Hibberd, C., Murray, G., Wall, L., Walker, J., McHugh, G., Walker, A., and Sharpe, M.. Management of depression for people with cancer (SMaRT oncology 1): a randomised trial. *Lancet*. 2008; 372 (9632). 40-8
Does not address a palliative care intervention or population
- Sudore, R. S. and Mayer, G.. End-of-life decisions made easier. *Provider*. 2006; 32 (3). 51-4
Not a study about quality improvement
- Swafford, K. L., Miller, L. L., Tsai, P. F., Herr, K. A., and Ersek, M.. Improving the process of pain care in nursing homes: a literature synthesis. *J Am Geriatr Soc*. 2009; 57 (6). 1080-7
Does not address a palliative care intervention or population
- Taplin, S. H. and Rodgers, A. B.. Toward improving the quality of cancer care: addressing the interfaces of primary and oncology-related subspecialty care. *J Natl Cancer Inst Monogr*. 2010; 2010 (40). 3-10
Does not include patient- and family-centered outcomes in teh results
Not an included study design
- Taplin, S. H., Clauser, S., Rodgers, A. B., Breslau, E., and Rayson, D.. Interfaces across the cancer continuum offer opportunities to improve the process of care. *J Natl Cancer Inst Monogr*. 2010; 2010 (40). 104-10
Does not include patient- and family-centered outcomes in teh results
Not an included study design
- Tattersall, M. H., Gattellari, M., Voigt, K., and Butow, P. N.. When the treatment goal is not cure: are patients informed adequately?. *Support Care Cancer*. 2002; 10 (4). 314-21
Not a study about quality improvement
Not an included study design
- Thomas, K. and Noble, B.. Improving the delivery of palliative care in general practice: an evaluation of the first phase of the Gold Standards Framework. *Palliat Med*. 2007; 21 (1). 49-53
Does not include patient- and family-centered outcomes in teh results
- Treecce, P. D., Engelberg, R. A., Crowley, L., Chan, J. D., Rubenfeld, G. D., Steinberg, K. P., and Curtis, J. R.. Evaluation of a standardized order form for the withdrawal of life support in the intensive care unit. *Crit Care Med*. 2004; 32 (5). 1141-8
Does not include patient- and family-centered outcomes in teh results
Not a study about quality improvement
- Tulipani, C., Morelli, F., Spedicato, M. R., Maiello, E., Todarello, O., and Porcelli, P.. Alexithymia and cancer pain: the effect of psychological intervention. *Psychother Psychosom*. 2010; 79 (3). 156-63
Does not address a palliative care intervention or population
- Twaddle, M. L., Sheehan, M., and Romer, A. L.. Filling the gaps in service for patients who need supportive care. *J Palliat Med*. 2003; 6 (1). 117-27
Not a study about quality improvement
- Uitterhoeve, R. J., Vernooy, M., Litjens, M., Potting, K., Bensing, J., De Mulder, P., and van Achterberg, T..

- Psychosocial interventions for patients with advanced cancer a systematic review of the literature. *Br J Cancer*. 2004; 91 (6). 1050-62
- Not a study about quality improvement**
- Valgus, J., Jarr, S., Schwartz, R., Rice, M., and Bernard, S. A.. Pharmacist-led, interdisciplinary model for delivery of supportive care in the ambulatory cancer clinic setting. *J Oncol Pract*. 2010; 6 (6). e1-4
- Not an included study design**
- Vallerand, A. H., Riley-Doucet, C., Hasenau, S. M., and Templin, T.. Improving cancer pain management by homecare nurses. *Oncology nursing forum*. 2004; 31 (4). 809-16
- Does not include patient- and family-centered outcomes in teh results**
- Does not include patient- and family-centered outcomes in teh results**
- Vandenberg, E. V., Tvrdik, A., and Keller, B. K.. Use of the quality improvement process in assessing end-of-life care in the nursing home. *J Am Med Dir Assoc*. 2005; 6 (5). 334-9
- Not a study about quality improvement**
- Not an included study design**
- Velikova, G., Brown, J. M., Smith, A. B., and Selby, P. J.. Computer-based quality of life questionnaires may contribute to doctor-patient interactions in oncology. *Br J Cancer*. 2002; 86 (1). 51-9
- Not an included study design**
- Velji, K.. Effect of an Individualized Symptom Education Program on the Symptom Distress of Women Receiving Radiation Therapy for Gynecological Cancers.. 2006///. 167 p
- Not an included study design**
- Vodermaier, A., Linden, W., and Siu, C.. Screening for emotional distress in cancer patients: a systematic review of assessment instruments. *J Natl Cancer Inst*. 2009; 101 (21). 1464-88
- Not a study about quality improvement**
- Vogel, L.. Tools help patients tackle tough choices for end-of-life care. *CMAJ*. 2011; 183 (1). E43-4
- Not a study about quality improvement**
- Volker, D. L., Kahn, D., and Penticuff, J. H.. Patient control and end-of-life care part II: the advanced practice nurse perspective. *Oncol Nurs Forum*. 2004; 31 (5). 954-60
- Not an included study design**
- Walker, J., Cassidy, J., and Sharpe, M.. The third symptom management research trial in oncology (SMaRT oncology-3): a randomised trial to determine the efficacy of adding a complex intervention for major depressive disorder (depression care for people with lung cancer) to usual care, compared to usual care alone in patients with lung cancer. *Trials*. 2009; 10 . 92
- Does not include patient- and family-centered outcomes in teh results**
- Not an included study design**
- Walker, M. S. and Podbilewicz-Schuller, Y.. Video preparation for breast cancer treatment planning: results of a randomized clinical trial. *Psycho-oncology*. 2005; 14 (5). 408-20
- Does not address a palliative care intervention or population**
- Wessels, H., de Graeff, A., Groenewegen, G., Wynia, K., de Heus, M., Vos, J. B., Tjia, P., Kruitwagen, C. L., Teunissen, S. C., and Voest, E. E.. Impact of integration of clinical and outpatient units on cancer patient satisfaction. *Int J Qual Health Care*. 2010; 22 (5). 358-64
- Does not address a palliative care intervention or population**
- Wilkinson, O. M., Duncan-Skingle, F., Pryor, J. A., and Hodson, M. E.. A feasibility study of home telemedicine for patients with cystic fibrosis awaiting transplantation. *Journal of telemedicine and telecare*. 2008; 14 (4). 182-5
- Does not address a palliative care intervention or population**
- Williams, J. G., Cheung, W. Y., Chetwynd, N., Cohen, D. R., El-Sharkawi, S., Finlay, I., Lervy, B., Longo, M., and Malinowszky, K.. Pragmatic randomised trial to evaluate the use of patient held records for the continuing care of patients with cancer. *Qual Health Care*. 2001; 10 (3). 159-65
- Does not address a palliative care intervention or population**
- Wilson, S., Wahler, R., Brown, J., Doloresco, F., and Monte, S. V.. Impact of Pharmacist Intervention on Clinical Outcomes in the Palliative Care Setting. *Am J Hosp Palliat Care*. 2010
- Not an included study design**
- Wong, F. K., Chow, S. K., and Chan, T. M.. Evaluation of a nurse-led disease management programme for chronic kidney disease: a randomized controlled trial. *International journal of nursing studies*. 2010; 47 (3). 268-78
- Does not address a palliative care intervention or population**
- Not a study about quality improvement**
- Woo, J., Lo, R. S. K., Lee, J., Cheng, J. O., Lum, C. M., Hui, E., Wong, F., Yeung, F., and Or, K. K.. Improving End-of-Life Care for Non-Cancer Patients in Hospitals: Description of a Continuous Quality Improvement Initiative.. *Journal of Nursing & Healthcare of Chronic Illnesses*. 2009/09//: 1 (3). 237, 244
- Does not include patient- and family-centered outcomes in teh results**
- Not an included study design**
- Yates, P., Edwards, H., Nash, R., Aranda, S., Purdie, D., Najman, J., Skerman, H., and Walsh, A.. A randomized controlled trial of a nurse-administered educational intervention for improving cancer pain management in ambulatory settings. *Patient education and counseling*. 2004; 53 (2). 227-37
- Does not address a palliative care intervention or population**
- Young, J., Harrison, J., Solomon, M., Butow, P., Dennis, R., Robson, D., and Auld, S.. Development and feasibility assessment of telephone-delivered supportive care to improve outcomes for patients with colorectal cancer: pilot study of the CONNECT

intervention. Support Care Cancer. 2010; 18 (4). 461-70

Does not address a palliative care intervention or population

Not a study about quality improvement

Zernikow, B., Hasan, C., Hechler, T., Huebner, B., Gordon, D., and Michel, E.. Stop the Pain! A Nation-Wide

Quality Improvement Programme in Paediatric Oncology Pain Control.. European Journal of Pain. 2008/10//: 12 (7). 819, 833

Does not address a palliative care intervention or population

Appendix E. Evidence Tables

Evidence Table 1. Population and study characteristics of all included studies

Author, year	Population	Disease	Setting (s)	Single vs. Multicenter	Study Design	Description of intervention	Description of intervention
Ahrens et al, 2003 ¹	Adult	Mixed	ICU	Single center	Controlled trial	Specific defined roles and EOL communication by physician & clinical nurse specialists	Whenever a certain ICU attending was on service, a clinical nurse specialist trained palliative care saw patients/families daily were involved to ensure optimal communication.
Aiken, 2006 ²	Adult, 69	COPD, CHF	Home care	Multicenter, 7 organizations	RCT, 6 month	Case management and coordinated care	Home-based case management provided by registered nurse case-managers, in coordination with patients' existing medical care. Program foci included disease and symptom management, patient self-management and knowledge of illness-related resources, preparation for end-of life, physical and mental functioning, utilization of medical services
Aranda, 2006 ³	Adult; Median age 55 (control) and 57 (intervention)	Breast cancer	Ambulatory	Multicenter/4 centers	RCT	Nurse-delivered intervention to address needs	Assessment and coaching on self-care, stress reduction, communication strategies, summary provided to physician; telephone follow-up at 1 week
Aubin, 2006 ⁴	Adult, mean age 65	Mixed cancer population	Home care	Multi-center, four community based primary care centers providing home care services	Controlled trial, follow up collected at baseline, 2 weeks, and 4 weeks	One-time educational intervention	Included a pain diary, didactic material including a 15 minute video tape and a booklet, and pain monitoring recommendations

Evidence Table 1. Population and study characteristics of all included studies (continued)

Author, year	Population	Disease	Setting (s)	Single vs. Multicenter	Study Design	Description of intervention	Description of intervention
Badger, 2009 ⁵	Adults, no age reported	Mixed illnesses	Nursing home	Multicenter, 49 homes	Controlled trial, before-after	Gold Standards Framework in Care Homes	Includes identifying individuals' needs, assess and treat their needs and symptoms, Improve coordination within institution and outside, reducing avoidable hospital admissions.
Bailey, 2005 ⁶	Adult, 68	Mixed illnesses	Hospital	Single, 135 beds	Controlled trial, before-after	Inpatient Comfort Care Program	Intervention included staff education and support to identify patients who were actively dying and implement care plans guided by a comfort care order set template for the last days or hours of life
Bakitas, 2009 ⁷	Adult, 65	Cancer mixed	Ambulatory	Multicenter, 2 centers	RCT, 3 months or until patient die	Multi-component, psycho educational intervention	The intervention (telephone calls), based on the chronic care model, used a case management, educational approach to encourage patient activation, self-management, and empowerment
Blumenthal, 2006 ⁸	Adult	Lung disease	Home	Multicenter-2	RCT, 12 weeks	Telephone - based coping skills training	Lung transplant candidates - 12 weeks - supportive counseling and training in cognitive-behavioral coping skills, by social worker or psychologist; per protocol; education on stress and health
Bookbinder, 2005 ⁹	Adult, >70	Mixed illnesses	Hospital,	Single, 5 units	Controlled trial(before-after), 4 months	Palliative Care for Advanced Disease pathway	Includes a care path, a daily flow sheet, and a physician order sheet with standard orders for symptom control
Borneman, 2008 ¹⁰	Adult, mean age 64	Lung cancer	Ambulatory	Single	Controlled trial, follow up at 1 month and 3 months post intervention	4-part educational intervention delivered by a nurse to address pain and fatigue.	Information pertaining to pain assessment, pain management, fatigue assessment, and fatigue management was provided follow by bi-weekly phone contact

Evidence Table 1. Population and study characteristics of all included studies (continued)

Author, year	Population	Disease	Setting (s)	Single vs. Multicenter	Study Design	Description of intervention	Description of intervention
Borneman, 2010 ¹¹	Adult; mean age 59.7 years	Mixed cancer population	Ambulatory	Single	Controlled trial, outcome measures for both control and intervention collected at baseline, 1 month, and 3 months post intervention	Intervention group received four educational sessions on pain/fatigue assessment and management. Written material on self-management of fatigue and pain also distributed.	NCCN Supportive Care Guidelines, "Passport to Comfort"
Brumley, 2003 ¹²	Adult, 74	COPD, CHF, cancer	Home care	Multicenter, 3 Kaiser Permanente	Controlled trial, 60 days	Home-Based Palliative Care	The care team (patient and family plus a physician, nurse, and social worker) is responsible for coordinating and managing care and providing assessment, evaluation, planning, care delivery, follow-up, monitoring and continuous reassessment of care
Brumley, 2007 ¹³	Adult, 72	COPD, CHF, cancer	Home care	Multicenter, 2 HMO	RCT, 120 days	Home-Based Palliative Care	The care team (patient and family plus a physician, nurse, and social worker) is responsible for coordinating, managing care and providing assessment, evaluation, planning, care delivery, follow-up, monitoring and continuous reassessment of care
Burns, 2003 ¹⁴	Adult mean age 61years	Mixed illnesses	ICU	Multicenter (7 ICU)	Non-randomized controlled trial	Intervention to facilitate deliberative decision making.	Social workers interviewed families of patients at high risk for decisional conflict and provided feedback to clinicians to facilitate decision making

Evidence Table 1. Population and study characteristics of all included studies (continued)

Author, year	Population	Disease	Setting (s)	Single vs. Multicenter	Study Design	Description of intervention	Description of intervention
Campbell, 2003 ¹⁵	Adult	Mixed	ICU	Single center	Pre-post study	Proactive case-finding approach to palliative care consultation	Trigger criteria were used for medical ICU patients with global cerebral ischemia after CPR or with >3 system organ failure. Proactive palliative care was incorporated in the care of patients who met criteria.
Carlson, 2010 ¹⁶	Adult; 63.5 (control), 61.5 (Full) and 62.7 (triage)	Mixed cancer	Ambulatory	Single Center	RCT, 3 months	Distress screening with optional resource referral	Distress thermometer, problem checklist, psychological screen for anxiety and depression, personalized report and personalized phone triage with referral to resources
Casarett, 2005 ¹⁷	Adult, 84	Mixed illnesses	Nursing home	Multiple. 3 sites	RCT, 6 months	Identify nursing home residents preference for hospice care	A structured interview identified residents whose goals for care, treatment preferences, and palliative care needs made them appropriate for hospice care. The residents' physicians were notified and asked to authorize a hospice informational visit
Clayton, 2007 ¹⁸	Adult mean age: 65 (CONTROL 64.6, INTERVENTION 65.5)	Mixed cancer population	Other: Palliative care centers	9 centers	RCT	Question prompt list for patient consultation	Assists patients to ask questions about end-of-life issues and improve patient-physician communication
Cohen, 2010 ¹⁹	Adult, 70	Dialysis patients with poor prognosis	Ambulatory	Multicenter, 5 centers	Controlled trial, 17 months	Intervention to facilitate hospice referral	Organization of Renal supportive care teams who contacted subjects and/or family members to encourage advance care planning, discuss hospice resources, and offer general support

Evidence Table 1. Population and study characteristics of all included studies (continued)

Author, year	Population	Disease	Setting (s)	Single vs. Multicenter	Study Design	Description of intervention	Description of intervention
Dalton, 2004 ²⁰	Adult, mean age: 52	Mixed cancer population	Ambulatory	Multicenter - 3 cancer treatment centers and 1 hospital	RCT with three groups - follow up for 6 months	Profile-tailored CBT treatment program, matching individual responses to pain to specific CBT interventions	Five one-hour treatment sessions
Daly, 2010 ²¹	Adult patients mean age 56years and family caregivers mean age 53years	Mixed illnesses	ICU	Multicenter (5 ICU)	Other (Pre-Post design)	An intensive communication system	The ICS included a family meeting within 5 days of adm to assist in goal setting, facilitate decision making, and reduce use of ineffective resources in the ICU; family meeting than weekly after.
Detmar, 2002 ²²	Adult; 57	Mixed cancer	Ambulatory	Single center	RCT; timing of follow-up not reported	Pre-consultation HRQL questionnaire	HRQL questionnaire at 3 consecutive visits, with graphic summary given to patients and physicians before consultation
Du Pen, 2000 ²³	Adult, mean age 61 years	Mixed Cancers	Ambulatory	Multiple (9)	RCT by institution blocks, 4 months	Educational intervention to transfer knowledge on implementing a previously tested algorithm for cancer pain management - provider focused	Role model physician/nurse teams were the core faculty for a day-long seminar. Written reference materials and documentation tools were provided to the trained physician/nurse teams.
Dudgeon, 2008 ²⁴	Adult, 66	Mixed cancer	Ambulatory, hospital, home care	Multicenter, 5 sites?	Controlled trial, 12 months(for intervention)	PCIP=palliative care integration project.	Implementation of common assessment tools, collaborative care plans, and symptom management guidelines.
Engelhardt, 2006 ²⁵	Adult, 70	COPD chronic heart failure, mixed cancer	Hospital, home care	Multicenter, 4 sites	RCT, 3 and 6 months	AICCP= advanced illness coordinated care program.	6 sessions with care coordinator helps with provider communication, care coordination, and support

Evidence Table 1. Population and study characteristics of all included studies (continued)

Author, year	Population	Disease	Setting (s)	Single vs. Multicenter	Study Design	Description of intervention	Description of intervention
Fuchs-Lacelle, 2008 ²⁶	Adult, mean age ~85 years	Dementia	Nursing Homes	12 (average number of beds was 56)	RCT (at the nursing unit level), comparative longitudinal design, 3 months	Nurse -led systematic pain assessment	Nursing staff regularly assessed dementia patients' pain through the use of the Pain Assessment Checklist for Seniors with Limited Ability to Communicate
Gade, 2008 ²⁷	Adult mean age: 73.6	Mixed illnesses	Hospital	3 hospitals	RCT	Interdisciplinary palliative care service for patients.	The IPCS teams included a palliative care physician and nurse, hospital social worker and chaplain. The team met prior to each consultation to share what was known about the patient from the medical record, baseline questionnaire, and hospital providers. The entire team then met with the patient/family to address symptoms, diagnosis, prognosis, and goals of care.
Given, 2002 ²⁸	Adult, intervention: 59 years, control: 57 years	Mixed cancer population	Ambulatory	Multicenter - 2 comprehensive cancer centers, 2 community oncology clinics	RCT, 20 weeks	Nurse implemented pain and fatigue management through patient education and support	Consisted of 10 contacts, 6 in person and 4 via telephone, occurring at two-week intervals over a 20-week period using evidence-based computer guidance for problem solving with patients
Hanks, 2002 ²⁹	Adult mean age 68.4	Mixed illnesses	Hospital	Multicenter	RCT	Full palliative care team advice and support	The effectiveness of a hospital Palliative Care Team on physical symptoms and health-related quality of life of patients and family career.
Hudson, 2005 ³⁰	Adult	Caregivers of patients dying of cancer at home	Home	Two community (home based)	RCT	Evaluation of psycho-educational	

Evidence Table 1. Population and study characteristics of all included studies (continued)

Author, year	Population	Disease	Setting (s)	Single vs. Multicenter	Study Design	Description of intervention	Description of intervention
Hughes, 2000 ³¹	Adult, mean age 70 for study overall	Mixed illnesses	Home care	Multi, 16 sites	RCT, 1 year or until death	Team-Managed Home-Based Primary Care	Home-based primary care including a primary care manager, 24-hour contact for patients, prior approval of hospital readmissions, and HBPC team participation in discharge planning
Jacobsen, 2011 ³²	Adult mean age 62.9 (control), 63.5 (intervention)	Mixed illnesses	Hospital	Single center	Controlled trial	Cognitive model for advance care planning (ACP) discussion	Nursing and physician education about how to approach ACP, focused ACP discussions (information-sharing meetings and/or decision making meetings) with patients and families
Jordhoy, 2000 ³³ Jordoy, 2001 ³⁴ Ringdal 2002 ³⁵ , Ringdal, 2001 ³⁶	Adult, 68	Mixed cancer	Home, ambulatory, and palliative medicine unit	Single center - 12 bed unit palliative medicine unit	Cluster RCT,	Comprehensive palliative care	Multidisciplinary approach to care, outpatient and inpatient managed by PMU , PMU staff served as link to community, community education, predefined guidelines for interaction between palliative care and community
Kaufer, 2008/ ³⁷	Adult patients mean age unclear (Just stated above 50 years and below 50 years)	Mixed illnesses	ICU	Single center	Other (Pre-Post design)	An intervention consisting of early communication, family meetings, and psychosocial support with support by the hospital palliative care team and family support team.	To improve the quality of end-of-life care, particularly by increasing family members' satisfaction with decision making, communication with physicians and nurses, and the death and dying process.

Evidence Table 1. Population and study characteristics of all included studies (continued)

Author, year	Population	Disease	Setting (s)	Single vs. Multicenter	Study Design	Description of intervention	Description of intervention
Keefe, 2005 ³⁸	Adult, mean age 60.5 years	Mixed cancer population	Home care	Multi-center - recruited from an unspecified number of hospices as well as two major cancer centers	RCT, approximately 20 days	Nurse-led partner-guided pain management intervention - three sessions	Nurse-led intervention to educate patient and partner about pain and pain management and to train the partner to support the patient in pain management
Kovach, 2006 ³⁹	Adult, mean age 86.5	Dementia	Nursing Homes	Multisite: 14 Nursing Homes, average of 114 beds	RCT	Serial trial intervention, a protocol of assessing needs of people with dementia	Intervention to identify behavioral symptoms of discomfort by using an explicit schedule and procedures for nurses and ancillary staff
Lautrette et al, 2007 ⁴⁰	Adult, median age 68 in control, 74 in intervention	Mixed - ICU population	Hospital - ICU	Multi-center, all in France, 22 icus, median of 16 beds/ICU	RCT	Proactive EOL conference & brochure	Family conference used detailed guidelines with five objectives of VALUE mnemonic and families given bereavement brochure.
Lilly, 2000 ⁴¹	Control - mean age 60, intervention - mean age 58	Mixed illnesses	ICU	Single center	Prospective; before and after study	Intensive communication and use of critical care	Multidisciplinary family meetings at 72 hrs after admission to ICU. Process that was designed to encourage the use of advanced supportive technology when it is of benefit, but to limit its burdens when it is ineffective.
Lilly, 2003 ⁴²	Adult mean age: 59	Mixed illnesses	ICU, Hospital	Single center	Other prospective: 4-year follow-up	Intensive communication for patients or family by providers	A defined, coordinated, proactive process of communication in which an initial formal family meeting was preceded by communication among providers with regard to the plan of care and the outcome goals.

Evidence Table 1. Population and study characteristics of all included studies (continued)

Author, year	Population	Disease	Setting (s)	Single vs. Multicenter	Study Design	Description of intervention	Description of intervention
Lovell, 2010 ⁴³	Adult; 62	Mixed cancer	Hospital	Multicenter: 21	RCT, four weeks	Pain management educational intervention, four treatment arms - 1) standard care, 2) standard care plus a booklet, 3) standard care plus a video, 4) standard care plus a booklet and a video	Educational intervention consisting of a booklet for adults with cancer pain designed to improve knowledge and attitudes about cancer pain management, pain levels, pain interference, anxiety, QOL, and analgesic use - single contact
Luhrs, 2005 ⁴⁴	Adult, 72	Mixed illnesses	Hospital,	Single, 3 units	Controlled trial (before-after), follow up unclear	Palliative Care for Advanced Disease (PCAD) pathway	Includes a care path, a daily flow sheet, and a physician order sheet with standard orders for symptom control
Marinangeli, 2004 ⁴⁵	Adult; control: 61.3, intervention: 63.9	Mixed cancer population	Ambulatory	Single	RCT, follow up to patient death	Use of strong opioids as the 1st step in pain management versus the WHO analgesic ladder	Comparison group- WHO guidelines where strong opioid is first line, all other pain treatments were the same; palliative care pts
Mcmillan, 2011 ⁴⁶	Adult, 73	Mixed cancer	Hospice	Multicenter, 2 sites	RCT, 2 weeks	Systematic feedback of standardized assessment to IDTS	Standardized assessment followed by two interdisciplinary team discussions
Miaskowski, 2004 ⁴⁷ Miaskowski, 2007 ⁴⁸	Adult, mean age intervention: 60.0, control: 58.8	Mixed cancer population	Ambulatory	Multi-center, 7 centers	RCT, six weeks	Nurse-led psycho-educational intervention - in person contacts at weeks 1, 3, and 6, phone contact at 2, 4, and 5	PRO-SELF group patients were seen by specially trained nurses; psycho-educational intervention, - given written instructions on how to communicate with their physician about unrelieved pain
Mills, 2009 ⁴⁹	Adult, 64	Lung cancer	Hospital	3 center	RCT, 16 weeks	Weekly QOL questionnaire	QOL questionnaire, patients are encourage to share it with health care provider

Evidence Table 1. Population and study characteristics of all included studies (continued)

Author, year	Population	Disease	Setting (s)	Single vs. Multicenter	Study Design	Description of intervention	Description of intervention
Mitchell, 2008 ⁵⁰	Adult, median age between 65-72	Mixed illnesses	Ambulatory, hospital	Multicenter, 2 centers	RCT, 3 weeks (for primary outcome)	Specialist- GP case conferences	GP phoning in to a routine specialist team meeting
Molloy, 2000 ⁵¹	Adult mean age 83.14 (calc from Table 1)	Mixed illnesses	Nursing homes	Multicenter	RCT	The let me decide advance directive program included educating providers, patients and families about advance directives	Educating staff in local hospitals and nursing homes, residents, and families about advance directives and offering competent residents or next-of-kin of mentally incompetent residents an advance directive that provided a range of health care choices for life-threatening illness, cardiac arrest, and nutrition.
Moore, 2002 ⁵²	Adult, 67	Lung cancer	Ambulatory	Multicenter/4 centers	RCT, 3 months	Nurse led follow up	Nurse specialists assessed patients monthly or as needed by phone or in clinic to identify disease progression, symptoms warranting intervention, or serious complications
Mosenthal, 2008 ⁵³	Adult mean age 40 years	Trauma	ICU	Single center 14bed ICU in an academic tertiary care center	Prospective	Structured communication between physician and families of dying trauma patients.	Bereavement/psychosocial support for patients and families, Interdisciplinary family meeting with physician and nurse
Norton, 2007 ⁵⁴	Adult patients mean age 66.1 years	Mixed illnesses	ICU	Single center	Prospective (Pre-Post design)	Proactive palliative care consultation	Full and direct regular involvement of the PC team with the patient's family members to facilitate decision making on goals of care, potential treatment limitations and reduce length of stay.
Oliver, 2001 ⁵⁵ Kalaoukalani, 2007 ⁵⁶	Adult. Mean age 55 years	Mixed cancer population	Ambulatory	Multicenter - two oncology clinics	RCT, two weeks	One-time individualized education and coaching session	Designed to redress misconceptions about pain treatment and to encourage dialog about pain control with their oncologist

Evidence Table 1. Population and study characteristics of all included studies (continued)

Author, year	Population	Disease	Setting (s)	Single vs. Multicenter	Study Design	Description of intervention	Description of intervention
Pantilat, 2010 ⁵⁷	Adult, 76	CHF, COPD, mixed cancer, Cirrhosis	Hospital	Single, 560 bed	RCT, 2 weeks after discharge	Hospital-Based Palliative Medicine Consultation	5/week during hospitalization the PMC physician assessed symptoms, psychosocial and spiritual needs, discussed treatment preferences, consulted pharmacist and chaplain as needed, communicated findings and recommendations to the patient's team via a medical chart note and by phone.
Penticuff, 2005 ⁵⁸	Pediatrics (Very low birth weight infants immediately after birth)	Other	NICU (neonatal ICU)	2 centers	Controlled trial	Infant Progress Chart and Care Planning Meetings	An intervention to improve parents' comprehension of infant medical condition and satisfaction with collaboration in treatment decisions - care planning, 3 meetings, including goal-setting with complications and development of poor prognosis
Porter, 2011 ⁵⁹	Adult	Lung Cancer Stage I,II or III	Ambulatory	Multicenter	RCT	Care giver-assisted coping skills training	
Rabow, 2004 ⁶⁰	Adult, 68 years	COPD, CHF, cancer	Ambulatory	Single	12 months, controlled trial	Comprehensive Care Team	Primary care physicians received multiple palliative care team consultations, and patients received advance care planning, psychosocial support, and family caregiver training.
Rosenbloom, 2007 ⁶¹	Adult	Breast, lung, colorectal	Ambulatory	Single center	RCT, 6 months	Health related quality of life (HRQL) assessment of patients	HRQL assessments given to treating nurse in 1 group; in another group, HRQL assessment followed by structured interview and discussion

Evidence Table 1. Population and study characteristics of all included studies (continued)

Author, year	Population	Disease	Setting (s)	Single vs. Multicenter	Study Design	Description of intervention	Description of intervention
Schneiderman, 2000 ⁶²	Control - mean age 45.9, intervention - mean age 52.4	Mixed illnesses	ICU	Single center	RCT	Impact of ethics consultations on patients, families and providers	
Schneiderman, 2003 ⁶³	Adult mean age 67.5 - both groups	Mixed illnesses	ICU	Multicenter	RCT	Ethics consultations to resolve conflicts about life-sustaining interventions.	
Steel, 2007 ⁶⁴	Adult	Hepa-tobiliary	Ambulatory	Single center	RCT	Individually tailored psychosocial intervention	Patients chose from list of concerns which were most distressing (symptoms, psychological, and end of life issues) and strategies offered to treat each problem
Syrjala, 2008 ⁶⁵	Adult, 57.77 for intervention, 53.37 for control	Mixed cancer population	Ambulatory	Multicenter: 6 centers	RCT, six months	Patient training in cancer pain management using integrated print and video materials	Study RN reviewed materials with the patient; patient filled out checklist with RN on barriers to pain relief, and reviewed with RN; patient encouraged to take checklist to next doctor's appt; 1 10-minute follow-up
Taenzer, 2000 ⁶⁶	Adult	Lung cancer	Ambulatory	Single center	Controlled trial, duration not specified	Provide patient-specific QOL info to staff before appointments	Staff instructed in how to use the QOL report to identify specific domains to guide their discussion

Evidence Table 1. Population and study characteristics of all included studies (continued)

Author, year	Population	Disease	Setting (s)	Single vs. Multicenter	Study Design	Description of intervention	Description of intervention
Temel, 2010 ⁶⁷	Adult (65years)	Metastatic lung cancer	Ambulatory	Single center (Hospital: oncology clinic)	RCT, 12 weeks	Early palliative care integrated with standard oncologic care	Palliative care physician/advance practice RN outpatient consultation within 3 months of diagnosis and at least monthly thereafter; based on palliative care guidelines, including physical and psychosocial symptoms, goals of care, decision making regarding treatment, and coordinating care; concurrent with usual oncology care
Van der Peet, 2004 ⁶⁸	Adult, intervention: 62, control: 60.5 years	Mixed cancer population	Home care	Multicenter - outpatient clinics and one radiotherapy department	RCT, 8 weeks	Nursing-based pain education program - three home visits	The PEP consists of the following three components: (1) enhancement of patients' pain knowledge and pain management by means of a brochure, (2) instruction of patients as to how they should record their pain intensity in a pain diary, and (3) stimulation of patients' help-seeking behavior.
Vd heide, 2010 ⁶⁹	ADULT, 64-75	Mixed cancer	Hospital, nursing home, home care	Multicenter. 6 centers or organizations	Controlled trial (before-after),	Liverpool Care Pathway for the Dying Patient	Structuring care in the last days of life and at facilitating audit by standardizing the monitoring of care
Velikova, 2004 ⁷⁰ ; Velikova, 2010 ⁷¹	Adult; 54.9 (12.3)	Mixed cancer	Ambulatory	Single center	RCT; unclear (3 visits)	Health-related quality of life survey with feedback to physicians	Patients were (1) asked to complete a touch-screen HRQOL survey that provided feedback to physicians or (2) asked to complete the HRQOL survey that did not provide feedback or (3) were not asked to complete a survey - 3 visits; providers were provided detailed training & asked to review & use the HRQOL information during encounters

Evidence Table 1. Population and study characteristics of all included studies (continued)

Author, year	Population	Disease	Setting (s)	Single vs. Multicenter	Study Design	Description of intervention	Description of intervention
Walsh, 2007 ⁷²	Adult; 56.3	Mixed cancer	Home, ambulatory	3 cancer networks	RCT	Career-focused intervention added to palliative care	Six visits to careers by advisors with background in nursing and social work: needs assessment, advice and support focusing on 7 domains of care
Ward, 2000 ⁷³	Adult, 58 years	Gynecologic Cancers	Ambulatory	Single	RCT, two months	Nurse led individually tailored information	Concerns (barriers) and side effect management, used a booklet developed through comprehensive process, tailored based on patient's barriers and side effects questionnaire; with booster follow-up call
Ward, 2008 ⁷⁴	Adult, 55.11 years	Mixed cancer population	Ambulatory	Multicenter - 2 clinics	RCT, two months	Educational intervention based on the representational approach to patient education	Single 1:1 face-to-face psycho educational session that lasts from 20 minutes to an hour.
Wells, 2003 ⁷⁵	Adult, 53 years	Mixed cancer population	Ambulatory	Single	RCT, six months	Two interventions 1)Pain education with a hot line 2) Pain education with provider-initiated follow-up telephone calls, compared to usual care control	All treatment arms were shown a videotape and received individual counseling - both intervention arms had access to a hotline, the telephone follow up intervention arm received four follow up calls
Wilkie, 2010 ⁷⁶	Adult; mean age intervention: 63.4, mean age controls: 60.1	Lung cancer	Ambulatory	Multicenter - 11 sites	RCT, 4 weeks	Individualized pain coaching on self monitoring and reporting	12-minute videotape of trained actress -pain perception and monitoring, instruction in using a Coaching tool at home and giving information to their provider; also several reinforcement coachings

Evidence Table 1. Population and study characteristics of all included studies (continued)

Author, year	Population	Disease	Setting (s)	Single vs. Multicenter	Study Design	Description of intervention	Description of intervention
Woo, 2011 ¹⁷	Adults,84	Mixed illnesses (majority dementia)	Rehabilitation and convalescent unit	Single, 227 beds	Controlled trial, before-after, 3 months	Continuous initiative (Plan-do-study-act)	Service reengineering, provision of guidelines and educational material, and interactive sessions to achieve culture change among staff.

ACP; American College of Physicians; AICCP; Palliative Care Integration Project; CHF; Cardiac Heart Failure; COPD; Chronic Obstructive Pulmonary Disease; EOL; End of Life; HMO; Health Maintenance Organization; HRQL; Health Related Quality of Life; ICS; An intensive communication system; ICU; Intensive Care Unit; Medicine Consultation; NCCN; National Comprehensive Cancer Network; NICU; Neonatal Intensive Care Unit; PACSLAC; Pain Assessment Checklist for Seniors with Limited Ability to Communicate; PCIP; Palliative Care Integration project; PCS; Palliative Care Service; PMC Palliative Management Care; PMU; Pain Management Unit; QPL; Question Prompts Lists; RCT; Randomized Control Trial

Evidence Table 1. Reference List

- Ahrens T, Yancey V, Kollef M. Improving family communications at the end of life: implications for length of stay in the intensive care unit and resource use. *Am J Crit Care* 2003; 12(4):317-23; discussion 324.
- Aiken LS, Butner J, Lockhart CA, Volk-Craft BE, Hamilton G, Williams FG. Outcome evaluation of a randomized trial of the PhoenixCare intervention: program of case management and coordinated care for the seriously chronically ill. *J Palliat Med* 2006; 9(1):111-26.
- Aranda S, Schofield P, Weih L, Milne D, Yates P, Faulkner R. Meeting the support and information needs of women with advanced breast cancer: a randomised controlled trial. *Br J Cancer* 2006; 95(6):667-73.
- Aubin M, Vezina L, Parent R *et al.* Impact of an educational program on pain management in patients with cancer living at home. *Oncol Nurs Forum* 2006; 33(6):1183-8.
- Badger F, Clifford C, Hewison A, Thomas K. An evaluation of the implementation of a programme to improve end-of-life care in nursing homes. *Palliat Med* 2009; 23(6):502-11.
- Bailey FA, Burgio KL, Woodby LL *et al.* Improving processes of hospital care during the last hours of life. *Arch Intern Med* 2005; 165(15):1722-7.
- Bakitas M, Lyons KD, Hegel MT *et al.* Effects of a palliative care intervention on clinical outcomes in patients with advanced cancer: the Project ENABLE II randomized controlled trial. *JAMA* 2009; 302(7):741-9.
- Blumenthal JA, Babyak MA, Keefe FJ *et al.* Telephone-based coping skills training for patients awaiting lung transplantation. *Journal of Consulting and Clinical Psychology* 2006; 74(3):535-44.
- Bookbinder M, Blank AE, Arney E *et al.* Improving end-of-life care: development and pilot-test of a clinical pathway. *J Pain Symptom Manage* 2005; 29(6):529-43.
- Borneman T, Koczywas M, Cristea M, Reckamp K, Sun V, Ferrell B. An interdisciplinary care approach for integration of palliative care in lung cancer. *Clin Lung Cancer* 2008; 9(6):352-60.
- Borneman T, Koczywas M, Sun VC, Piper BF, Uman G, Ferrell B. Reducing patient barriers to pain and fatigue management. *J Pain Symptom Manage* 2010; 39(3):486-501.
- Brumley RD, Enguidanos S, Cherin DA. Effectiveness of a home-based palliative care program for end-of-life. *J Palliat Med* 2003; 6(5):715-24.
- Brumley R, Enguidanos S, Jamison P *et al.* Increased satisfaction with care and lower costs: results of a randomized trial of in-home palliative care. *J Am Geriatr Soc* 2007; 55(7):993-1000.
- Danz MS, Rubenstein LV, Hempel S *et al.* Identifying quality improvement intervention evaluations: is consensus achievable? *Qual Saf Health Care* 2010; 19(4):279-83.
- Campbell ML, Guzman JA. Impact of a proactive approach to improve end-of-life care in a medical ICU. *Chest* 2003; 123(1):266-71.
- Carlson LE, Groff SL, Maciejewski O, Bultz BD. Screening for distress in lung and breast cancer outpatients: a randomized controlled trial. *J Clin Oncol* 2010; 28(33):4884-91.
- Casarett D, Karlawish J, Morales K, Crowley R, Mirsch T, Asch DA. Improving the use of hospice services in nursing homes: a randomized controlled trial. *JAMA* 2005; 294(2):211-7.
- Clayton JM, Butow PN, Tattersall MH *et al.* Randomized controlled trial of

- a prompt list to help advanced cancer patients and their caregivers to ask questions about prognosis and end-of-life care. *J Clin Oncol* 2007; 25(6):715-23.
19. Cohen LM, Ruthazer R, Germain MJ. Increasing hospice services for elderly patients maintained with hemodialysis. *J Palliat Med* 2010; 13(7):847-54.
 20. Dalton JA, Keefe FJ, Carlson J, Youngblood R. Tailoring cognitive-behavioral treatment for cancer pain. *Pain Manag Nurs* 2004; 5(1):3-18.
 21. Cook AM, Finlay IG, Edwards AG *et al.* Efficiency of searching the grey literature in palliative care. *J Pain Symptom Manage* 2001; 22(3):797-801.
 22. Detmar SB, Muller MJ, Schornagel JH, Wever LD, Aaronson NK. Health-related quality-of-life assessments and patient-physician communication: a randomized controlled trial. *JAMA* 2002; 288(23):3027-34.
 23. Du Pen AR, Du Pen S, Hansberry J *et al.* An educational implementation of a cancer pain algorithm for ambulatory care. *Pain Manag Nurs* 2000; 1(4):116-28.
 24. Dudgeon DJ, Knott C, Eichholz M *et al.* Palliative Care Integration Project (PCIP) quality improvement strategy evaluation. *J Pain Symptom Manage* 2008; 35(6):573-82.
 25. Engelhardt JB, McClive-Reed KP, Toseland RW, Smith TL, Larson DG, Tobin DR. Effects of a program for coordinated care of advanced illness on patients, surrogates, and healthcare costs: a randomized trial. *Am J Manag Care* 2006; 12(2):93-100.
 26. - Fuchs-Lacelle S, - Hadjistavropoulos T, - Lix L. - Pain Assessment as Intervention: a Study of Older Adults With Severe Dementia. - *Clinical Journal of Pain* - 2008/10//; - 24(- 8):- 697, - 707.
 27. Gade G, Venohr I, Conner D *et al.* Impact of an inpatient palliative care team: a randomized control trial. *J Palliat Med* 2008; 11(2):180-90.
 28. Given B, Given CW, McCorkle R *et al.* Pain and fatigue management: results of a nursing randomized clinical trial. *Oncol Nurs Forum* 2002; 29(6):949-56.
 29. Hanks GW, Robbins M, Sharp D *et al.* The imPaCT study: a randomised controlled trial to evaluate a hospital palliative care team. *British Journal of Cancer* 2002; 87(7):733-9.
 30. Hudson PL, Aranda S, Hayman-White K. A psycho-educational intervention for family caregivers of patients receiving palliative care: a randomized controlled trial. *J Pain Symptom Manage* 2005; 30(4):329-41.
 31. Hughes SL, Weaver FM, Giobbie-Hurder A *et al.* Effectiveness of team-managed home-based primary care: a randomized multicenter trial. *JAMA : the Journal of the American Medical Association* 2000; 284(22):2877-85.
 32. - Jacobsen Juliet, - Robinson Ellen, - Jackson VA, - Meigs JB, - Billings J Andrew. - Development of a Cognitive Model for Advance Care Planning Discussions: Results From a Quality Improvement Initiative. - *Journal of Palliative Medicine* - 2011/03//; - 14(- 3):- 331, - 336.
 33. - Jordhoy MS, - Fayers P, - Saltnes T, - Ahlner-Elmqvist M, - Jannert M, - Kaasa S. - A Palliative-Care Intervention and Death at Home: a Cluster Randomised Trial. - *Lancet* - 2000/09/09/2000 Sep 9; - 356(- 9233):- 888, - 893.
 34. Jordhoy MS, Fayers P, Loge JH, Ahlner-Elmqvist M, Kaasa S. Quality of life in palliative cancer care: results from a cluster randomized trial. *J Clin Oncol* 2001; 19(18):3884-94.
 35. - Ringdal GI, - Jordhoy MS, - Kaasa S. - Family Satisfaction With End-of-Life Care for Cancer Patients in a Cluster Randomized Trial. - *Journal of Pain & Symptom Management* - 2002/07//; - 24(- 1):- 53, - 63.
 36. - Ringdal GI, - Jordhoy MS, - Ringdal K, - Kaasa S. - The First Year of Grief and Bereavement in Close Family Members to Individuals Who Have Died of Cancer. - *Palliative Medicine* - 2001/03//; - 15(- 2):- 91, - 105.
 37. Kaufer M, Murphy P, Barker K, Mosenthal A. Family satisfaction following the death of a loved one in an inner city MICU. *Am J Hosp Palliat Care* 2008; 25(4):318-25.
 38. Keefe FJ, Ahles TA, Sutton L *et al.* Partner-guided cancer pain management at the end of life: a preliminary study. *J Pain Symptom Manage* 2005; 29(3):263-72.
 39. Kovach CR, Logan BR, Noonan PE *et al.* Effects of the Serial Trial Intervention on discomfort and behavior of nursing home residents with dementia. *American Journal of Alzheimer's Disease and Other Dementias* 2006; 21(3):147-55.
 40. Lautrette A, Darmon M, Megarbane B *et al.* A communication strategy and brochure for relatives of patients dying in the ICU. *N Engl J Med* 2007; 356(5):469-78.
 41. Lilly CM, De Meo DL, Sonna LA *et al.* An intensive communication intervention for the critically ill. *Am J Med* 2000; 109(6):469-75.
 42. Lilly CM, Sonna LA, Haley KJ, Massaro AF. Intensive communication: four-year follow-up from a clinical practice study. *Crit Care Med* 2003; 31(5 Suppl):S394-9.
 43. Lovell MR, Forder PM, Stockler MR *et al.* A randomized controlled trial of a standardized educational intervention for patients with cancer pain. *J Pain Symptom Manage* 2010; 40(1):49-59.
 44. Luhrs CA, Meghani S, Homel P *et al.* Pilot of a pathway to improve the care of imminently dying oncology inpatients in a Veterans Affairs Medical Center. *J Pain Symptom Manage* 2005; 29(6):544-51.
 45. Marinangeli F, Ciccozzi A, Leonardis M *et al.* Use of strong opioids in advanced cancer pain: a randomized trial. *J Pain Symptom Manage* 2004; 27(5):409-16.
 46. McMillan SC, Small BJ, Haley WE. Improving hospice outcomes through systematic assessment: a clinical trial. *Cancer Nurs* 2011; 34(2):89-97.
 47. Miaskowski C, Dodd M, West C *et al.* Randomized clinical trial of the effectiveness of a self-care intervention to improve cancer pain management. *J Clin Oncol* 2004; 22(9):1713-20.
 48. Miaskowski C, Dodd M, West C *et al.* The use of a responder analysis to identify differences in patient outcomes following a self-care intervention to

- improve cancer pain management. *Pain* 2007; 129(1-2):55-63.
49. Mills ME, Murray LJ, Johnston BT, Cardwell C, Donnelly M. Does a patient-held quality-of-life diary benefit patients with inoperable lung cancer? *J Clin Oncol* 2009; 27(1):70-7.
 50. Mitchell GK, Del Mar CB, O'Rourke PK, Clavarino AM. Do case conferences between general practitioners and specialist palliative care services improve quality of life? A randomised controlled trial (ISRCTN 52269003). *Palliative Medicine* 2008; 22(8):904-12.
 51. Molloy DW, Guyatt GH, Russo R *et al.* Systematic implementation of an advance directive program in nursing homes: a randomized controlled trial. *JAMA* 2000; 283(11):1437-44.
 52. Moore S, Corner J, Haviland J *et al.* Nurse led follow up and conventional medical follow up in management of patients with lung cancer: randomised trial. *BMJ* 2002; 325(7373):1145.
 53. Mosenthal AC, Murphy PA, Barker LK, Lavery R, Retano A, Livingston DH. Changing the culture around end-of-life care in the trauma intensive care unit. *J Trauma* 2008; 64(6):1587-93.
 54. Norton SA, Hogan LA, Holloway RG, Temkin-Greener H, Buckley MJ, Quill TE. Proactive palliative care in the medical intensive care unit: effects on length of stay for selected high-risk patients. *Crit Care Med* 2007; 35(6):1530-5.
 55. Oliver JW, Kravitz RL, Kaplan SH, Meyers FJ. Individualized patient education and coaching to improve pain control among cancer outpatients. *Journal of Clinical Oncology : Official Journal of the American Society of Clinical Oncology* 2001; 19(8):2206-12.
 56. Kalaoukalani D, Franks P, Oliver JW, Meyers FJ, Kravitz RL. Can patient coaching reduce racial/ethnic disparities in cancer pain control? Secondary analysis of a randomized controlled trial. *Pain Med* 2007; 8(1):17-24.
 57. Pantilat SZ, O'Riordan DL, Dibble SL, Landefeld CS. Hospital-based palliative medicine consultation: a randomized controlled trial. *Arch Intern Med* 2010; 170(22):2038-40.
 58. Penticuff JH, Arheart KL. Effectiveness of an intervention to improve parent-professional collaboration in neonatal intensive care. *J Perinat Neonatal Nurs* 2005; 19(2):187-202.
 59. Porter LS, Keefe FJ, Garst J *et al.* Caregiver-Assisted Coping Skills Training for Lung Cancer: Results of a Randomized Clinical Trial. *J Pain Symptom Manage* 2010.
 60. Rabow MW, Dibble SL, Pantilat SZ, McPhee SJ. The comprehensive care team: a controlled trial of outpatient palliative medicine consultation. *Arch Intern Med* 2004; 164(1):83-91.
 61. - Rosenbloom SK, - Victorson DE, - Hahn EA, - Peterman AH, - Cella David. - Assessment Is Not Enough: a Randomized Controlled Trial of the Effects of Hqrl Assessment on Quality of Life and Satisfaction in Oncology Clinical Practice. - *Psycho-Oncology* - 2007/12//; - 16(- 12):- 1069, - 1079.
 62. Schneiderman LJ, Gilmer T, Teetzel HD. Impact of ethics consultations in the intensive care setting: a randomized, controlled trial. *Crit Care Med* 2000; 28(12):3920-4.
 63. Schneiderman LJ, Gilmer T, Teetzel HD *et al.* Effect of ethics consultations on nonbeneficial life-sustaining treatments in the intensive care setting: a randomized controlled trial. *JAMA* 2003; 290(9):1166-72.
 64. Steel JL, Nadeau K, Olek M, Carr BI. Preliminary results of an individually tailored psychosocial intervention for patients with advanced hepatobiliary carcinoma. *J Psychosoc Oncol* 2007; 25(3):19-42.
 65. Syrjala KL, Abrams JR, Polissar NL *et al.* Patient training in cancer pain management using integrated print and video materials: a multisite randomized controlled trial. *Pain* 2008; 135(1-2):175-86.
 66. Taenzer P, Bultz BD, Carlson LE *et al.* Impact of computerized quality of life screening on physician behaviour and patient satisfaction in lung cancer outpatients. *Psychooncology* 2000; 9(3):203-13.
 67. Temel JS, Greer JA, Muzikansky A *et al.* Early palliative care for patients with metastatic non-small-cell lung cancer. *The New England Journal of Medicine* 2010; 363(8):733-42.
 68. van der Peet EH, van den Beuken-van Everdingen MH, Patijn J, Schouten HC, van Kleef M, Courtens AM. Randomized clinical trial of an intensive nursing-based pain education program for cancer outpatients suffering from pain. *Support Care Cancer* 2008.
 69. van der Heide A, Veerbeek L, Swart S, van der Rijt C, van der Maas PJ, van Zuylen L. End-of-life decision making for cancer patients in different clinical settings and the impact of the LCP. *J Pain Symptom Manage* 2010; 39(1):33-43.
 70. Velikova G, Booth L, Smith AB *et al.* Measuring quality of life in routine oncology practice improves communication and patient well-being: a randomized controlled trial. *J Clin Oncol* 2004; 22(4):714-24.
 71. Velikova G, Keding A, Harley C *et al.* Patients report improvements in continuity of care when quality of life assessments are used routinely in oncology practice: secondary outcomes of a randomised controlled trial. *Eur J Cancer* 2010; 46(13):2381-8.
 72. Walsh K, Jones L, Tookman A *et al.* Reducing emotional distress in people caring for patients receiving specialist palliative care. Randomised trial. *Br J Psychiatry* 2007; 190:142-7.
 73. Ward S, Donovan HS, Owen B, Grosen E, Serlin R. An individualized intervention to overcome patient-related barriers to pain management in women with gynecologic cancers. *Research in Nursing & Health* 2000; 23(5):393-405.
 74. Ward S, Donovan H, Gunnarsdottir S, Serlin RC, Shapiro GR, Hughes S. A randomized trial of a representational intervention to decrease cancer pain (RIDcancerPain). *Health Psychol* 2008; 27(1):59-67.
 75. Wells N, Hepworth JT, Murphy BA, Wujcik D, Johnson R. Improving cancer pain management through patient and family education. *J Pain Symptom Manage* 2003; 25(4):344-56.

76. Wilkie D, Berry D, Cain K *et al.* Effects of coaching patients with lung cancer to report cancer pain. *Western Journal of Nursing Research* 2010; 32(1):23-46.

77. Woo J, Cheng JO, Lee J *et al.* Evaluation of a continuous quality improvement initiative for end-of-life care for older noncancer patients. *J Am Med Dir Assoc* 2011; 12(2):105-13

Evidence Table 2. Description of interventions for studies addressing continuity, coordination of care, and transitions

Author, year	Integrative vs. consultative	Target of intervention
Aiken, 2006, ¹	Consultative: interacts with both	Case management, interdisciplinary assessment, symptom management, advanced care planning, overutilization
Badger, 2009 ²	Integrative	Communication, coordination, advanced care planning, over-utilization, symptom management
Bailey, 2005 ³	Integrative	Symptom management, coordination, interdisciplinary assessment, comfort care, over-utilization
Bakitas, 2009 ⁴	Consultative: interacts with patient/family	Case management, interdisciplinary assessment, transition, communication
Bookbinder, 2005 ⁵	Integrative	Interdisciplinary teams, communication, symptom management, support for families, case management
Brumley, 2003 ⁶	Consultative: interacts with both	Case management, interdisciplinary assessments, family support, communication, coordination
Brumley, 2007 ⁷	Consultative: interacts with both	Case management, interdisciplinary assessments, family support, communication, coordination, spiritual
Casarett, 2005 ⁸	Integrative	Transition, communication
Cohen, 2010 ⁹	Consultative: interacts with patient/family	Transition
Dudgeon, 2008 ¹⁰	Integrative	Pain, care giving, interdisciplinary assessment, coordination, documentation
Engelhardt , 2006 ¹¹	Combined: interacts with patient/family	Psychosocial support, communication, coordination, family support and care giving, advanced care planning, case management
Hughes, 2000 ¹²	Combined: Interacts with both	Transition, case management, interdisciplinary assessment
Jordhoy, 2000 ¹³ , Jordhoy, 2001 ¹⁴ , Ringdal, 2001 ¹⁵ , Ringdal, 2002 ¹⁶	Combined: interacts with both	Interdisciplinary team, symptom management, support for caregivers who had died from advanced cancer
Luhrs, 2005 ¹⁷	Integrative	Transition, case management, interdisciplinary assessment
McMillan, 2011 ¹⁸	Integrative	Interdisciplinary assessment
Mitchell, 2008 ¹⁹	Integrative	Interdisciplinary teams
Moore, 2002 ²⁰	Consultative: interacts with both	Case management, coordination, documentation
Pantilat, 2010 ²¹	Consultative: interacts with both	Interdisciplinary assessments, communication, documentation
Rabow, 2004 ²²	Consultative: interacts with both	Case management, communication, interdisciplinary teams, interdisciplinary assessments, psychosocial/spiritual support, physical symptoms
Temel, 2010 ²³	Consultative: interacts with both	Physical and psychosocial symptoms, goals of care, treatment decision making and coordinating care
Van der Heide, 2010 ²⁴	Integrative	Interdisciplinary assessment, communication, symptom management, transition
Woo, 2011 ²⁵	Integrative	Communication, coordination, documentation

Evidence Table 2. Reference List

1. Aiken LS, Butner J, Lockhart CA, Volk-Craft BE, Hamilton G, Williams FG. Outcome evaluation of a randomized trial of the Phoenix Care intervention: program of case management and coordinated care for the seriously chronically ill. *J Palliative Med* 2006; 9(1):111-26.
2. Badger F, Clifford C, Hewison A, Thomas K. An evaluation of the implementation of a program to improve end of life care in nursing homes. *Palliative Med* 2009; 23(6):502-11.
3. Bailey FA, Burgio KL, Woodby LL *et al.* Improving processes of hospital care during the last hours of life. *Arch Intern Med* 2005; 165(15):1722-7.
4. Bakitas M, Lyons KD, Hegel MT *et al.* Effects of a palliative care intervention on clinical outcomes in patients with advanced cancer: the Project ENABLE II randomized controlled trial. *JAMA* 2009; 302(7):741-9.
5. Bookbinder M, Blank AE, Arney E *et al.* Improving end-of-life care: development and pilot-test of a clinical pathway. *J Pain Symptom Manage* 2005; 29(6):529-43.
6. Brumley RD, Enguidanos S, Cherin DA. Effectiveness of a home-based palliative care program for end-of-life. *J Palliative Med* 2003; 6(5):715-24.
7. Brumley R, Enguidanos S, Jamison P *et al.* Increased satisfaction with care and lower costs: results of a randomized trial of in-home palliative care. *J Am Geriatric Soc* 2007; 55(7):993-1000.
8. Casarett D, Karlawish J, Morales K, Crowley R, Mirsch T, Asch DA. Improving the use of hospice services in nursing homes: a randomized controlled trial. *JAMA* 2005; 294(2):211-7.
9. Cohen LM, Ruthazer R, Germain MJ. Increasing hospice services for elderly patients maintained with hemodialysis. *J Palliative Med* 2010; 13(7):847-54.
10. Dudgeon DJ, Knott C, Eichholz M *et al.* Palliative Care Integration Project (PCIP) quality improvement strategy evaluation. *J Pain Symptom Manage* 2008; 35(6):573-82.
11. Engelhardt JB, McClive-Reed KP, Toseland RW, Smith TL, Larson DG, Tobin DR. Effects of a program for coordinated care of advanced illness on patients, surrogates, and healthcare costs: a randomized trial. *Am J Managed Care* 2006; 12(2):93-100.
12. Hughes SL, Weaver FM, Giobbie-Hurder A *et al.* Effectiveness of team-managed home-based primary care: a randomized multicenter trial. *JAMA: the Journal of the American Medical Association* 2000; 284(22):2877-85.
13. - Jordhoy MS, - Fayers P, - Saltnes T, - Ahlner-Elmqvist M, - Jannert M, - Kaasa S. - A Palliative-Care Intervention and Death at Home: a Cluster Randomized Trial. - *Lancet* - 2000/09/09/2000 Sep 9; - 356(- 9233):- 888, - 893.
14. Jordhoy MS, Fayers P, Loge JH, Ahlner-Elmqvist M, Kaasa S. Quality of life in palliative cancer care: results from a cluster randomized trial. *J Clinical Oncology* 2001; 19(18):3884-94.
15. - Ringdal GI, - Jordhoy MS, - Ringdal K, - Kaasa S. - The First Year of Grief and Bereavement in Close Family Members to Individuals Who Have Died of Cancer. - *Palliative Medicine* - 2001/03//; - 15(- 2):- 91, - 105.
16. - Ringdal GI, - Jordhoy MS, - Kaasa S. - Family Satisfaction With End-of-Life Care for Cancer Patients in a Cluster Randomized Trial. - *Journal of Pain & Symptom Management* - 2002/07//; - 24(- 1):- 53, - 63.
17. Luhrs CA, Meghani S, Homel P *et al.* Pilot of a pathway to improve the care of imminently dying oncology inpatients in a Veterans Affairs Medical Center. *J Pain Symptom Manage* 2005; 29(6):544-51.
18. McMillan SC, Small BJ, Haley WE. Improving hospice outcomes through systematic assessment: a clinical trial. *Cancer Nursing* 2011; 34(2):89-97.
19. Mitchell GK, Del Mar CB, O'Rourke PK, Clavarino AM. Do case conferences between general practitioners and specialist palliative care services improve quality of life? A Randomized controlled trial (ISRCTN 52269003). *Palliative Medicine* 2008; 22(8):904-12.
20. Moore S, Corner J, Haviland J *et al.* Nurse led follow up and conventional medical follow up in management of patients with lung cancer: Randomized trial. *BMJ* 2002; 325(7373):1145.
21. Pantilat SZ, O'Riordan DL, Dibble SL, Landefeld CS. Hospital-based palliative medicine consultation: a randomized controlled trial. *Arch Intern Med* 2010; 170(22):2038-40.
22. Rabow MW, Dibble SL, Pantilat SZ, McPhee SJ. The comprehensive care team: a controlled trial of outpatient palliative medicine consultation. *Arch Intern Med* 2004; 164(1):83-91.
23. Temel JS, Greer JA, Muzikansky A *et al.* Early Palliative care for patients with metastatic non-small cell lung cancer. *The New England Journal of Medicine* 2010; 363(8):733-42.
24. van der Heide A, Veerbeek L, Swart S, van der Rijt C, van der Maas PJ, van Zuylen L. End-of-life decision making for cancer patients in different clinical settings and the impact of the LCP. *J Pain Symptom Manage* 2010; 39(1):33-43.
25. Woo J, Cheng JO, Lee J *et al.* Evaluation of a continuous quality improvement initiative for end-of-life care for older non-cancer patients. *J Am Med Dir Assoc* 2011; 12(2):105-13.

Evidence Table 3. Description of quality improvement elements in studies addressing continuity, coordination of care, and transitions

Author, year	Provider reminder system?	Facilitated relay of clinical data to providers?	Audit and feedback?	Provider education?	Coaching/ collaborative /skills training?	Patient/ family/ caregiver education?	Promotion of self-Management?	Organizational change?	Other?
Aiken, 2006 ¹	No	Yes	No	No	No	Yes	Yes	Yes	No
Badger, 2009 ²	Yes	Yes	Yes	Yes	Yes	No	No	Yes	No
Bailey, 2005 ³	Yes	Yes	No	Yes	Yes	No	No	No	No
Bakitas, 2009 ⁴	No	No	No	No	No	Yes	Yes	Yes	No
Bookbinder, 2005 ⁵	Yes	Yes	No	Yes	Yes	No	No	No	No
Brumley, 2003 ⁶	No	No	No	Yes	No	Yes	Yes	Yes	No
Brumley, 2007 ⁷	No	No	No	Yes	No	Yes	Yes	Yes	No
Casarett, 2005 ⁸	No	Yes	No	No	No	No	No	No	No
Cohen, 2010 ⁹	No	No	No	No	No	No	No	Yes	No
Dudgeon, 2008 ¹⁰	Yes	Yes	No	Yes	No	No	No	No	No
Engelhardt, 2006 ¹¹	No	Yes	No	No	No	Yes	Yes	Yes	No
Hughes, 2000 ¹²	No	No	No	No	No	No	Yes	Yes	No

Evidence Table 3. Description of quality improvement elements in studies addressing continuity, coordination of care, and transitions (continued)

Author, year	Provider reminder system?	Facilitated relay of clinical data to providers?	Audit and feedback?	Provider education?	Coaching/ collaborative /skills training?	Patient/ family/ caregiver education?	Promotion of self-Management?	Organizational change?	Other?
Jordhoy, 2000 ¹³ , Jordhoy, 2001 ¹⁴ , Ringdal, 2001 ¹⁵ , Ringdal, 2002 ¹⁶	No	No	No	Yes	No	Yes	Yes	Yes	No
Luhrs, 2005 ¹⁷	No	No	No	No	No	No	Yes	Yes	No
McMillan, 2011 ¹⁸	Yes	Yes	No	No	No	No	No	Yes	No
Mitchell, 2008 ¹⁹	No	Yes	No	No	No	No	No	Yes	No
Moore, 2002 ²⁰	No	Yes	No	No	No	No	No	Yes	No
Pantilat, 2010 ²¹	Yes	Yes	No	No	No	No	No	Yes	No
Rabow, 2004 ²²	No	Yes	No	No	No	Yes	No	Yes	No
Temel, 2010 ²³	No	No	No	No	No	Yes	Yes	No	Yes
Van der Heide, 2010 ²⁴	Yes	No	No	No	No	No	No	No	No
Woo, 2011 ²⁵	Yes	Yes	No	Yes	Yes	Yes	No	No	No

Evidence Table 3. Reference List

1. Aiken LS, Butner J, Lockhart CA, Volk-Craft BE, Hamilton G, Williams FG. Outcome evaluation of a randomized trial of the Phoenix Care intervention: program of case management and coordinated care for the seriously chronically ill. *J Palliative Med* 2006; 9(1):111-26.
2. Badger F, Clifford C, Hewison A, Thomas K. An evaluation of the implementation of a program to improve end-of-life care in nursing homes. *Palliative Med* 2009; 23(6):502-11.
3. Bailey FA, Burgio KL, Woodby LL *et al.* Improving processes of hospital care during the last hours of life. *Arch Intern Med* 2005; 165(15):1722-7.
4. Bakitas M, Lyons KD, Hegel MT *et al.* Effects of a palliative care intervention on clinical outcomes in patients with advanced cancer: the Project ENABLE II randomized controlled trial. *JAMA* 2009; 302(7):741-9.
5. Bookbinder M, Blank AE, Arney E *et al.* Improving end-of-life care: development and pilot-test of a clinical pathway. *J Pain Symptom Manage* 2005; 29(6):529-43.
6. Brumley RD, Enguidanos S, Cherin DA. Effectiveness of a home-based palliative care program for end-of-life. *J Palliative Med* 2003; 6(5):715-24.
7. Brumley R, Enguidanos S, Jamison P *et al.* Increased satisfaction with care and lower costs: results of a randomized trial of in-home palliative care. *J Am Geriatric Soc* 2007; 55(7):993-1000.
8. Casarett D, Karlawish J, Morales K, Crowley R, Mirsch T, Asch DA. Improving the use of hospice services in nursing homes: a randomized controlled trial. *JAMA* 2005; 294(2):211-7.
9. Cohen LM, Ruthazer R, Germain MJ. Increasing hospice services for elderly patients maintained with hemodialysis. *J Palliative Med* 2010; 13(7):847-54.
10. Dudgeon DJ, Knott C, Eichholz M *et al.* Palliative Care Integration Project (PCIP) quality improvement strategy evaluation. *J Pain Symptom Manage* 2008; 35(6):573-82.
11. Engelhardt JB, McClive-Reed KP, Toseland RW, Smith TL, Larson DG, Tobin DR. Effects of a program for coordinated care of advanced illness on patients, surrogates, and healthcare costs: a randomized trial. *Am J Managed Care* 2006; 12(2):93-100.
12. Hughes SL, Weaver FM, Giobbie-Hurder A *et al.* Effectiveness of team-managed home-based primary care: a randomized multicenter trial. *JAMA : the Journal of the American Medical Association* 2000; 284(22):2877-85.
13. - Jordhoy MS, - Fayers P, - Saltnes T, - Ahlner-Elmqvist M, - Jannert M, - Kaasa S. - A Palliative-Care Intervention and Death at Home: a Cluster Randomized Trial. - *Lancet* - 2000/09/09/2000 Sep 9; - 356(- 9233):- 888, - 893.
14. Jordhoy MS, Fayers P, Loge JH, Ahlner-Elmqvist M, Kaasa S. Quality of life in palliative cancer care: results from a cluster randomized trial. *J Clinical Oncology* 2001; 19(18):3884-94.
15. - Ringdal GI, - Jordhoy MS, - Ringdal K, - Kaasa S. - The First Year of Grief and Bereavement in Close Family Members to Individuals Who Have Died of Cancer. - *Palliative Medicine* - 2001/03//; - 15(- 2):- 91, - 105.
16. - Ringdal GI, - Jordhoy MS, - Kaasa S. - Family Satisfaction With End-of-Life Care for Cancer Patients in a Cluster Randomized Trial. - *Journal of Pain & Symptom Management* - 2002/07//; - 24(- 1):- 53, - 63.
17. Luhrs CA, Meghani S, Homel P *et al.* Pilot of a pathway to improve the care of imminently dying oncology inpatients in a Veterans Affairs Medical Center. *J Pain Symptom Manage* 2005; 29(6):544-51.
18. McMillan SC, Small BJ, Haley WE. Improving hospice outcomes through systematic assessment: a clinical trial. *Cancer Nursing* 2011; 34(2):89-97.
19. Mitchell GK, Del Mar CB, O'Rourke PK, Clavarino AM. Do case conferences between general practitioners and specialist palliative care services improve quality of life? A randomized controlled trial (ISRCTN 52269003). *Palliative Medicine* 2008; 22(8):904-12.
20. Moore S, Corner J, Haviland J *et al.* Nurse led follow up and conventional medical follow up in management of patients with lung cancer: randomized trial. *BMJ* 2002; 325(7373):1145.
21. Pantilat SZ, O'Riordan DL, Dibble SL, Landefeld CS. Hospital-based palliative medicine consultation: a randomized controlled trial. *Arch Intern Med* 2010; 170(22):2038-40.
22. Rabow MW, Dibble SL, Pantilat SZ, McPhee SJ. The comprehensive care team: a controlled trial of outpatient palliative medicine consultation. *Arch Intern Med* 2004; 164(1):83-91.
23. Temel JS, Greer JA, Muzikansky A *et al.* Early palliative care for patients with metastatic non-small-cell lung cancer. *The New England Journal of Medicine* 2010; 363(8):733-42.
24. van der Heide A, Veerbeek L, Swart S, van der Rijt C, van der Maas PJ, van Zuylen L. End-of-life decision making for cancer patients in different clinical settings and the impact of the LCP. *J Pain Symptom Manage* 2010; 39(1):33-43.
25. Woo J, Cheng JO, Lee J *et al.* Evaluation of a continuous quality improvement initiative for end-of-life care for older non-cancer patients. *J Am Med Dir Assoc* 2011; 12(2):105-13.

Evidence Table 4. Outcomes reported in studies addressing continuity, coordination of care, and transitions

Author, Year	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information	
Aiken, 2006 ¹	QOL	SF 36	192	None		6/8 measurements=N S		Difficulties with recruitment led to smaller enrollment than planned; Significant attrition (1/3 died or went to hospice in 1st 3 months) (only 25% of control group still participating at end of data collection); reported that COPD showed stronger response	
	Patient symptoms	Memorial Symptom Assessment Scale				Frequency and severity=NS			
	LOS					LOS=NS			
	Other	AD			71% vs. 65% p =0.05, OR 4.47, [CI: 1.10, 18.18]				Statistics not reported at time 6 where it would be NS
	Quality of care measures	Self management and knowledge				4/6 and 3/6 measurements at all time point=NS			
Badger, 2009 ²	Other	Death in the care home	437	None	81% before vs. 88.5% after, p<0.001			Evidence that the GSF was implemented in the care homes; Crisis events, advanced care plan in place, access to as required medications, last days of life care pathway, written information to family all significantly Improved	
	Other	Crisis hospitalization			38% vs. 26% after, p=0.001				

Evidence Table 4. Outcomes reported in studies addressing continuity, coordination of care, and transitions(continued)

Author, Year	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Bailey, 2005 ³	Other	DNR orders	203	None	61.9% vs. 85.1% (P=□.001)		Significant increase in documented use of restraints	This intervention went beyond ordinary education to facilitate change in staff practice patterns by providing tools (pocket card reminders, supportive policy changes, and a structured order set) to reinforce and guide care plans; concurrent implementation of other restraint policies may have caused restraint finding; also significant increase in documentation of care plans
	Other	Location of death				Patients dying in ICU		
	Other	Opioid orders at death			57.1% vs. 83.2% (P=□.001).			
	Other	Nasogastric tube at death				NS		
	Quality of care measures	Symptom documentation			1.7 (SD 2.1) vs. 4.4 (SD 2.7) (P=□.001)			
Bakitas, 1077 ⁴	QOL	Functional Assessment of Chronic Illness Therapy for Palliative Care	322	None	Intervention: higher QOL (mean [SE], 4.6 [2]; P=.02);		None	
	Patient symptoms	ESAS				Symptom intensity		
	Resource use					Hospital LOS, ICU LOS, # ER visits; survival		
	Psycho-social symptoms and support	CES-D				Mood: CES-D score, (mean[SE], -1.8 [0.81]; p=0.02)		

Evidence Table 4. Outcomes reported in studies addressing continuity, coordination of care, and transitions (continued)

Author, Year	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Bookbinder, 2005 ⁵	Symptoms assessed, problematic symptoms identified, # interventions, # inpatient consultations	Chart Abstraction Tool (CAT) - indices on admission/referral data, end-of-life decision making, symptom assessment/management, death, and resource utilization data	257	None		Number of symptoms assessed increased significantly in both comparison and study units.(Only within group comparisons)		Pilot testing. Some CAT indices increased significantly on all units - possible indication of diffusion of education/cultural change despite not implementing the pathway; other changes were significant in the inpatient palliative care unit but not in the geriatrics or oncology units - 100% of patients in the inpatient palliative care unit but only 33% of patients in the latter 2 units were placed on the pathway; non-VA setting
Brumley, 2003 ⁶	Satisfaction	Reid-Gundlach satisfaction of service	300	None		Within-group comparison= useless		Lowered service use and costs while maintaining satisfaction.
	Service use				F=13.953; p = 0.001			
	Cost				\$7,990 vs.\$14,570 p<.001			
	Satisfaction	Reid-Gundlach satisfaction of service	297	None	At 30 days OR=3.37, 95% CI=1.42–8.10; P=.006 and 90 days,(OR=3.37, 95% CI=0.65–4.96; P=.03)	At 60 days		

Evidence Table 4. Outcomes reported in studies addressing continuity, coordination of care, and transitions (continued)

Author, Year	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Brumley, 2003 ⁶ (continued)	Service use				ED visits: 20% vs. 33% p=0.01, hospitalizations: 36% vs. 59% p<.001. LOS p<.001			
	Cost	Overall costs			P=.03; 95% CI= \$12,411 to \$780			
Casarett, 2005 ⁷	Hospice enrollment	Enrollment within 30 days	205	None reported in results	21/107 [20%] vs. 1/98 [1%]; P= .001; 95% confidence interval [CI], 1.34-5.19)(number needed to treat [NNT]=5).			Also significantly different - hospice enrollment within 6 months, # of acute care admissions, and days spent in an acute care setting
	Quality of care measures	Toolkit After death Survey			4.3(SD 1.01) vs. 2.2 (1.47), p=0.01			
	Hospice enrollment	At time of death				Enrolled in hospice at time of death		
	LOS				LOS			
	Location of death					The resident died where he/she would have wanted		
Cohen, 2010 ⁸	Use of hospice services		133	None		Use of hospice services	None	In a subgroup of patients >65 the primary outcome of utilization of hospice services improved significantly (p<0.05)
	Discontinuation of dialysis					Discontinuation of dialysis		

Evidence Table 4. Outcomes reported in studies addressing continuity, coordination of care, and transitions (continued)

Author, Year	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Dudgeon, 2008 ⁹	Patient symptoms	Edmonton Symptom assessment scale ,	200	None		ESAS(NS), Symptom score(NS)	None	The study showed minimal improvements. Challenge: conducted during SARS. Lessons: takes longer to implement projects than anticipated, standardized documentation should be in place prior to initiating such a project
	Satisfaction	FAMCARE Scale,				FAMCARE(NS),		
	Frequency and duration of hospital stay	Chart Audits,			AC admission (p<0.001) 476/513 patients (92.8%) in 2001 vs 497/570 (87.2%) in 2002, 498/579 in 2003 (86.0%)	Death(NS), Chart Audits (3/5=NS),		
	Psycho-social symptoms and support; Caregiver burden	Care-giver assessment				CRA(NS)		
	Quality of care measures; Location of death,					Location of death (NS),		

Evidence Table 4. Outcomes reported in studies addressing continuity, coordination of care, and transitions (continued)

Author, Year	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Engelhardt, 2006 ¹⁰	Satisfaction	EOL Family interview, Likert scale,	275	None	Patient satisfaction (p=0.03, effect size=0.18),	Attitudes about participation in treatment decisions (NS),	None	Don't report all caregiver outcomes
	Quality of care measures; Documentation,				Problems reported by surrogates(p=0.03, effect size=0.39),			
	AD and DNR , cost				AD (p=0.01)	Cost, DNR		
Hughes, 2000 ¹¹	QOL	MOS SF-36	188 patients, 289 caregivers	None	6/8 scales improved for both patients and caregivers			Abstracted the results for the terminally ill group only; utilization not reported separately for this group; Intervention is not described in detail
	Satisfaction ; patient	Ware Satisfaction with Care scales				6/6 outcomes=NS		
	Functional status	Barthel score				NS		
	Psychosocial symptoms and support; Caregiver burden	Montgomery scale,				NS		
	Readmission					NS		
	Satisfaction ; Caregiver					5/6 scales improved		

Evidence Table 4. Outcomes reported in studies addressing continuity, coordination of care, and transitions (continued)

Author, Year	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Luhrs, 2005 ¹²	Quality of care measures	EOL-CAT	39	None	3/5 Interventions on last day decreased significantly, more patients were identified as dying and comfort care plan increased significantly, significantly more symptoms assessed and managed (0.5 comparison vs. 1.0 intervention, p=.02)		Increased LOS in PCAD group	Same intervention in a VA setting acute care oncology unit. QI interdisciplinary team and education of staff assisted in implementation; commitment of leadership and involvement of attending physicians, as well as discussion at monthly staff meetings; 64.7% of patients in the intervention period who died were placed on PCAD. No change in practice in a concurrently measured group on another unit. Family satisfaction was collected but response rate too low for analysis
Jordhoy, 2000 ¹³ , 2000 ¹⁴ , Ringdal 2002 ¹⁵ , 2001 ¹⁶	Quality of care measures; Place of death	Home or institution	434	Not addressed	More frequently home for intervention group (25%) than control group (15%), p=0.02 adjusted	No difference in survival		PC intervention allowed more pts to die at home, however no increase in overall proportion of time spent at home.
	Quality of care measures; % of nursing home deaths				Less frequent in intervention group (9%) than control group (21) p=0.01			PC led to less use of nursing homes, but in Norway nursing home beds are sometimes used as substitutes for inpatient hospital beds

Evidence Table 4. Outcomes reported in studies addressing continuity, coordination of care, and transitions (continued)

Author, Year	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Jordhoy, 2000 ¹³ , 2000 ¹⁴ , Ringdal 2002 ¹⁵ , 2001 ¹⁶ (continued)	Days spent in hospital in the last month of life	Days in hospital				NS		
	% of hospital deaths					NS		Significantly less time spent in NH but % of admissions not different
	QOL	European Organization for Research and Treatment of Cancer Quality of Life-C30 EORTC QLQ-C30				NS		Possible reasons - conventional care is generally good for only marginal improvements (some control groups also focused on palliative care); also trial started just after the PMU was opened so may not have been optimally skilled; strongly based on community service with limited palliative care competence; study in Norway
	Other	Impact of Event Scales IES-measures how pts react to stressful events like having cancer				NS for psychological distress, pain, physical and emotional functioning p>.1		

Evidence Table 4. Outcomes reported in studies addressing continuity, coordination of care, and transitions (continued)

Author, Year	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Ringdal, 2002 ¹⁵	Family members satisfaction with care	FAMCARE scale-looks at close family members satisfaction with care	182	Not addressed	Intervention group "reported lowest scores, that is highest satisfaction with care on all items except item 6 "availability of hospital bed, and item 14 times required to make diagnosis. In total 11 of 18 items were significant			Children of the deceased were least satisfied with care p<.001, males were more satisfied with care than females p<.015, "results should be interpreted with caution. Most close family members were aware that the trial was connected to the PMU and may have been reluctant to give criticism." More pts in the intervention group died at home than in the control group.
Ringdal, 2001 ¹⁶	Grief	Texas Revised Inventory of F=Grief-TRIG	183	Not addressed		NS differences in grief reactions between the family members of the two groups at any point in time.		"Attrition caused by refusal and withdrawal findings may not be representative for the two groups (intervention and control) and should be interpreted with caution" Attrition rate was higher in the control group
Mcmillan, 2011 ¹⁷	QOL	HQLI 14		None		NS		
	Patient symptoms	MSAS				NS		
		CES-D			Estimate - 0.03, SE 0.01, p=0.02			
		CES-D				NS		

Evidence Table 4. Outcomes reported in studies addressing continuity, coordination of care, and transitions (continued)

Author, Year	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Mitchell, 2008 ¹⁸		Assessment of Quality of life at the End of Life	159	None		NS		
		Mcgill Quality of Life Questionnaire				NS		
	QOL; At 3 weeks	Subjective Wellbeing Scale				NS		
	Career burden	Caregiver Reaction Assessment				Most time points =NS		
Moore, 2002 ¹⁹	QOL	European Organization for Research and Treatment of Cancer's core questionnaire	202	None		13/14 items are NS		
	Satisfaction ; Patient				5/5 items p>0.05			
	Survival					NS		
	Cost					NS		
	Use of service				Fewer admission to hospitals, more died at home		11/16 items are NS	

Evidence Table 4. Outcomes reported in studies addressing continuity, coordination of care, and transitions (continued)

Author, Year	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Pantilat, 2010 ²⁰	Pain scores	Scoring from 1-10	107	None		NS		Reasons for ineffectiveness may have included - physician only-based intervention rather than multidisciplinary, and intervening on chronically ill patients not otherwise referred for palliative care
	Patient symptoms; Anxiety	Scoring from 1-10				NS		
	Patient symptoms; Dyspnea	Scoring from 1-10				NS		
	Quality of care measures; Care, Preferences, Prognosis, and Spiritual Care					NS		
Rabow, 2004 ²¹	QOL	Multidimensional Quality of Life Scale–Cancer Version	90	None		NS		Most effective in improving outcomes that the team could influence directly, via provision of services, education, and support.
	Pain scores	Brief Pain Inventory				NS		
	Patient symptoms; Depression /Anxiety	CES-D/Profile of Mood States				NS		
	Other	Spiritual Well-Being Scale			Improved 7.5 vs. 1.5: p=0.05			

Evidence Table 4. Outcomes reported in studies addressing continuity, coordination of care, and transitions (continued)

Author, Year	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information			
Rabow, 2004 ²¹ (continued)	Satisfaction	Group Health Association of America Consumer Satisfaction Survey				NS					
	Patient symptoms; Dyspnea				Reporting of any Dyspnea: OR=6.07; 95% CI= 1.04-35.56						
	Costs					NS					
	Total hospital days					NS					
V.d. Heide, 2010 ²²			298	None		DNR agreements, options of last resort discussed		Differences in end-of-life medication use with use of the LCP			
Woo, 2011 ²³	Patient symptoms	Symptom checklist	169	None	Pain improved OR=0.25, CI=0.13-0.52, p<0.001	18/20Symptoms =NS		Hong Kong; used PDSA, developed own care pathway and other forms; communication skills workshops in addition to extensive seminars; revision of intervention based on feedback			
	QOL; Caregiver	Cost of care Index								NS	
	QOL; Patient	Mc Gill QOL Questionnaire								Not reported	
	Satisfaction ; Patient (caregiver-reported)	10 point scale								7.54pre vs. 8.24 post, p=0.029	
	QOL; Caregiver	SF-12									NS

Evidence Table 4. Outcomes reported in studies addressing continuity, coordination of care, and transitions (continued)

Author, Year	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Woo, 2011 ²³ (continued)	Service use	ER admissions, LOS, X-rays, Blood tests			Significantly less acute care admissions, LOS, X-rays, blood tests	ER admissions, Non acute care admissions		
	Satisfaction ; Caregiver	10 point scale			7.8 pre vs. 8.56 post, p=0.017			
	Distress	Chinese Death Anxiety Inventory				Not reported for patients		
Temel, 2010 ²⁴	QOL	Trial Outcome Index (TOI)- sum of scores on the Lung Cancer Subscale and the physical well-being and functional well-being subscales of the Functional Assessment of Cancer Therapy–Lung Scale	151	African American (4%), Asian (1%), Hispanic (1%)	TOI Control 53.0+/- 11.5- vs. intervention 59.0 +/- 11.6 (P = 0.009) 95%CI 1.5-10.4). Effect size 0.52; FACT-L and LCS also statistically significantly different		None	Average # of palliative care visits was 4; 14% in control group had palliative care - all 1-2 visits; duration, 11 days in intervention group vs. 4 days in control group (P = 0.09) - insufficient sample size for statistics on other indicators, such as chemotherapy, but rates were lower in intervention group/ Highly-specialized academic center and advanced palliative care program.

Evidence Table 4. Outcomes reported in studies addressing continuity, coordination of care, and transitions (continued)

Author, Year	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Temel, 2010 ²⁴ (continued)	Distress; Mood, patient depressive symptoms	Hospital Anxiety and Depression Scale and the Patient Health Questionnaire 9			Fewer depressive symptoms in Intervention 16% vs control 38%, (P = 0.01) on HADS-D; also statistically significant for PHQ-9			
	Health care use	Overall for those who died, all: chemotherapy, ER visits, any admissions until death			Fewer received overall aggressive end-of-life care in intervention group 33% vs. Control 54% (P =0.05)	All: chemotherapy, ER visits, any admissions until death		
	Survival				Longer median survival in intervention group 11.6 months vs. Control 8.9 months (P = 0.02)			

AD; Advanced Directives; AQEL; Assessment of Quality of life at the End of Life; CAT; Chart Abstraction Toll; CCCI; Cost of care Index ; CES-D; Center for Epidemiologic Studies Depression Scale; COPD- ; Chronic Obstructive Pulmonary Airway Disease; CRA; Care Giver Assessment; DNR; Do Not Resuscitate; EOL; End of Life; EORTC; European Organization for Research and Treatment of Cancer's core; ER; Emergency Room; ESAS; Edmonton Symptom assessment scale; FACT-L; Functional Assessment of Cancer Therapy–Lung; GSF; Gold Standard Framework; HADS-D; Hospital Anxiety and Depression Scale; ICU; Intensive Care Unit; LCS; Lung Cancer Scale; LOS; Length of

Stay; NS; Not Significant; PHQ; Patient Health Questionnaire; PHQ-9; Patient Health Questionnaire 9; QOL; Quality of Life; SCL; Symptom Checklist; SE; Standard Error; SF; Significant Finding;

Evidence Table 4. Reference List

1. Aiken LS, Butner J, Lockhart CA, Volk-Craft BE, Hamilton G, Williams FG. Outcome evaluation of a randomized trial of the Phoenix Care intervention: program of case management and coordinated care for the seriously chronically ill. *J Palliative Med* 2006; 9(1):111-26.
2. Badger F, Clifford C, Hewison A, Thomas K. An evaluation of the implementation of a program to improve end-of-life care in nursing homes. *Palliative Med* 2009; 23(6):502-11.
3. Bailey FA, Burgio KL, Woodby LL *et al.* Improving processes of hospital care during the last hours of life. *Arch Intern Med* 2005; 165(15):1722-7.
4. Geiger TM, Miedema BW, Geana MV, Thaler K, Rangnekar NJ, Cameron GT. Improving rates for screening colonoscopy: Analysis of the health information national trends survey (HINTS I) data. *Surgical Endoscopy* 2008; 22(2):527-33.
5. Bookbinder M, Blank AE, Arney E *et al.* Improving end-of-life care: development and pilot-test of a clinical pathway. *J Pain Symptom Manage* 2005; 29(6):529-43.
6. Brumley RD, Enguidanos S, Cherin DA. Effectiveness of a home-based palliative care program for end-of-life. *J Palliative Med* 2003; 6(5):715-24.
7. Casarett D, Karlawish J, Morales K, Crowley R, Mirsch T, Asch DA. Improving the use of hospice services in nursing homes: a randomized controlled trial. *JAMA* 2005; 294(2):211-7.
8. Cohen LM, Ruthazer R, Germain MJ. Increasing hospice services for elderly patients maintained with hemodialysis. *J Palliative Med* 2010; 13(7):847-54.
9. Dudgeon DJ, Knott C, Eichholz M *et al.* Palliative Care Integration Project (PCIP) quality improvement strategy evaluation. *J Pain Symptom Manage* 2008; 35(6):573-82.
10. Engelhardt JB, McClive-Reed KP, Toseland RW, Smith TL, Larson DG, Tobin DR. Effects of a program for coordinated care of advanced illness on patients, surrogates, and healthcare costs: a randomized trial. *Am J Managed Care* 2006; 12(2):93-100.
11. Hughes SL, Weaver FM, Giobbie-Hurder A *et al.* Effectiveness of team-managed home-based primary care: a randomized multicenter trial. *JAMA : the Journal of the American Medical Association* 2000; 284(22):2877-85.
12. Luhrs CA, Meghani S, Homel P *et al.* Pilot of a pathway to improve the care of imminently dying oncology inpatients in a Veterans Affairs Medical Center. *J Pain Symptom Manage* 2005; 29(6):544-51.
13. - Jordhoy MS, - Fayers P, - Saltnes T, - Ahlner-Elmqvist M, - Jannert M, - Kaasa S. - A Palliative-Care Intervention and Death at Home: a Cluster Randomized Trial. - *Lancet* - 2000/09/09/2000 Sep 9; - 356(- 9233):- 888, - 893.
14. Jordhoy MS, Fayers P, Loge JH, Ahlner-Elmqvist M, Kaasa S. Quality of life in palliative cancer care: results from a cluster randomized trial. *J Clinical Oncology* 2001; 19(18):3884-94.
15. - Ringdal GI, - Jordhoy MS, - Kaasa S. - Family Satisfaction With End-of-Life Care for Cancer Patients in a Cluster Randomized Trial. - *Journal of Pain & Symptom Management* - 2002/07//; - 24(- 1):- 53, - 63.
16. - Ringdal GI, - Jordhoy MS, - Ringdal K, - Kaasa S. - The First Year of Grief and Bereavement in Close Family Members to Individuals Who Have Died of Cancer. - *Palliative Medicine* - 2001/03//; - 15(- 2):- 91, - 105.
17. McMillan SC, Small BJ, Haley WE. Improving hospice outcomes through systematic assessment: a clinical trial. *Cancer Nursing* 2011; 34(2):89-97.
18. Mitchell GK, Del Mar CB, O'Rourke PK, Clavarino AM. Do case conferences between general practitioners and specialist palliative care services improve quality of life? A randomised controlled trial (ISRCTN 52269003). *Palliative Medicine* 2008; 22(8):904-12.
19. Moore S, Corner J, Haviland J *et al.* Nurse led follow up and conventional medical follow up in management of patients with lung cancer: randomised trial. *BMJ* 2002; 325(7373):1145.
20. Pantilat SZ, O'Riordan DL, Dibble SL, Landefeld CS. Hospital-based palliative medicine consultation: a randomized controlled trial. *Arch Intern Med* 2010; 170(22):2038-40.
21. Rabow MW, Dibble SL, Pantilat SZ, McPhee SJ. The comprehensive care team: a controlled trial of outpatient palliative medicine consultation. *Arch Intern Med* 2004; 164(1):83-91.
22. van der Heide A, Veerbeek L, Swart S, van der Rijt C, van der Maas PJ, van Zuylen L. End-of-life decision making for cancer patients in different clinical settings and the impact of the LCP. *J Pain Symptom Manage* 2010; 39(1):33-43.
23. Woo J, Cheng JO, Lee J *et al.* Evaluation of a continuous quality improvement initiative for end-of-life care for older non-cancer patients. *J Am Med Dir Assoc* 2011; 12(2):105-13.
24. Temel JS, Greer JA, Muzikansky A *et al.* Early palliative care for patients with metastatic non-small-cell lung cancer. *The New England Journal of Medicine* 2010; 363(8):733-42.

Evidence Table 5. Risk of bias assessment of studies addressing continuity, coordination of care, and transitions

Author, year	Sequence generation	Allocation concealment	Binding of personnel (short-term outcomes)	Blinding of outcome assessors (short-term outcomes)	Binding of personnel (long-term outcomes)	Blinding of outcome assessors (long-term outcomes)	Incomplete outcome data (short-term outcomes)	Incomplete outcome data (long-term outcomes)	Selective outcome reporting	Other sources of bias
Aiken, 2006 ¹	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Unclear	Yes
Badger, 2009 ²	No	No	No	No	No	No	No	No	Unclear	Yes
Bailey, 2005 ³	No	No	No	No	No	No	Yes	Yes	Yes	Yes
Bakitas, 2009 ⁴	Yes	Unclear	No	Unclear	No	Unclear	Yes	Yes	Yes	Yes
Bookbinder, 2005 ⁵	No	No	No	No	No	No	Yes	Yes	No	No
Brumley, 2003 ⁶	No	No	No	Yes	No	Yes	Unclear	Unclear	Yes	Yes
Brumley, 2007 ⁷	Yes	Yes	No	Yes	No	Yes	Yes	Yes	No	No
Casarett, 2005 ⁸	Yes	Yes	No	No	No	No	Yes	Yes	Yes	Yes
Cohen, 2010 ⁹	No	No	No	No	No	No	Unclear	Unclear	Yes	Yes
Dudgeon, 2008 ¹⁰	No	No	No	No	No	No	Unclear	Unclear	Yes	Yes
Engelhardt, 2006 ¹¹	Yes	Unclear	No		No	No	No	No	No	Yes
Hughes, 2000 ¹²	Yes	Unclear	No	No	No	No	Yes	Yes	Yes	Yes
Jordhoy, 2000 ¹³ , 2001 ¹⁴ , Ringdal, 2001 ¹⁵ , 2002 ¹⁶	Unclear	Unclear	No	No	No	No	Yes	No	Yes	Yes
Luhrs, 2005 ¹⁷	No	No	No	No	No		Yes	Yes	Yes	Yes
McMillan, 2011 ¹⁸	Unclear	No	No	No	No	No	Unclear	Unclear	Yes	Yes
Mitchell, 2008 ¹⁹	Yes	Yes	No	No	No	No	Yes	Yes	No	No
Moore, 2002 ²⁰	Yes	Yes	No	No	No	No	Unclear	Unclear	Yes	Yes
Pantilat, 2010 ²¹	Unclear	No	No	Yes	No	Yes	Unclear	Unclear	Yes	No
Rabow, 2004 ²²	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes

Evidence Table 5. Risk of bias assessment of studies addressing continuity, coordination of care, and transitions

Author, year	Sequence generation	Allocation concealment	Binding of personnel (short-term outcomes)	Blinding of outcome assessors (short-term outcomes)	Binding of personnel (long-term outcomes)	Blinding of outcome assessors (long-term outcomes)	Incomplete outcome data (short-term outcomes)	Incomplete outcome data (long-term outcomes)	Selective outcome reporting	Other sources of bias
Temel, 2010 ²³	Unclear	Unclear	No	No	No	No	Yes	Yes	No	Yes
Van der Heide, 2010 ²⁴	No	No	No	No	No	No	Unclear	Unclear	Yes	Yes
Woo, 2011 ²⁵	No	No	No	No	No	No	Unclear	Unclear	No	Yes

Evidence Table 5. Reference list

1. Aiken LS, Butner J, Lockhart CA, Volk-Craft BE, Hamilton G, Williams FG. Outcome evaluation of a randomized trial of the Phoenix Care intervention: program of case management and coordinated care for the seriously chronically ill. *J Palliative Med* 2006; 9(1):111-26.
2. Badger F, Clifford C, Hewison A, Thomas K. An evaluation of the implementation of a program to improve end-of-life care in nursing homes. *Palliative Med* 2009; 23(6):502-11.
3. Bailey FA, Burgio KL, Woodby LL *et al.* Improving processes of hospital care during the last hours of life. *Arch Intern Med* 2005; 165(15):1722-7.
4. Bakitas M, Lyons KD, Hegel MT *et al.* Effects of a palliative care intervention on clinical outcomes in patients with advanced cancer: the Project ENABLE II randomized controlled trial. *JAMA* 2009; 302(7):741-9.
5. Bookbinder M, Blank AE, Arney E *et al.* Improving end-of-life care: development and pilot-test of a clinical pathway. *J Pain Symptom Manage* 2005; 29(6):529-43.
6. Brumley RD, Enguidanos S, Cherin DA. Effectiveness of a home-based palliative care program for end-of-life. *J Palliative Med* 2003; 6(5):715-24.
7. Brumley R, Enguidanos S, Jamison P *et al.* Increased satisfaction with care and lower costs: results of a randomized trial of in-home palliative care. *J Am Geriatric Soc* 2007; 55(7):993-1000.
8. Casarett D, Karlawish J, Morales K, Crowley R, Mirsch T, Asch DA. Improving the use of hospice services in nursing homes: a randomized controlled trial. *JAMA* 2005; 294(2):211-7.
9. Cohen LM, Ruthazer R, Germain MJ. Increasing hospice services for elderly patients maintained with hemodialysis. *J Palliative Med* 2010; 13(7):847-54.
10. Dudgeon DJ, Knott C, Eichholz M *et al.* Palliative Care Integration Project (PCIP) quality improvement strategy evaluation. *J Pain Symptom Manage* 2008; 35(6):573-82.
11. Engelhardt JB, McClive-Reed KP, Toseland RW, Smith TL, Larson DG, Tobin DR. Effects of a program for coordinated care of advanced illness on patients, surrogates, and healthcare costs: a randomized trial. *Am J Managed Care* 2006; 12(2):93-100.
12. Hughes SL, Weaver FM, Giobbie-Hurder A *et al.* Effectiveness of team-managed home-based primary care: a randomized multicenter trial. *JAMA: the Journal of the American Medical Association* 2000; 284(22):2877-85.
13. - Jordhoy MS, - Fayers P, - Saltnes T, - Ahlner-Elmqvist M, - Jannert M, - Kaasa S. - A Palliative-Care Intervention and Death at Home: a Cluster Randomized Trial. - *Lancet* - 2000/09/09/2000 Sep 9; - 356(- 9233):- 888, - 893.
14. Jordhoy MS, Fayers P, Loge JH, Ahlner-Elmqvist M, Kaasa S. Quality of life in palliative cancer care: results from a cluster randomized trial. *J Clinical Oncology* 2001; 19(18):3884-94.
15. Ringdal GI, Jordhoy MS, Ringdal K, Kaasa S. - The First Year of Grief and Bereavement in Close Family Members to Individuals Who Have Died of Cancer. - *Palliative Medicine* - 2001/03//; - 15(- 2):- 91, - 105.
16. Ringdal GI, Jordhoy MS, Kaasa S. - Family Satisfaction With End-of-Life Care for Cancer Patients in a Cluster Randomized Trial. - *Journal of Pain & Symptom Management* - 2002/07//; - 24(- 1):- 53, - 63.
17. Luhrs CA, Meghani S, Homel P *et al.* Pilot of a pathway to improve the care of imminently dying oncology inpatients in a Veterans Affairs Medical Center. *J Pain Symptom Manage* 2005; 29(6):544-51.
18. McMillan SC, Small BJ, Haley WE. Improving hospice outcomes through systematic assessment: a clinical trial. *Cancer Nursing* 2011; 34(2):89-97.
19. Mitchell GK, Del Mar CB, O'Rourke PK, Clavarino AM. Do case conferences between general practitioners and specialist palliative care services improve quality of life? A randomized controlled trial (ISRCTN 52269003). *Palliative Medicine* 2008; 22(8):904-12.
20. Moore S, Corner J, Haviland J *et al.* Nurse led follow up and conventional

- medical follow up in management of patients with lung cancer: randomized trial. *BMJ* 2002; 325(7373):1145.
21. Pantilat SZ, O'Riordan DL, Dibble SL, Landefeld CS. Hospital-based palliative medicine consultation: a randomized controlled trial. *Arch Intern Med* 2010; 170(22):2038-40.
 22. Rabow MW, Dibble SL, Pantilat SZ, McPhee SJ. The comprehensive care team: a controlled trial of outpatient palliative medicine consultation. *Arch Intern Med* 2004; 164(1):83-91.
 23. Temel JS, Greer JA, Muzikansky A *et al.* Early palliative care for patients with metastatic non-small-cell lung cancer. *The New England Journal of Medicine* 2010; 363(8):733-42.
 24. van der Heide A, Veerbeek L, Swart S, van der Rijt C, van der Maas PJ, van Zuylen L. End-of-life decision making for cancer patients in different clinical settings and the impact of the LCP. *J Pain Symptom Manage* 2010; 39(1):33-43.
 25. Woo J, Cheng JO, Lee J *et al.* Evaluation of a continuous quality improvement initiative for end-of-life care for older non-cancer patients. *J Am Med Dir Assoc* 2011; 12(2):105-13.

Evidence Table 6. Description of interventions for studies addressing pain

Author, year	Integrative vs. consultative
Aubin, 2006 ¹	Integrative: interacts with both
Borneman, 2008 ²	Combined: interacts with both
Borneman2010 ³	Integrative
Dalton, 2004 ⁴	Consultative: interacts with patient/family
Du Pen, 2000 ⁵	Combined: interacts with both
Fuchs-Lacelle, 2008 ⁶	Integrative
Given, 2002 ⁷	Integrative: interacts with patient/family
Keefe, 2005 ⁸	Consultative: interacts with patient/family
Kovach 2006 30572	Combined: interacts with both
Lovell, 2010 ⁹	Other/neither
Marinangeli, 2004 ¹⁰	Integrative
Miaskowski, 2004 ¹¹ , Miaskowski 2007 ¹²	Consultative: interacts with patient/family
Oliver, 2001 ¹³ ; Kalauokalani, 2007 ¹⁴	Consultative: interacts with patient/family
Syrjala, 2008 ¹⁵	Integrative
Van der Peet, 2004 ¹⁶	Consultative: interacts with both
Ward, 2000 ¹⁷	Integrative
Ward, 2008 ¹⁸	Consultative: interacts with patient/family
Wells, 2003 ¹⁹	Combined: interacts with both
Wilkie, 2010 ²⁰	Consultative: interacts with patient/family

Evidence Table 6. Reference list

1. Aubin M, Vezina L, Parent R *et al.* Impact of an educational program on pain management in patients with cancer living at home. *Oncology Nursing Forum* 2006; 33(6):1183-8.
2. Borneman T, Koczywas M, Cristea M, Reckamp K, Sun V, Ferrell B. An interdisciplinary care approach for integration of palliative care in lung cancer. *Clinical Lung Cancer* 2008; 9(6):352-60.
3. Borneman T, Koczywas M, Sun VC, Piper BF, Uman G, Ferrell B. Reducing patient barriers to pain and fatigue management. *J Pain Symptom Manage* 2010; 39(3):486-501.
4. Dalton JA, Keefe FJ, Carlson J, Youngblood R. Tailoring cognitive-behavioral treatment for cancer pain. *Pain Managing Nursing* 2004; 5(1):3-18.
5. Du Pen AR, Du Pen S, Hansberry J *et al.* An educational implementation of a cancer pain algorithm for ambulatory care. *Pain Managing Nursing* 2000; 1(4):116-28.
6. - Fuchs-Lacelle S, - Hadjistavropoulos T, - Lix L. - Pain Assessment as Intervention: a Study of Older Adults with Severe Dementia. - *Clinical Journal of Pain* - 2008/10//; - 24(- 8):- 697, - 707.
7. Given B, Given CW, McCorkle R *et al.* Pain and fatigue management: results of a nursing randomized clinical trial. *Oncology Nursing Forum* 2002; 29(6):949-56.
8. Keefe FJ, Ahles TA, Sutton L *et al.* Partner-guided cancer pain management

- at the end of life: a preliminary study. *J Pain Symptom Manage* 2005; 29(3):263-72.
9. Lovell MR, Forder PM, Stockler MR *et al.* A randomized controlled trial of a standardized educational intervention for patients with cancer pain. *J Pain Symptom Manage* 2010; 40(1):49-59.
 10. Marinangeli F, Ciccozzi A, Leonardis M *et al.* Use of strong opioids in advanced cancer pain: a randomized trial. *J Pain Symptom Manage* 2004; 27(5):409-16.
 11. Miaskowski C, Dodd M, West C *et al.* Randomized clinical trial of the effectiveness of a self-care intervention to improve cancer pain management. *J Clinical Oncology* 2004; 22(9):1713-20.
 12. Miaskowski C, Dodd M, West C *et al.* The use of a responder analysis to identify differences in patient outcomes following a self-care intervention to improve cancer pain management. *Pain* 2007; 129(1-2):55-63.
 13. Oliver JW, Kravitz RL, Kaplan SH, Meyers FJ. Individualized patient education and coaching to improve pain control among cancer outpatients. *Journal of Clinical Oncology: Official Journal of the American Society of Clinical Oncology* 2001; 19(8):2206-12.
 14. Kalauokalani D, Franks P, Oliver JW, Meyers FJ, Kravitz RL. Can patient coaching reduce racial/ethnic disparities in cancer pain control? Secondary analysis of a randomized controlled trial. *Pain Med* 2007; 8(1):17-24.
 15. Syrjala KL, Abrams JR, Polissar NL *et al.* Patient training in cancer pain management using integrated print and video materials: a multisite randomized controlled trial. *Pain* 2008; 135(1-2):175-86.
 16. van der Peet EH, van den Beuken-van Everdingen MH, Patijn J, Schouten HC, van Kleef M, Courtens AM. Randomized clinical trial of an intensive nursing-based pain education program for cancer outpatients suffering from pain. *Support Care Cancer* 2008.
 17. Ward S, Donovan HS, Owen B, Groesen E, Serlin R. An individualized intervention to overcome patient-related barriers to pain management in women with gynecologic cancers. *Research in Nursing & Health* 2000; 23(5):393-405.
 18. Ward S, Donovan H, Gunnarsdottir S, Serlin RC, Shapiro GR, Hughes S. A randomized trial of a representational intervention to decrease cancer pain (RIDcancerPain). *Health Psychology* 2008; 27(1):59-67.
 19. Wells N, Hepworth JT, Murphy BA, Wujcik D, Johnson R. Improving cancer pain management through patient and family education. *J Pain Symptom Manage* 2003; 25(4):344-56.
 20. Wilkie D, Berry D, Cain K *et al.* Effects of coaching patients with lung cancer to report cancer pain. *Western Journal of Nursing Research* 2010; 32(1):23-46.

Evidence Table 7. Description of quality improvement elements in studies addressing pain

Author, year	Facilitated relay of clinical data to providers?	Audit and feedback?	Provider education?	Patient/family/caregiver education?	Promotion of self-management ?	Patient/caregiver reminder system?	Organizational change?	Other?
Aubin, 2006 ¹	No	No	Yes	Yes	Yes	No	No	No
Borneman, 2008 ²	Yes	Yes	Yes	Yes	Yes	No	Yes	No
Borneman, 2010 ³	No	No	No	Yes	Yes	No	No	No
Dalton, 2004 ⁴	No	No	No	Yes	Yes	No	No	No
Du Pen, 2000 ⁵	No	No	Yes	No	No	No	No	No
Fuchs-Lacelle, 2008 ⁶	Yes	No	No	No	No	No	No	Yes
Given, 2002 ⁷	No	No	No	Yes	Yes	No	No	No
Keefe, 2005 ⁸	No	No	No	Yes	Yes	No	No	No
Kovach, 2006 ⁹	Yes	No	Yes	No	No	No	No	No
Lovell, 2010 ¹⁰	No	No	No	Yes	Yes	No	No	No
Marinangeli, 2004 ¹¹	Yes	No	No	No	No	No	No	No
Miaskowski, 2004 ¹² , Miaskowski 2007 ¹³	Yes	No	No	Yes	Yes	No	No	No
Oliver, 2001 ¹⁴ , Kalaoukalani, 2007 ¹⁵	No	No	No	Yes	Yes	No	No	No
Syrjala, 2008 ¹⁶	No	No	No	Yes	Yes	No	No	No
Van der Peet, 2004 ¹⁷	Yes	No	No	Yes	Yes	No	No	Yes
Ward, 2000 ¹⁸	No	No	No	Yes	Yes	No	No	No
Ward, 2008 ¹⁹	No	No	No	Yes	Yes	No	No	No
Wells, 2003 ²⁰	No	No	No	Yes	Yes	No	No	No
Wilkie, 2010 ²¹	No	No	No	Yes	Yes	Yes	No	No

Evidence Table 7. Reference list

1. Aubin M, Vezina L, Parent R *et al.* Impact of an educational program on pain management in patients with cancer living at home. *Oncology Nursing Forum* 2006; 33(6):1183-8.
2. Borneman T, Koczywas M, Cristea M, Reckamp K, Sun V, Ferrell B. An interdisciplinary care approach for integration of palliative care in lung cancer. *Clinical Lung Cancer* 2008; 9(6):352-60.
3. Borneman T, Koczywas M, Sun VC, Piper BF, Uman G, Ferrell B. Reducing patient barriers to pain and fatigue management. *J Pain Symptom Manage* 2010; 39(3):486-501.
4. Dalton JA, Keefe FJ, Carlson J, Youngblood R. Tailoring cognitive-

- behavioral treatment for cancer pain. *Pain Managing Nursing* 2004; 5(1):3-18.
5. Du Pen AR, Du Pen S, Hansberry J *et al.* An educational implementation of a cancer pain algorithm for ambulatory care. *Pain Managing Nursing* 2000; 1(4):116-28.
 6. Fuchs-Lacelle S, Hadjistavropoulos T, Lix L. - Pain Assessment as Intervention: a Study of Older Adults with Severe Dementia. - *Clinical Journal of Pain* - 2008/10//; - 24(- 8):- 697, - 707.
 7. Given B, Given CW, McCorkle R *et al.* Pain and fatigue management: results of a nursing randomized clinical trial. *Oncology Nursing Forum* 2002; 29(6):949-56.
 8. Keefe FJ, Ahles TA, Sutton L *et al.* Partner-guided cancer pain management at the end of life: a preliminary study. *J Pain Symptom Manage* 2005; 29(3):263-72.
 9. Kovach CR, Logan BR, Noonan PE *et al.* Effects of the Serial Trial Intervention on discomfort and behavior of nursing home residents with dementia. *American Journal of Alzheimer's disease and Other Dementias* 2006; 21(3):147-55.
 10. Lovell MR, Forder PM, Stockler MR *et al.* A randomized controlled trial of a standardized educational intervention for patients with cancer pain. *J Pain Symptom Manage* 2010; 40(1):49-59.
 11. Marinangeli F, Ciccozzi A, Leonardis M *et al.* Use of strong opioids in advanced cancer pain: a randomized trial. *J Pain Symptom Manage* 2004; 27(5):409-16.
 12. Miaskowski C, Dodd M, West C *et al.* Randomized clinical trial of the effectiveness of a self-care intervention to improve cancer pain management. *J Clinical Oncology* 2004; 22(9):1713-20.
 13. Miaskowski C, Dodd M, West C *et al.* The use of a responder analysis to identify differences in patient outcomes following a self-care intervention to improve cancer pain management. *Pain* 2007; 129(1-2):55-63.
 14. Oliver JW, Kravitz RL, Kaplan SH, Meyers FJ. Individualized patient education and coaching to improve pain control among cancer outpatients. *Journal of Clinical Oncology: Official Journal of the American Society of Clinical Oncology* 2001; 19(8):2206-12.
 15. Kalauokalani D, Franks P, Oliver JW, Meyers FJ, Kravitz RL. Can patient coaching reduce racial/ethnic disparities in cancer pain control? Secondary analysis of a randomized controlled trial. *Pain Med* 2007; 8(1):17-24.
 16. Syrjala KL, Abrams JR, Polissar NL *et al.* Patient training in cancer pain management using integrated print and video materials: a multisite randomized controlled trial. *Pain* 2008; 135(1-2):175-86.
 17. Van der Peet EH, van den Beuken-van Everdingen MH, Patijn J, Schouten HC, van Kleef M, Courtens AM. Randomized clinical trial of an intensive nursing-based pain education program for cancer outpatients suffering from pain. *Support Care Cancer* 2008.
 18. Ward S, Donovan HS, Owen B, Grosen E, Serlin R. An individualized intervention to overcome patient-related barriers to pain management in women with gynecologic cancers. *Research in Nursing & Health* 2000; 23(5):393-405.
 19. Ward S, Donovan H, Gunnarsdottir S, Serlin RC, Shapiro GR, Hughes S. A randomized trial of a representational intervention to decrease cancer pain (RIDcancerPain). *Health Psychology* 2008; 27(1):59-67.
 20. Wells N, Hepworth JT, Murphy BA, Wujcik D, Johnson R. Improving cancer pain management through patient and family education. *J Pain Symptom Manage* 2003; 25(4):344-56.
 21. Wilkie D, Berry D, Cain K *et al.* Effects of coaching patients with lung cancer to report cancer pain. *Western Journal of Nursing Research* 2010; 32(1):23-46.

Evidence Table 8. Outcomes reported in studies addressing pain

Author, year	Outcome measures	Measures	Sample size	Disparities	Outcomes: benefits. Significantly improved	Outcomes: benefits. Not significantly improved	Other key information
Aubin, 2006 ¹	Pain scores	BPI	80 patients, control: 27, intervention: 53		Average pain scores at baseline, two weeks and four weeks between the experimental (3.0, 2.1, 1.7) and control groups (2.4, 3.3, 2.4) were significantly different (p = 0.01)	Maximum pain scores were not significantly different over time for the experimental and control groups	
Borneman, 2008 ²	Pain scores	QOL scale/cancer patient tool,	46 patients, 18 in control, 28 in intervention		No statistically significant effects on outcomes of interest between experimental and control	Overall QOL, physical QOL, psychological QOL, spiritual QOL, social QOL, fatigue-related QOL, pain-related QOL all ns	
	Fatigue	Piper fatigue scale				Sensory fatigue, overall fatigue	
Borneman, 2010 ³	Pain scores	Treatment data	187 patients, 83 in control; 104 in intervention	Sample included 35% ethnic minorities		NS	
	Fatigue	Piper fatigue scale, barriers questionnaire, fatigue barriers scale, fatigue knowledge tool			Sensory fatigue dropped significantly at one and three months for the intervention group (baseline: 6.4; 1 month: 5.4; 3 months: 4.4), it did not change over time for the usual care group (baseline: 6.4; 1 month: 6.2; 3 months: 5.5), and this difference was statistically significant (p=0.025)		

Evidence Table 8. Outcomes reported in studies addressing pain (continued)

Author, year	Outcome measures	Measures	Sample size	Disparities	Outcomes: benefits. Significantly improved	Outcomes: benefits. Not significantly improved	Other key information
Dalton, 2004 ⁴	Pain scores	BPI	127 patients, standard cbt=43, profile tailored cbt (intervention) = 50, usual care = 34			6 month follow-up: of 10 components of BPI, only 1 statistically significant in each arm vs. usual care at p=0.04	High level of attrition; unable to abstract 1-month outcomes from study due to table formatting issue, despite contact with authors
	Distress	Symptom distress scale			6 months: 3/6 symptoms statistically significant for tailored intervention		
	Psychosocial symptoms	Profile of mood states				6 months: ns for tailored, 1/2 significant for standard	
	QOL	Sf-12				6 months: ns	
	Karnofsky performance status, pain goals					Ns	
Du pen, 2000 ^b	Pain scores	BPI	20 oncologists and 38 oncology nurses; 105 patients - 54 in intervention, 51 in control		Intervention group experienced a decrease in their mean level of usual pain on a scale of 0 to 10 from a baseline mean score of 3.6 (standard deviation [sd] =1.9) to a mean score of 2.8 (sd =1.9); patients treated by untrained physicians/nurses experienced a relatively flat trajectory in their level of usual pain over the 4 months of their treatment (mean =3.0, sd =2.0). The difference between the 2 groups was statistically significant(t = 2.0, p = .05)		

Evidence Table 8. Outcomes reported in studies addressing pain (continued)

Author, year	Outcome measures	Measures	Sample size	Disparities	Outcomes: benefits. Significantly improved	Outcomes: benefits. Not significantly improved	Other key information
Du pen, 2000 ^b (continued)	Opioid provider adherence scores (0 to 3 scale), neuropathic co-analgesic prescribing	Chart abstraction				NS	
	Overall adherence	Chart abstraction - aggregate score (tpa)			Statistically significant improvement in tpa in the trained group versus control group, as measured by slope scores (t = 2.1, p = .04).		
Fuchs-lacelle, 2008 ⁶	Nurse-assessed pain scores	Pain assessment checklist for seniors with limited ability to communicate	173, 89 in intervention, 84 in control			Longitudinal outcome: systematic pain assessment statistically changed the log expected rate of observable pain behaviors. More specifically, pain scores, as measured by the pacslac, showed a statistically significant decrease at the rate of 0.01 for each unit of time.	

Evidence Table 8. Outcomes reported in studies addressing pain (continued)

Author, year	Outcome measures	Measures	Sample size	Disparities	Outcomes: benefits. Significantly improved	Outcomes: benefits. Not significantly improved	Other key information
Fuchs-lacelle, 2008 ⁶ (continued)	Increased use of underused pain management medication	(medication quantification scale)				Longitudinal outcome: baseline (0.64, sd=2.07) for the experimental condition and (0.44, sd=1.65) for the control condition. At the end of the intervention, (0.98 (sd=2.12) for the experimental condition and (0.16, sd=0.82) for the control condition. (p=0.00)	
Given, 2002 ⁷	Pain scores	The symptom experience scale	113 patients 53 in intervention, 60 in control			Ns	
	Fatigue	The symptom experience scale				Ns	
Keefe, 2005 ⁸	Pain scores	BPI - usual pain and worst pain	78 patients, 41 in intervention, 37 in control			Ns	
	QOL,, caregiver strain, caregiver mood,					Ns	
Kovach, 2006 ⁹	Patient symptoms ; discomfort	Behave-ad	114 patients; 57 each in intervention and control			Ns	
		Discomfort-data			Significant intervention x time effect on discomfort-ad scores (p<0.001)		

Evidence Table 8. Outcomes reported in studies addressing pain (continued)

Author, year	Outcome measures	Measures	Sample size	Disparities	Outcomes: benefits. Significantly improved	Outcomes: benefits. Not significantly improved	Other key information
Lovell, 2010 ¹⁰	Pain scores	Wisconsin brief pain inventory	185 patients, 40 in standard care, 37 in booklet only group, 36 in video only group, 45 in booklet plus video group		There was a significant difference in the change in average pain score between the standard care group (mean: 0.02) and the booklet and video group (mean: 1.19; difference: 1.17 with 95% ci: 0.17, 2.17, p = 0.0214). Reductions in worst pain scores were significantly greater in the booklet and video group than in the standard care group (1.53 vs. 0.41; difference: 1.12 with 95% CI: 0.00, 2.23, p = 0.05).	Booklet versus standard care ns video versus standard care ns no significant differences for pain interference between the groups	There were marginal differences between standard care and booklet alone (p = 0.07) and standard care and video alone (p = 0.09) for average pain the presence of a partner increased the effect of any educational intervention on average pain and worst pain scores compared to those without partners (significant)
Lovell, 2010 ¹⁰	Anxiety/depression, QOL	Hospital anxiety and depression scale, uni-scale for global quality of life				Ns	
Marinangeli, 2004 ¹¹	Pain scores	Vas	92 patients, 44 in intervention, 48 in control		Intervention group significantly better than control group on pain scores (control - 4.98 +/- 1.26 vs. Intervention 4.23 +/- 1.36; p 0.007) and with greater decrease in pain from baseline (intervention -2.61, control -1.92, p=0.041).		

Evidence Table 8. Outcomes reported in studies addressing pain (continued)

Author, year	Outcome measures	Measures	Sample size	Disparities	Outcomes: benefits. Significantly improved	Outcomes: benefits. Not significantly improved	Other key information
Marinangeli, 2004 ¹¹ (continued)	QOL, performance status	Multidimensional questionnaire. Karnovsky performance status				NS	
	Side effects				Nausea as a side effect was significantly lower in the intervention group (315 episodes versus 437 episodes; p = 0.0001).	Vomiting, constipation, gastro-enteric bleeding, periods of mental confusion	
	Satisfaction				Intervention group significantly more satisfied with pain management (intervention 85.6% vs. Control 80.5%, p = 0.041),		
Miaskowski, 2004 ¹² and Miaskowski, 2007 ¹³	Pain scores; pain intensity	BPI	174 patients, intervention=93, control=81 (2004), 167; intervention=89, control=78 (2007)		For least pain, a significant group x time interaction (p< 0.0001) was found. For average pain, a significant group x time interaction (p<0.0001) and significant main effects by group (p=0.026) for worst pain, a significant group x time interaction (p< 0.0001) as well as significant main effects of group (p =.033) were found.	No significant difference for least pain scores between groups.	
	Pain interference	BPI				Ns	

Evidence Table 8. Outcomes reported in studies addressing pain (continued)

Author, year	Outcome measures	Measures	Sample size	Disparities	Outcomes: benefits. Significantly improved	Outcomes: benefits. Not significantly improved	Other key information
Miaskowski, 2004 ¹² and Miaskowski, 2007 ¹³ (continued)	Opioid intake, appropriate analgesia, mood state QOL	Nurse recorded analgesic intake and prescriptions, profile of mood states				Ns	
		SF-36			Only significant difference is on subscale for body pain, intervention = 39.6, control=46.8 (p=0.005)		
Oliver, 2001 ¹⁴ Kalauokalani, 2007 ¹⁵	Pain scores; average pain	BPI	67 patients, 34 in intervention, 33 in control		Controlling for pain at baseline average pain differed by -8.96 points on a 100 point scale between control and experimental groups (p<0.05)	When social factors are added to the model, this association fails to meet significance	
	Impairment due to pain and pain frequency	Pain effects subscale of the mos-paq				Functional impairment due to pain and pain frequency - no significant differences	

Evidence Table 8. Outcomes reported in studies addressing pain (continued)

Author, year	Outcome measures	Measures	Sample size	Disparities	Outcomes: benefits. Significantly improved	Outcomes: benefits. Not significantly improved	Other key information
Oliver, 2001 ¹⁴ Kalaoukalani, 2007 ¹⁵ (continued)			Minority patients: 8 in intervention, 7 in control	Regression analysis, adjusting for baseline pain, revealed a significant interaction between minority status (Latinos, Asians, blacks, other) and study group for BPI, indicating a greater effect of the intervention in minorities (interaction effect=-1.73, 95% ci=-0.06, -3.41, p=0.043);			

Evidence Table 8. Outcomes reported in studies addressing pain (continued)

Author, year	Outcome measures	Measures	Sample size	Disparities	Outcomes: benefits. Significantly improved	Outcomes: benefits. Not significantly improved	Other key information
Syrjala, 2008 ¹⁶	Pain scores	BPI	78 patients, 43 in intervention, 35 in control		Intervention group with better control of usual pain - differed by -.81 with intervention group having greater decrease in pain from baseline (p=0.03))	Group comparisons were not significant at 6-month time point.	
	Increased use of opioids	Patient interview and viewing medications by research nurses			Significant difference in opioid dose between intervention and control group (<0.001) with intervention group taking more morphine (0.31 in log10 of daily morphine dose)		The pain training effect on opioid use differed significantly, also, between those whose pain was due to treatment versus those whose pain was due to other etiology, primarily due to disease (p = .009)
	Patient symptoms	Memorial symptom assessment scale				NS	
Van der peet, 2004 ¹⁷	Pain scores	BPI	120 patients, 58 in intervention, 62 in control		Present pain score intervention group = 3.78 versus control group = 4.84 (p=0.02) at 4 weeks follow up	Difference between intervention and control group ns at 8 weeks follow up	Patients in the most pain (BPI -7 or higher) had the greatest benefit from the intervention - significant differences in pain were found between the intervention and control groups at t1 (p=0.00) and t2 (p=0.00) in patients with a baseline score of 7-10.

Evidence Table 8. Outcomes reported in studies addressing pain (continued)

Author, year	Outcome measures	Measures	Sample size	Disparities	Outcomes: benefits. Significantly improved	Outcomes: benefits. Not significantly improved	Other key information
Van der peet, 2004 ¹⁷	Depression/anxiety; Quality of Life, and non-pain symptoms	HADS				Not reported	
Ward, 2000 ¹⁸	Pain scores; pain intensity	BPI	43 patients, 21 in intervention, 22 in control			NS	
	Pain scores; pain interference	BPI interference scale, plus one additional item about caring for others				NS	
	Analgesic side effects scores, adequacy of analgesia, QOL	Medication side effect checklist. PMI, fact-g				NS	
Ward, 2008 ¹⁹	Pain scores; pain severity	BPI - worst, least, and pain now - aggregated to single score, also used one question from the total pain management quality dataset for "usual severity"	176 total patients, 92 in intervention, 84 in control			NS	
	Pain interference, analgesic use, QOL	BPI				NS	

Evidence Table 8. Outcomes reported in studies addressing pain (continued)

Author, year	Outcome measures	Measures	Sample size	Disparities	Outcomes: benefits. Significantly improved	Outcomes: benefits. Not significantly improved	Other key information
Wells, 2003 ²⁰	Pain scores; worst pain, average pain, pain interference, pain relief	BPI-SF	64 patients, 24 in standard care, 21 in hot line intervention, and 19 in weekly call intervention			NS	
	Analgesic use	PMI				NS	
Wilkie, 2010 ²¹	Pain scores	Mcgill pain questionnaire,	151 patients, 76 in intervention, 75 in control			NS except for 1 subscale	This intervention did statistically significantly improve pain communication by patients to providers (audio taped data): intervention improved reporting, but more than this is needed to change provider and patient behavior and improve pain
	Anxiety, depression, pain coping, pain prescriptions	State trait anxiety inventory, CES-D coping strategies questionnaire, PMI				NS	

BPI; Blood Pressure Index; MQS; Michigan Quality System; PMI; Pain Management Index; QOL; Quality of Life; SF; Significant Finding ; HADS; The Hospital Anxiety and Depression Scale; NS; Not Significant;

Evidence Table 8. Reference list

1. Aubin M, Vezina L, Parent R *et al.* Impact of an educational program on pain management in patients with cancer living at home. *Oncol Nurs Forum* 2006; 33(6):1183-8.
2. Borneman T, Koczywas M, Cristea M, Reckamp K, Sun V, Ferrell B. An interdisciplinary care approach for integration of palliative care in lung cancer. *Clin Lung Cancer* 2008; 9(6):352-60.
3. Borneman T, Koczywas M, Sun VC, Piper BF, Uman G, Ferrell B. Reducing patient barriers to pain and fatigue management. *J Pain Symptom Manage* 2010; 39(3):486-501.
4. Dalton JA, Keefe FJ, Carlson J, Youngblood R. Tailoring cognitive-behavioral treatment for cancer pain. *Pain Managed Nursing* 2004; 5(1):3-18.
5. Du Pen AR, Du Pen S, Hansberry J *et al.* An educational implementation of a cancer pain algorithm for ambulatory care. *Pain Managed Nursing* 2000; 1(4):116-28.
6. - Fuchs-Lacelle S, - Hadjistavropoulos T, - Lix L. - Pain Assessment as Intervention: a Study of Older Adults with Severe Dementia. - *Clinical Journal of Pain* - 2008/10//; - 24(- 8):- 697, - 707.
7. Given B, Given CW, McCorkle R *et al.* Pain and fatigue management: results of a nursing randomized clinical trial. *Oncology Nursing Forum* 2002; 29(6):949-56.
8. Keefe FJ, Ahles TA, Sutton L *et al.* Partner-guided cancer pain management at the end of life: a preliminary study. *J Pain Symptom Manage* 2005; 29(3):263-72.
9. Kovach CR, Logan BR, Noonan PE *et al.* Effects of the Serial Trial Intervention on discomfort and behavior of nursing home residents with dementia. *American Journal of Alzheimer's disease and Other Dementias* 2006; 21(3):147-55.
10. Lovell MR, Forder PM, Stockler MR *et al.* A randomized controlled trial of a standardized educational intervention for patients with cancer pain. *J Pain Symptom Manage* 2010; 40(1):49-59.
11. Marinangeli F, Ciccozzi A, Leonardis M *et al.* Use of strong opioids in advanced cancer pain: a randomized trial. *J Pain Symptom Manage* 2004; 27(5):409-16.
12. Miaskowski C, Dodd M, West C *et al.* Randomized clinical trial of the effectiveness of a self-care intervention to improve cancer pain management. *J Clinical Oncology* 2004; 22(9):1713-20.
13. Miaskowski C, Dodd M, West C *et al.* The use of a responder analysis to identify differences in patient outcomes following a self-care intervention to improve cancer pain management. *Pain* 2007; 129(1-2):55-63.
14. Oliver JW, Kravitz RL, Kaplan SH, Meyers FJ. Individualized patient education and coaching to improve pain control among cancer outpatients. *Journal of Clinical Oncology: Official Journal of the American Society of Clinical Oncology* 2001; 19(8):2206-12.
15. Kalauokalani D, Franks P, Oliver JW, Meyers FJ, Kravitz RL. Can patient coaching reduce racial/ethnic disparities in cancer pain control? Secondary analysis of a randomized controlled trial. *Pain Med* 2007; 8(1):17-24.
16. Syrjala KL, Abrams JR, Polissar NL *et al.* Patient training in cancer pain management using integrated print and video materials: a multisite randomized controlled trial. *Pain* 2008; 135(1-2):175-86.
17. van der Peet EH, van den Beuken-van Everdingen MH, Patijn J, Schouten HC, van Kleef M, Courtens AM. Randomized clinical trial of an intensive nursing-based pain education program for cancer outpatients suffering from pain. *Support Care Cancer* 2008.
18. Ward S, Donovan HS, Owen B, Grosen E, Serlin R. An individualized intervention to overcome patient-related barriers to pain management in women with gynecologic cancers. *Research in Nursing & Health* 2000; 23(5):393-405.
19. Ward S, Donovan H, Gunnarsdottir S, Serlin RC, Shapiro GR, Hughes S. A randomized trial of a representational intervention to decrease cancer pain (RIDcancerPain). *Health Psychology* 2008; 27(1):59-67.
20. Wells N, Hepworth JT, Murphy BA, Wujcik D, Johnson R. Improving cancer pain management through patient and family education. *J Pain Symptom Manage* 2003; 25(4):344-56.
21. Wilkie D, Berry D, Cain K *et al.* Effects of coaching patients with lung cancer to report cancer pain. *Western Journal of Nursing Research* 2010; 32(1):23-46.

Evidence Table 9. Risk of bias assessment of studies addressing pain

Author, year	Sequence generation	Allocation concealment	Binding of personnel (short-term outcomes)	Blinding of outcome assessors (short-term outcomes)	Binding of personnel (long-term outcomes)	Blinding of outcome assessors (long-term outcomes)	Incomplete outcome data (short-term outcomes)	Incomplete outcome data (long-term outcomes)	Selective outcome reporting	Other sources of bias
Aubin, 2006 ¹	No	No	No	No	No	No	Yes	Yes	Yes	Yes
Borneman, 2008 ²	No	No	No	No	No	No	Yes	Yes	Yes	Yes
Borneman 2010{741}	No	No	No	No	No	No	Yes	Yes	Yes	Yes
Dalton, 2004 ³	Unclear	Unclear	No	No	No	No	Yes	Yes	Yes	Yes
Du Pen, 2000 ⁴	Unclear	No	No	No	No	No	Yes	No	No	No
Given, 2002 ⁵	Unclear	No	No	No	No	No	No	No	No	No
Keefe, 2005 ⁶	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Kovach, 2006 ⁷	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Lovell, 2010 ⁸	Unclear	Yes	No	Unclear	No	No	Yes	Unclear	Unclear	Yes
Marinangeli, 2004 ⁹	Unclear	Unclear	No	No	No	No	Yes	Yes	Yes	Yes
Miaskowski, 2004 ¹⁰	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Miaskowski, 2007 ¹¹	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Oliver, 2001 ¹² , Kalauokalani, 2007 ¹³	Unclear	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes
Syrjala, 2008 ¹⁴	Unclear	No	No	No	No	No	No	No	No	No
Van der Peet, 2004 ¹⁵	Yes	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes
Ward, 2000 ¹⁶	Unclear	No	No	No	No	No	No	No	No	No
Ward, 2008 ¹⁷	Unclear	No	No	No	No	No	Yes	Yes	No	No
Wells, 2003 ¹⁸	Unclear	No	No	No	No	No	No	No	No	No
Wilkie, 2010 ¹⁹	Yes	Yes	No	No	No	No	Yes	Yes	Yes	Yes

Evidence Table 9. Reference list

1. Aubin M, Vezina L, Parent R *et al.* Impact of an educational program on pain management in patients with cancer living at home. *Oncology Nursing Forum* 2006; 33(6):1183-8.
2. Borneman T, Koczywas M, Cristea M, Reckamp K, Sun V, Ferrell B. An interdisciplinary care approach for integration of palliative care in lung cancer. *Clinical Lung Cancer* 2008; 9(6):352-60.

3. Dalton JA, Keefe FJ, Carlson J, Youngblood R. Tailoring cognitive-behavioral treatment for cancer pain. *Pain Managing Nursing* 2004; 5(1):3-18.
4. Du Pen AR, Du Pen S, Hansberry J *et al.* An educational implementation of a cancer pain algorithm for ambulatory care. *Pain Managing Nursing* 2000; 1(4):116-28.
5. Given B, Given CW, McCorkle R *et al.* Pain and fatigue management: results of a nursing randomized clinical trial. *Oncology Nursing Forum* 2002; 29(6):949-56.
6. Keefe FJ, Ahles TA, Sutton L *et al.* Partner-guided cancer pain management at the end of life: a preliminary study. *J Pain Symptom Manage* 2005; 29(3):263-72.
7. Kovach CR, Logan BR, Noonan PE *et al.* Effects of the Serial Trial Intervention on discomfort and behavior of nursing home residents with dementia. *American Journal of Alzheimer's disease and Other Dementias* 2006; 21(3):147-55.
8. Lovell MR, Forder PM, Stockler MR *et al.* A randomized controlled trial of a standardized educational intervention for patients with cancer pain. *J Pain Symptom Manage* 2010; 40(1):49-59.
9. Marinangeli F, Ciccozzi A, Leonardis M *et al.* Use of strong opioids in advanced cancer pain: a randomized trial. *J Pain Symptom Manage* 2004; 27(5):409-16.
10. Miaskowski C, Dodd M, West C *et al.* Randomized clinical trial of the effectiveness of a self-care intervention to improve cancer pain management. *J Clinical Oncology* 2004; 22(9):1713-20.
11. Miaskowski C, Dodd M, West C *et al.* The use of a responder analysis to identify differences in patient outcomes following a self-care intervention to improve cancer pain management. *Pain* 2007; 129(1-2):55-63.
12. Oliver JW, Kravitz RL, Kaplan SH, Meyers FJ. Individualized patient education and coaching to improve pain control among cancer outpatients. *Journal of Clinical Oncology: Official Journal of the American Society of Clinical Oncology* 2001; 19(8):2206-12.
13. Kalauokalani D, Franks P, Oliver JW, Meyers FJ, Kravitz RL. Can patient coaching reduce racial/ethnic disparities in cancer pain control? Secondary analysis of a randomized controlled trial. *Pain Med* 2007; 8(1):17-24.
14. Syrjala KL, Abrams JR, Polissar NL *et al.* Patient training in cancer pain management using integrated print and video materials: a multisite randomized controlled trial. *Pain* 2008; 135(1-2):175-86.
15. van der Peet EH, van den Beuken-van Everdingen MH, Patijn J, Schouten HC, van Kleef M, Courtens AM. Randomized clinical trial of an intensive nursing-based pain education program for cancer outpatients suffering from pain. *Support Care Cancer* 2008.
16. Ward S, Donovan HS, Owen B, Grosen E, Serlin R. An individualized intervention to overcome patient-related barriers to pain management in women with gynecologic cancers. *Research in Nursing & Health* 2000; 23(5):393-405.
17. Ward S, Donovan H, Gunnarsdottir S, Serlin RC, Shapiro GR, Hughes S. A randomized trial of a representational intervention to decrease cancer pain (RIDcancerPain). *Health Psychology* 2008; 27(1):59-67.
18. Wells N, Hepworth JT, Murphy BA, Wujcik D, Johnson R. Improving cancer pain management through patient and family education. *J Pain Symptom Manage* 2003; 25(4):344-56.
19. Wilkie D, Berry D, Cain K *et al.* Effects of coaching patients with lung cancer to report cancer pain. *Western Journal of Nursing Research* 2010; 32(1):23-46.

Evidence Table 10. Description of interventions for studies addressing distress

Author, year	Integrative vs. consultative	Target of intervention
Aranda, 2006 ¹	Combined: interacts with both	Psychosocial needs
Blumenthal, 2006 ²	Consultative: interacts with family	Distress, coping
Carlson, 2010 ³	Consultative: interacts with family	Distress, depression, anxiety
Hudson, 2005 ⁴	Consultative: interacts with family	Support for family
Porter, 2011 ⁵	Consultative: interacts with patient/family	Patient pain, psychological distress, quality of life measure, and self-efficacy. Caregiver mood, strain, and self-efficacy in symptom management.
Steel, 2007 ⁶	Consultative: interacts with patient/family	Interdisciplinary assessments
Walsh, 2007 ⁷	Consultative: interacts with patient/family	Care giver distress, needs

Evidence Table 10. Reference list

1. Aranda S, Schofield P, Weih L, Milne D, Yates P, Faulkner R. Meeting the support and information needs of women with advanced breast cancer: a randomized controlled trial. *Br J Cancer* 2006; 95(6):667-73.
2. Blumenthal JA, Babyak MA, Keefe FJ *et al.* Telephone-based coping skills training for patients awaiting lung transplantation. *Journal of Consulting and Clinical Psychology* 2006; 74(3):535-44.
3. Carlson LE, Groff SL, Maciejewski O, Bultz BD. Screening for distress in lung and breast cancer outpatients: a randomized controlled trial. *J Clinical Oncology* 2010; 28(33):4884-91.
4. Hudson PL, Aranda S, Hayman-White K. A psycho-educational intervention for family caregivers of patients receiving palliative care: a randomized controlled trial. *J Pain Symptom Manage* 2005; 30(4):329-41.
5. Porter LS, Keefe FJ, Garst J *et al.* Caregiver-Assisted Coping Skills Training for Lung Cancer: Results of a Randomized Clinical Trial. *J Pain Symptom Manage* 2010.
6. Steel JL, Nadeau K, Olek M, Carr BI. Preliminary results of an individually tailored psychosocial intervention for patients with advanced hepatobiliary carcinoma. *J Psychosocial Oncology* 2007; 25(3):19-42.
7. Walsh K, Jones L, Tookman A *et al.* Reducing emotional distress in people caring for patients receiving specialist palliative care. Randomized trial. *Br J Psychiatry* 2007; 190:142-7.

Evidence Table 11. Description of quality improvement elements in studies addressing distress

Author, year	Facilitated relay of clinical data to providers?	Provider education?	Patient/ family/ caregiver education?	Promotion of self-management?	Patient/ caregiver reminder system?	Organizational change?	Other?
Aranda, 2006 ¹	Yes	Yes	Yes	Yes	No	No	No
Blumenthal, 2006 ²	No	No	Yes	Yes	No	No	No
Carlson, 2010 ³	No	No	No	No	No	Yes	No
Hudson, 2005 ⁴	No	No	Yes	Yes	Yes	No	No
Porter, 2011 ⁵	No	No	Yes	Yes	No	No	No
Steel, 2007 ⁶	No	No	Yes	Yes	No	No	Yes
Walsh, 2007 ⁷	No	No	Yes	Yes	No	No	No

Evidence Table 11. Reference list

1. Aranda S, Schofield P, Weih L, Milne D, Yates P, Faulkner R. Meeting the support and information needs of women with advanced breast cancer: a randomized controlled trial. *Br J Cancer* 2006; 95(6):667-73.
2. Blumenthal JA, Babyak MA, Keefe FJ *et al.* Telephone-based coping skills training for patients awaiting lung transplantation. *Journal of Consulting and Clinical Psychology* 2006; 74(3):535-44.
3. Carlson LE, Groff SL, Maciejewski O, Bultz BD. Screening for distress in lung and breast cancer outpatients: a randomized controlled trial. *J Clinical Oncology* 2010; 28(33):4884-91.
4. Hudson PL, Aranda S, Hayman-White K. A psycho-educational intervention for family caregivers of patients receiving palliative care: a randomized controlled trial. *J Pain Symptom Manage* 2005; 30(4):329-41.
5. Porter LS, Keefe FJ, Garst J *et al.* Caregiver-Assisted Coping Skills Training for Lung Cancer: Results of a Randomized Clinical Trial. *J Pain Symptom Manage* 2010.
6. Steel JL, Nadeau K, Olek M, Carr BI. Preliminary results of an individually tailored psychosocial intervention for patients with advanced hepatobiliary carcinoma. *J Psychosocial Oncology* 2007; 25(3):19-42.
7. Walsh K, Jones L, Tookman A *et al.* Reducing emotional distress in people caring for patients receiving specialist palliative care. Randomized trial. *Br J Psychiatry* 2007; 190:142-7.

Evidence Table 12. Outcomes reported in studies addressing distress

Author/Year/ Refid	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Carlson, 2010 ¹	Distress; Impact of referrals	Minimal Distress thermometer; Full Psychological Scan for Cancer (Triage full screen and offered referral to psychosocial services)	1134	Canadian; White; European; Asian; First Nations; African; Arabic; Central/South American	All patients: Triage group lower distress than minimal group (p=0.031); Over distress cutoff (DT score>=4): 36% in triage, 46% full screen, 48.7% in minimal screen (X ² =10.55, p=0.005)	All patients: overall lower distress at follow-up (F=2.37, p=0.094)	All patients: Referral linked to less improvement on DT (t=4.43, p<0.001); higher baseline stress predicted greater decrease on DT (t=-3.69, p<0.001); High baseline distress improved more if lower levels of education (t=2.05, p=0.041) and without chemo (t=2.16, p=0.031)	Distress scores in breast lower at follow-up in full and triage groups. Triage group in lung with high baseline distress showed 20% reduction in distress at follow-up showing benefit of psycho social intervention.

Evidence Table 12. Outcomes reported in studies addressing distress (continued)

Author/Year/Refid	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Carlson, 2010 ¹ (continued)	Psychosocial symptoms and support				Lung: DT scores: No change; Over distress cutoff: 30.7% triage, 50.9% full screen, 51.3% minimal screen ($X^2=14.51$ p=0.001)	Men with higher baseline depression improved more than women (t=1.97, p=0.047)	Higher baseline anxiety levels predicted greater improvement (t=-4.91, p<0.016); higher anxiety in lung improved more than higher anxiety in breast (t=2.68, p=0.008); higher anxiety among those receiving hormone therapy improved less than those who did not (t=-2.60, p=0.01)	Referral to psychosocial resources improved anxiety and depression but DT scores were higher.
	Other				Breast: Study condition associated with DT scores (F=3.27, p=0.039); Triage and full screen had lower DT scores than minimal screen (p<0.05)		Predictor of depression (PSSCAN depression) improvement: Greater baseline depression (t=-4.72, p<0.001)	Study highly feasible; 90% recruitment and 84.47% (breast) and 64.7% (lung) retention.

Evidence Table 12. Outcomes reported in studies addressing distress (continued)

Author/Year/Refid	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Carlson, 2010 ¹ (continued)					No difference in anxiety and depression scores at follow-up			
					Predictor of depression improvement: referral (t=2.229, p=0.03); lower income (t=2.01, p=0.036) and lower income with higher baseline depression (t=3.48, p=0.001); male (t=2.14, p=0.033) and male with higher baseline depression (t=1.97, p=0.047)			
Walsh, 2007 ²	Distress; Bereavement	General Health Questionnaire	271	14% non-white (not further stratified)	None	Reduction in career distress	Quality of life decreased over time in both arms	Need larger sample size and longer, ongoing intervention.
	QOL							
	Satisfaction							
	Other							

Evidence Table 12. Outcomes reported in studies addressing distress (continued)

Author/Year/ Refid	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Aranda, 2006 ³	Psychosocial symptoms and support	EORTC QLQ-30	105	Not reported		NS on any of 5 scales		For group with lower baseline needs only: 19-point vs. 14-point decrease in psychological needs in intervention group vs. Control (p=0.026) Need larger sample size and greater follow-up time and subsequent intervention sessions.
	Needs	Supportive care needs survey				NS		
Blumenthal, 2006 ⁴	Depression	Beck Depression Inventory	328	Mostly Caucasian pop	11.1 to 9.8 vs. 12.6 to 8.8 (treatment), p=0.003		No harms listed	CST was effective for pts with poor PQOL at beginning of treatment but little difference if PQOL was good already at beg of treatment
	Distress	General Health Questionnaire			45.2 to 43.2 vs. 48.1 to 39.7 (treatment), p=0.035			
	Anxiety	State-Trait Anxiety Inventory-State Form			36.1 to 35.0 vs. 38.1 to 33.9 (treatment), p=0.045			
	QOL	Pulmonary-Specific Quality of Life Scale PQLS				NS		

Evidence Table 12. Outcomes reported in studies addressing distress (continued)

Author/Year/Refid	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Blumenthal, 2006 ⁴ (continued)	Secondary listed as stress, mental health, social support, vitality and optimism; also SF-36 somatic outcomes and survival	SF-36				No differences in somatic QOL outcomes or survival		
Hudson, 2005 ⁵	Psychosocial symptoms and support	HADS	106	Not addressed other than 74.3% Australian born and 74.3% identified as Christians		NS		Assessment tools not validated previously for this population
	Rewards	Rewards of care giving Scale			P=0.036	Time 1-Time 2 not sig but Time to Time 3 sig		Only 15 standard care participants and 12 intervention participants completed assessments at all three time points
		Preparedness for Care giving Scale				NS		Caregivers in this study were highly functioning making it difficult to improve intervention effects
								The impact of participants' pre palliative care characteristics on the success of the intervention remains unknown

Evidence Table 12. Outcomes reported in studies addressing distress (continued)

Author/Year/Refid	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Hudson, 2005 ⁵ (continued)		Caregiver Competence Scale				NS		Gate keeping at access was a potential influence on sample representativeness
								A set of questions specific to the intervention aims and tested within the study might have assisted interpretation of the results
Porter, 2011 ⁶	QOL; three way dichotomizing patient's and caregivers based on	For patients-pain Basic Pain Inventory Scale, distress-Beck Depression Inventory	233	11% African American		No outcomes significantly improved over time	None	No control group with no intervention
	Satisfaction; cancer stage of I, II or III	Anxiety-State trait anxiety inventory						Future studies could include using a stepped approach, early stage pts could benefit from shorter interventions, design future study to examine efficacy of various interventions
	Pain scores	Self efficacy-used some questions from the chronic pain self efficacy scale						Only 54% of pts asked choose to participate

Evidence Table 12. Outcomes reported in studies addressing distress (continued)

Author/Year/Refid	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Porter, 2011 ⁶ (continued)		QOL-Functional Assessment of Cancer therapy lung cancer						Attrition rate at 27% post test and 40% at four month mostly due to deaths
								Pts predominantly Caucasian
		For caregivers-caregiver mood-Profile of Mood States-B						
		Caregiver strain-Caregiver Strain Index						
		Caregiver self efficacy in symptom management-used modified version of self efficacy scale as patients used						

Evidence Table 12. Outcomes reported in studies addressing distress (continued)

Author/Year/ Refid	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Steel, 2007 ⁷	QOL	Functional Assessment of Cancer Therapy-Hepatobiliary	28	African American (1), Native American (1) Hispanic/Latino (2) Other? (1)		QOL via FACT-did not use p values to describe	None	Looked at mean change in scores during assessment times for analysis
	Anxiety	State Trait Anxiety Index				Reported decrease in anxiety from beginning assessment to end assessment comparing control group and intervention group	None	Need further research with a larger sample size (this is underway)
	Other	Center for Epidemiological Studies-Depression Scale				Reported reduction in depressive symptoms between control and intervention group between beginning and end assessment	None	Although difference between control and intervention group was not statistically significant, they were clinically significant.
	Other	Date of diagnosis to death				Intervention group had longer survival by 20days but not statistically significant	None	

CCS; Care giver Competence Scale; CES-D; Center for Epidemiological Studies-Depression Scale ; DT; Minimal Distress thermometer ; FACT-Hep; Functional Assessment of Cancer Therapy-Hepatobiliary ; GHQ; General Health Questionnaire ; HADS; Hospital Anxiety and Depression Scale; NS; Not Significant; PQOL; Patient Recorded Outcome and Quality of Life Scale; PSSCAN; Full Psychological Scan for Cancer ; QI; QM/QI; Pain Tracking Tool; QOL; Quality of Life; STAI; State Trait Anxiety Index

Evidence Table 12. Reference list

1. Carlson LE, Groff SL, Maciejewski O, Bultz BD. Screening for distress in lung and breast cancer outpatients: a randomized controlled trial. *J Clinical Oncology* 2010; 28(33):4884-91.
2. Walsh K, Jones L, Tookman A *et al.* Reducing emotional distress in people caring for patients receiving specialist palliative care. Randomized trial. *Br J Psychiatry* 2007; 190:142-7.
3. Aranda S, Schofield P, Weih L, Milne D, Yates P, Faulkner R. Meeting the support and information needs of women with advanced breast cancer: a randomized controlled trial. *Br J Cancer* 2006; 95(6):667-73.
4. Blumenthal JA, Babyak MA, Keefe FJ *et al.* Telephone-based coping skills training for patients awaiting lung transplantation. *Journal of Consulting and Clinical Psychology* 2006; 74(3):535-44.
5. Hudson PL, Aranda S, Hayman-White K. A psycho-educational intervention for family caregivers of patients receiving palliative care: a randomized controlled trial. *J Pain Symptom Manage* 2005; 30(4):329-41.
6. Porter LS, Keefe FJ, Garst J *et al.* Caregiver-Assisted Coping Skills Training for Lung Cancer: Results of a Randomized Clinical Trial. *J Pain Symptom Manage* 2010.
7. Steel JL, Nadeau K, Olek M, Carr BI. Preliminary results of an individually tailored psychosocial intervention for patients with advanced hepatobiliary carcinoma. *J Psychosocial Oncology* 2007; 25(3):19-42.

Evidence Table 13. Risk of bias assessment of studies addressing distress

Author, year	Sequence generation	Allocation concealment	Binding of personnel (short-term outcomes)	Blinding of outcome assessors (short-term outcomes)	Binding of personnel (long-term outcomes)	Blinding of outcome assessors (long-term outcomes)	Incomplete outcome data (short-term outcomes)	Incomplete outcome data (long-term outcomes)	Selective outcome reporting	Other sources of bias
Aranda, 2006 ¹	Yes	Yes	Unclear	Unclear	Unclear	Unclear	Yes	Yes	Yes	Yes
Blumenthal, 2006 ²	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes
Carlson, 2010 ³	Yes	Yes	Yes	Unclear	Yes	Unclear	Yes	Yes	Yes	Yes
Hudson, 2005 ⁴	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Porter, 2011 ⁵	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Steel, 2007 ⁶	Unclear	Unclear	No	Yes	No	Yes	Yes	Yes	Yes	Yes
Walsh, 2007 ⁷	Yes	Yes	No	No	No	No	Yes	Yes	Yes	Yes

Evidence Table 13. Reference list

- Aranda S, Schofield P, Weih L, Milne D, Yates P, Faulkner R. Meeting the support and information needs of women with advanced breast cancer: a randomized controlled trial. *Br J Cancer* 2006; 95(6):667-73.
- Blumenthal JA, Babyak MA, Keefe FJ *et al.* Telephone-based coping skills training for patients awaiting lung transplantation. *Journal of Consulting and Clinical Psychology* 2006; 74(3):535-44.
- Carlson LE, Groff SL, Maciejewski O, Bultz BD. Screening for distress in lung and breast cancer outpatients: a randomized controlled trial. *J Clinical Oncology* 2010; 28(33):4884-91.
- Hudson PL, Aranda S, Hayman-White K. A psycho-educational intervention for family caregivers of patients receiving palliative care: a randomized controlled trial. *J Pain Symptom Manage* 2005; 30(4):329-41.
- Porter LS, Keefe FJ, Garst J *et al.* Caregiver-Assisted Coping Skills Training for Lung Cancer: Results of a Randomized Clinical Trial. *J Pain Symptom Manage* 2010.
- Steel JL, Nadeau K, Olek M, Carr BI. Preliminary results of an individually tailored psychosocial intervention for patients with advanced hepatobiliary carcinoma. *J Psychosocial Oncology* 2007; 25(3):19-42.
- Walsh K, Jones L, Tookman A *et al.* Reducing emotional distress in people caring for patients receiving specialist palliative care. Randomized trial. *Br J Psychiatry* 2007; 190:142-7.

Evidence Table 14: Description of interventions for studies addressing communication

Author, year	Integrative vs. consultative	Target of intervention
Ahrens, 2003 ¹	Combined: interacts with both	Communication
Burns, 2003 ²	Consultative: interacts with both	Provider-patient family communication, information giving, understanding and making decisions with families.
Campbell, 2003 ³	Consultative: interacts with both	Communication
Clayton, 2007 ⁴	Integrative	Patient participation during oncology consultations, psychosocial support.
Daly, 2010 ⁵	Integrative	Provider-patient family communication and decision making.
Gade, 2008 ⁶	Consultative: interacts with both	Interdisciplinary teams, symptom management, psychosocial and spiritual support, end-of-life planning, and post-hospital care.
Hanks, 2002 ⁷	Consultative: interacts with both	Interdisciplinary teams, patients symptoms control and quality of life
Jacobsen, 2011 ⁸	Integrative	Interdisciplinary teams, advance care planning, provider-patient communication
Kaufer, 2008 ⁹	Consultative: interacts with both	Provider-patient family communication, decision making, quality of care, family satisfaction and minority patient population
Lautrette, 2007 ¹⁰	Combined: interacts with provider	Patient family and providers
Lilly, 2000 ¹¹	Integrative	Interdisciplinary teams, patients goals and expectations of care, critical care use and advanced supportive technology
Lilly, 2003 ¹²	Integrative	Dying patients directed care goals, patients and family centered care plan, interdisciplinary team
Molloy, 2000 ¹³	Integrative	Advance care planning, patient and provider education, decision making
Mosenthal, 2008 ¹⁴	Combined: interacts with patient/family	Prognosis, advance directives, family needs, family support, and surrogate decision maker, and pain and symptoms
Norton, 2007 ¹⁵	Consultative: interacts with both	Provider-patient communication, decision making on goals of care and potential treatment limitations.
Penticuff, 2005 ¹⁶	Integrative	Care planning, parent -professional collaboration
Schneiderman, 2000 ¹⁷	Consultative: interacts with both	Interdisciplinary teams, ethical issues: cardiopulmonary resuscitation; do-not-attempt resuscitation; tracheotomy, gastrostomy, and transfusion; artificial nutrition/hydration, and ventilation.
Schneiderman, 2003 ¹⁸	Consultative: interacts with both	Provider-patient and family communication (sharing information, dealing with emotional discomfort and grieving, correcting misunderstandings)

Evidence Table 14. Reference list

- Ahrens T, Yancey V, Kollef M. Improving family communications at the end of life: implications for length of stay in the intensive care unit and resource use. *Am J Critical Care* 2003; 12(4):317-23; discussion 324.
- Danz MS, Rubenstein LV, Hempel S *et al.* Identifying quality improvement intervention evaluations: is consensus achievable? *Quality Safety Health Care* 2010; 19(4):279-83.
- Campbell ML, Guzman JA. Impact of a proactive approach to improve end-of-life care in a medical ICU. *Chest* 2003; 123(1):266-71.
- Clayton JM, Butow PN, Tattersall MH *et al.* Randomized controlled trial of a prompt list to help advanced cancer patients and their caregivers to ask questions about prognosis and end-of-life care. *J Clinical Oncology* 2007; 25(6):715-23.

5. Cook AM, Finlay IG, Edwards AG *et al.* Efficiency of searching the grey literature in palliative care. *J Pain Symptom Manage* 2001; 22(3):797-801.
6. Gade G, Venohr I, Conner D *et al.* Impact of an inpatient palliative care team: a randomized control trial. *J Palliative Med* 2008; 11(2):180-90.
7. Hanks GW, Robbins M, Sharp D *et al.* The IMPACT study: a randomized controlled trial to evaluate a hospital palliative care team. *British Journal of Cancer* 2002; 87(7):733-9.
8. - Jacobsen Juliet, - Robinson Ellen, - Jackson VA, - Meigs JB, - Billings J Andrew. - Development of a Cognitive Model for Advance Care Planning Discussions: Results From a Quality Improvement Initiative. - *Journal of Palliative Medicine* - 2011/03//; - 14(- 3):- 331, - 336.
9. Kaufer M, Murphy P, Barker K, Mosenthal A. Family satisfaction following the death of a loved one in an inner city MICU. *Am J Hosp Palliative Care* 2008; 25(4):318-25.
10. Lautrette A, Darmon M, Megarbane B *et al.* A communication strategy and brochure for relatives of patients dying in the ICU. *N England J Med* 2007; 356(5):469-78.
11. Lilly CM, De Meo DL, Sonna LA *et al.* An intensive communication intervention for the critically ill. *Am J Med* 2000; 109(6):469-75.
12. Lilly CM, Sonna LA, Haley KJ, Massaro AF. Intensive communication: four-year follow-up from a clinical practice study. *Critical Care Med* 2003; 31(5 Supplement):S394-9.
13. Molloy DW, Guyatt GH, Russo R *et al.* Systematic implementation of an advance directive program in nursing homes: a randomized controlled trial. *JAMA* 2000; 283(11):1437-44.
14. Mosenthal AC, Murphy PA, Barker LK, Lavery R, Retano A, Livingston DH. Changing the culture around end-of-life care in the trauma intensive care unit. *J Trauma* 2008; 64(6):1587-93.
15. Norton SA, Hogan LA, Holloway RG, Temkin-Greener H, Buckley MJ, Quill TE. Proactive palliative care in the medical intensive care unit: effects on length of stay for selected high-risk patients. *Critical Care Med* 2007; 35(6):1530-5.
16. Penticuff JH, Arheart KL. Effectiveness of an intervention to improve parent-professional collaboration in neonatal intensive care. *J Perinatal Neonatal Nursing* 2005; 19(2):187-202.
17. Schneiderman LJ, Gilmer T, Teetzel HD. Impact of ethics consultations in the intensive care setting: a randomized, controlled trial. *Critical Care Med* 2000; 28(12):3920-4.
18. Schneiderman LJ, Gilmer T, Teetzel HD *et al.* Effect of ethics consultations on non-beneficial life-sustaining treatments in the intensive care setting: a randomized controlled trial. *JAMA* 2003; 290(9):1166-72

Evidence Table 15. Description of quality improvement elements in studies addressing communication

Author, year	Provider reminder system?	Facilitated relay of clinical data to providers?	Audit and feedback?	Provider education?	Coaching/ collaborative /skills training?	Patient/ family/ caregiver education?	Promotion of self-management?	Patient/ Caregiver reminder system?	Organizational change?	Other?
Ahrens, 2003 ¹	No	Yes	No	Yes	No	No	No	No	No	No
Burns, 2003 ²	No	Yes	Yes	No	No	Yes	Yes	No	No	No
Campbell, 2003 ³	Yes	Yes	No	No	Yes	Yes	No	No	Yes	No
Clayton, 2007 ⁴	No	Yes	No	No	No	Yes	Yes	No	No	No
Daly, 2010 ⁵	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
Gade, 2008 ⁶	No	Yes	Yes	No	No	Yes	Yes	No	Yes	No
Hanks, 2002 ⁷	No	Yes	No	No	No	Yes	Yes	Yes	No	No
Jacobsen, 2011 ⁸	No	No	No	Yes	Yes	Yes	Yes	No	No	No
Lautrette, 2007 ⁹	No	No	No	Yes	Yes	Yes	No	No	No	No
Lilly, 2000 ¹⁰	No	Yes	No	No	No	Yes	Yes	No	No	No
Lilly, 2003 ¹¹	No	No	No	No	No	Yes	Yes	No	No	No
Kaufer, 2008 ¹²	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
Molloy, 2000 ¹³	No	No	No	Yes	Yes	Yes	Yes	No	No	No
Mosenthal, 2008 ¹⁴	No	No	No	No	No	Yes	Yes	No	No	No
Norton, 2007 ¹⁵	No	Yes	Yes	No	No	Yes	Yes	No	No	No
Penticuff, 2005 ¹⁶	No	No	No	Yes	No	Yes	Yes	No	No	Yes
Schneider	No	Yes	No	Yes	Yes	Yes	Yes	No	No	No

man, 2000 ¹⁷										
Schneider man, 2003 ¹⁸	No	Yes	No	Yes	Yes	Yes	Yes	No	No	No

Evidence Table 15. Reference list

- Ahrens T, Yancey V, Kollef M. Improving family communications at the end of life: implications for length of stay in the intensive care unit and resource use. *Am J Critical Care* 2003; 12(4):317-23; discussion 324.
- Danz MS, Rubenstein LV, Hempel S *et al.* Identifying quality improvement intervention evaluations: is consensus achievable? *Quality Safety Health Care* 2010; 19(4):279-83.
- Campbell ML, Guzman JA. Impact of a proactive approach to improve end-of-life care in a medical ICU. *Chest* 2003; 123(1):266-71.
- Clayton JM, Butow PN, Tattersall MH *et al.* Randomized controlled trial of a prompt list to help advanced cancer patients and their caregivers to ask questions about prognosis and end-of-life care. *J Clinical Oncology* 2007; 25(6):715-23.
- Cook AM, Finlay IG, Edwards AG *et al.* Efficiency of searching the grey literature in palliative care. *J Pain Symptom Manage* 2001; 22(3):797-801.
- Gade G, Venohr I, Conner D *et al.* Impact of an inpatient palliative care team: a randomized control trial. *J Palliative Med* 2008; 11(2):180-90.
- Hanks GW, Robbins M, Sharp D *et al.* The impact study: a randomized controlled trial to evaluate a hospital palliative care team. *British Journal of Cancer* 2002; 87(7):733-9.
- Jacobsen Juliet, - Robinson Ellen, - Jackson VA, - Meigs JB, - Billings J Andrew. - Development of a Cognitive Model for Advance Care Planning Discussions: Results From a Quality Improvement Initiative. - *Journal of Palliative Medicine* - 2011/03//; - 14(- 3):- 331, - 336.
- Lautrette A, Darmon M, Megarbane B *et al.* A communication strategy and brochure for relatives of patients dying in the ICU. *N England J Med* 2007; 356(5):469-78.
- Lilly CM, De Meo DL, Sonna LA *et al.* An intensive communication intervention for the critically ill. *Am J Med* 2000; 109(6):469-75.
- Lilly CM, Sonna LA, Haley KJ, Massaro AF. Intensive communication: four-year follow-up from a clinical practice study. *Critical Care Med* 2003; 31(5 Supplementary):S394-9.
- Kaufner M, Murphy P, Barker K, Mosenthal A. Family satisfaction following the death of a loved one in an inner city MICU. *Am J Hosp Palliative Care* 2008; 25(4):318-25.
- Molloy DW, Guyatt GH, Russo R *et al.* Systematic implementation of an advance directive program in nursing homes: a randomized controlled trial. *JAMA* 2000; 283(11):1437-44.
- Mosenthal AC, Murphy PA, Barker LK, Lavery R, Retano A, Livingston DH. Changing the culture around end-of-life care in the trauma intensive care unit. *J Trauma* 2008; 64(6):1587-93.
- Norton SA, Hogan LA, Holloway RG, Temkin-Greener H, Buckley MJ, Quill TE. Proactive palliative care in the medical intensive care unit: effects on length of stay for selected high-risk patients. *Critical Care Med* 2007; 35(6):1530-5.
- Penticuff JH, Arheart KL. Effectiveness of an intervention to improve parent-professional collaboration in neonatal intensive care. *J Perinatal Neonatal Nursing* 2005; 19(2):187-202.
- Schneiderman LJ, Gilmer T, Teetzel HD. Impact of ethics consultations in the intensive care setting: a randomized, controlled trial. *Critical Care Med* 2000; 28(12):3920-4.
- Schneiderman LJ, Gilmer T, Teetzel HD *et al.* Effect of ethics consultations on non-beneficial life-sustaining treatments in the intensive care setting: a randomized controlled trial. *JAMA* 2003; 290(9):1166-72.

Evidence Table 16. Outcomes reported in studies addressing communication

Author, year	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Ahrens et al, 2003 ¹	LOS	Hospital LOS	151 patients (108 in standard practice, 43 in intervention)	39-40% African American, 58-60% white, 1-2% Asian	Control 16.4 days, intervention 11.3 days; p = 0.03		None	None
	LOS	ICU LOS			Control 9.5 days, intervention 6.1 days; p=0.009			
	Mortality	Hospital Mortality				Control 93%, Intervention 74%; p =0.14		
	Cost				Hospital variable direct charge per case: control \$24,080, intervention \$15,559; p=0.01; Hospital Varian indirect charge per case: control \$8035, intervention \$5087; p=0.07; Fixed charge/case: Control \$8485, Intervention \$5320; p=0.006;			
Burns, 2003 ²	Decision to forgo Resuscitation		873	6% African Americans	Receiving the intervention increased the average predicted probability of deciding to forgo resuscitation by about 50%, from 18% to 28%. (OR 1.81, p=0.017)		None	
	Decision to give comfort care only				Receiving the intervention increased the average predicted probability of choosing comfort care by 59%, from 14% to 22%. (OR 1.94, p=0.018)		None	

Evidence Table 16. Outcomes reported in studies addressing communication (continued)

Author, year	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Burns, 2003 ² (continued)	Decision to treat aggressively				Receiving the intervention increased the average predicted probability of choosing aggressive care by almost 90%, from 10% to nearly 20%. (OR 2.30, p=0.002).		None	
	Satisfaction; Overall satisfaction with care					Intervention vs. Control (OR 0.68, p=0.14)	None	
	Satisfaction with information provided					Intervention vs. Control (OR 0.86, p=0.44)	None	
	Satisfaction; Satisfaction with involvement in decision making					Intervention vs. Control (OR 0.84, p=0.54)	None	
Campbell & Guzman, 2003 ³	LOS	Hospital LOS (days in means)	Total 81; retrospective control 40, intervention 41	None noted.	Global cerebral ischemia patients: control 8.6 days, intervention 4.7 days; p < 0.001	Multi-system organ failure patients: control 20.6 days, intervention 15.1 days; p = 0.063	None	None
	LOS	ICU LOS (days in means)			GCI: control 7.1 days, Intervention 3.7 days; p < 0.01	MOSF: control 10.7 days, intervention 10.4 days; p = 0.735		
	LOS	DNR status (days in means)			MOSF to DNR: control 4.7 days, intervention 1.5 days; p < 0.05;	MOSF admission to DNR: control 10.7 days, intervention 10.4 days; p = 0.735; GCI admission to DNR: control 3.5 days, intervention 2.8 days; p = 0.063		

Evidence Table 16. Outcomes reported in studies addressing communication (continued)

Author, year	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Campbell & Guzman, 2003 ³ (continued)	LOS	CMO status (days in means)			MOSF to CMO: control 7.3 days, intervention 2.2 days, $p < 0.05$; GCI hosp admission to CMO: control 6.3 days, intervention 3.5 days; $p < 0.05$			
	LOS	MOSF to death (days in means)			Control 5.8 days, intervention 2.1 days; $p < 0.05$			
	Use of hospital resources	Therapeutic Intervention Scoring System - after withhold support				MOSF: Decrease of: Control 1.8, intervention 4.1; $p=0.37$, GCI: Decrease of: Control 3.8, intervention 4.3; $p=0.41$		
		Therapeutic Intervention Scoring System - after make patient CMO			MOSF: Decrease of: control 12, intervention 25.6; $p < 0.05$	GCI: Decrease of: control 19.4, intervention 15.4; $p=0.34$		

Evidence Table 16. Outcomes reported in studies addressing communication (continued)

Author, year	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Clayton, 2007 ⁴	Primary outcome: total number of patient questions during the consultation and patient preference for information	Spiel-Berger State Anxiety Inventory	174 patients	None	Patients in the QPL group asked 2.31 times (95% CI, 1.68 to 3.18 times) more questions directly requesting for information during the consultation than controls (P .0001). 23% (95% CI, 11% to 37%) more items were discussed during consultations with QPL patients than controls (P .0001).			This is a 16-page booklet (Appendix, online only) containing 112 questions grouped into nine topics encompassing issues that may be discussed with a physician or another health professional. Unmet patient information need, was reduced by the QPL.
	Satisfaction, Patient satisfaction with the consultation					Patients were highly satisfied with the consultation in both groups (mean score out of 125: QPL, 110.1 v control, 110.3; 95% CI for difference, 3.4 to 2.9)		
	Other Patient anxiety					Patient anxiety scores were similar in both groups (mean, 40.3 in both groups; 95% CI for difference, 2.7 to 2.7).		

Evidence Table 16. Outcomes reported in studies addressing communication (continued)

Author, year	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Daly, 2010 ⁵	LOS		480	None		Control 22.84 (13.36) vs. Intervention 24.86 (13.04), P=0.07	None	
	LOS; ICU stay					Control 13.44 (9.18) vs. Intervention 14.41 (9.85), P=0.16	None	
	Presence of Living will					Control 30 (22.2) vs. Intervention 53 (15.3), P=0.07	None	
	DNAR order					Control 46 (34.1) vs. Intervention 107 (30.9), P=0.51	None	
	Number of Tracheotomy					Control 74 (55.6) vs. Intervention 169 (49.3), P=0.21	None	
	ICU Mortality					Control 26 (19.3) vs. Intervention 67 (19.4), P=0.98	None	
	Post-discharge Mortality					Control 19 (21.6) vs. Intervention 38 (15.9), P=0.03	None	

Evidence Table 16. Outcomes reported in studies addressing communication (continued)

Author, year	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Gade, 2008 ⁶	Patient symptoms; Primary study outcomes: symptom control	Physical Area scale of the Modified City of Hope Patient Questionnaires, Emotional/Relationship Area and Spiritual Area scales, Place of Care Environment scale and the Doctors, Nurses/Other Care Providers Communication scale, Eastern Cooperative Oncology Group performance scale.	517 patients	None		No difference between IPCS and UC groups for patient symptom control.	None	This study provides evidence for the positive impact of IPCS consultations on satisfaction with care and decreased health care costs. It also contributes new information on the impact of this service on ICU admissions and hospice utilization.
	Satisfaction; Primary study outcomes: patient satisfaction				IPCS group reported higher mean satisfaction for both the Place of Care Environment scale (IPCS: 6.8; UC: 6.4, p .001.)			
	QOL; Primary study outcomes					No difference between IPCS and UC groups for quality of life.		

Evidence Table 16. Outcomes reported in studies addressing communication (continued)

Author, year	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Gade, 2008 ⁶ (continued)	Psychosocial symptoms and support; levels of emotional Primary study outcomes: spiritual support					No difference between IPCS and UC groups for emotional and spiritual support.		
	Primary study outcomes: total health services costs at 6 months post index hospitalization				Total mean health costs for the IPCS group were lower by \$6,766 per patient compared to UC patients (IPCS: \$14,486; UC: \$21, 252, p 0.001).			
	Secondary measures: survival					No difference between IPCS and UC groups for survival.		
	Secondary measures: number of advance directives (ads) at discharge				IPCS patients completed significantly more ADS at hospital discharge than UC patients (91.1% vs. 77.8%; p0.001),			
	Secondary measures: hospice utilization within the 6 months post index hospitalization.				IPCS patients had significantly longer median hospice stays than UC participants (IPCS: 24 days; UC: 12days, p0.04)			
	Secondary measures: ICU admissions				Fewer ICU admissions IPCS 12 vs. UC 21 (P=0.04)			

Evidence Table 16. Outcomes reported in studies addressing communication (continued)

Author, year	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Hanks, 2002 ⁷	Symptom	VAS, mood (Memorial Pain Assessment Card), emotional (WONCA scale)	261	None		No diff; Symptom severity (p=0.48), Mood (p=0.45), emotional problems (0.58)		
	Satisfaction	Macadam's Assessment of Suffering Questionnaire, FAMCARE scale, the Hospital Anxiety and Depression scale	261	None		No p values given but no apparent differences.		This study didn't show a significant difference between the 'full-PCT' and 'telephone-PCT' in respect of the primary outcome measures, and particularly symptoms and HRQOL
	QOL, Health-related quality of life	EORTC QLQ-C30 questionnaire,				No significant diff between groups (p = 0.45).		
	LOS					Full PCT 14.7 (9.4) days vs. Telephone PCT 13.2 (9.6) days. P value not given		
Jacobsen, 2011 ⁸	Advance care plan discussion		899	None	33.8% intervention vs. 21.2% control, p<0.001	None	None	
	Presence of an order at the time of discharge to limit life-sustaining treatment				19.1% intervention vs. 13.9% control, p<0.044	None	None	

Evidence Table 16. Outcomes reported in studies addressing communication (continued)

Author, year	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Kaufer, 2008 ⁹	Overall satisfaction with hospital experience; Satisfaction	Family Satisfaction with Care Questionnaire	88	67% African American		No significant change	None	
	Satisfaction with amount of treatment received	Family Satisfaction with Care Questionnaire			Increased from 44% to 75% (P = .03)		None	
	Satisfaction; Patient life not prolonged or shortened unnecessarily	Family Satisfaction with Care Questionnaire			Increased from 47% pre-intervention to 73% post-intervention (P =0.016)		None	
	Satisfaction Satisfaction with understanding of information	Family Satisfaction with Care Questionnaire			Increased from 44% to 73% (P=0.005) post-intervention		None	
	Distress Emotional support	Family Satisfaction with Care Questionnaire			Increased from 76% to 86% (P<0.05)		None	
	Patient Symptom management symptoms	Family Satisfaction with Care Questionnaire				No significant change	None	
	Other Involvement in decision making	Family Satisfaction with Care Questionnaire			Increased from 40% to 70% (P = .004).		None	

Evidence Table 16. Outcomes reported in studies addressing communication (continued)

Author, year	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Kaufer, 2008 (continued)	Satisfaction with frequency of communication Other	Family Satisfaction with Care Questionnaire			Communication from doctors (44% to 76%, p=0.003), from nurses (72% to 91%, p=0.021) of information, honesty of information, and completeness of information increased from 44% to 73%, 56% to 80%, and 49% to 78%, respectively (P =0.005, 0.015, and 0.005 respectively).		None	
Lautrette et al, 2007 ¹⁰	Distress; Caregiver distress	Impact of Event Scale Score	Control group 63 patients, Intervention group 63 patients.	86 (intervention) or 88% (control) of patients were of French descent	Intervention IES score median 27 (IQR 18-42) vs. Control IES score 39 (IQR 25-48); p=0.02; 45% of families in intervention group at risk for PTSD and 69% of families in control group at risk for PTSD		None noted.	Symptoms of anxiety & depression - also significantly different; most measures of effectiveness of overall information provided were not statistically significantly different; use of non-beneficial interventions (ventilation, others) not significantly different

Evidence Table 16. Outcomes reported in studies addressing communication (continued)

Author, year	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Lautrette et al, 2007 ¹⁰	Psychosocial symptoms and Caregiver distress support	Hospital Anxiety and Depression Scale			Intervention HADS score median 11 (IQR 8-18) vs. Control HADS 17 (IQR 11-25); p=0.004;			
	LOS	Number of days in ICU from admission to decision to forgo life-sustaining treatments				Intervention 2 days (IQR 2-14), Control 5 days (IQR 2-10), p=0.38		
	Discussion of goals of care by physicians on rounds				Discussion of goals of care by physicians on rounds increased from 4% to 36% of patient-days.			
	Do not resuscitate and Withdrawal of life support					DNR (43%) and W/D (24%) were unchanged.		
	Mortality rate					During intervention, rates of mortality (14%),		

Evidence Table 16. Outcomes reported in studies addressing communication (continued)

Author, year	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Lilly, 2003 ¹¹	Length of stay (primary vs. Secondary not stated)	ICU LOS	2495 Patients	None	Length of stay in the ICU was reduced from 4 [2–11] to 3 days [2–6 days, interquartile range; n 2361]	None	None	Intensive communication is a process based intervention that encourages the use of advanced supportive technology when it is effective for accomplishing patient-directed goals and facilitates acceptance of a comfort-focused care plan for dying patients.
	Mortality	Mortality			ICU mortality rate in follow-up study was 18.0% and lower than the rate of 31.3% observed for our pre-intervention group (chi-square p .001)			
	LOS	Adjustment for acute physiology and chronic health evaluation 3 score	530	African Americans, Hispanics, Asians	4 days (2 to 11 days) to 3 days (2 to 6 days) P= 0.01. APACHE 3 score [risk ratio- 0.81, 95% confidence interval (CI), 0.66 to 0.99, P- 0.04	None	None	

Evidence Table 16. Outcomes reported in studies addressing communication (continued)

Author, year	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Lilly, 2000 ¹²	Mortality				7 of 35 patients (20%) died in the pre-intervention period, and 5 of 102 patients (5%) died in the intensive communication period (P = 0.02).	None	None	
	Rate of family non-consensus				171 days per 1,000 patient-days to 16 days per 1,000 patient-days (1.7 to 0.09 days per patient) after the intervention (P=0.001)	None	None	
	Rate of provider non-consensus				65 days per 1,000 patient days to 4 days per 1,000 patient-days, (0.56 to 0.02 days per patient)	None	None	
Molloy, 2000 ¹³	Satisfaction	Satisfaction questionnaires	1133	None		Mean diff -0.16 [-0.41-0.1], P=0.24	None	
	Hospital cost					Hosp cost: intervention Can\$1772, control Can\$3869, (p=0.003); total health care & implement cost intervention Can\$3490, control Can\$5239 (p=0.01)		
	Risk of hospitalization and # hosp days				Risk of hosp: Intervention 0.27, control 0.48 (p=0.001); # hosp days: intervention 2.61, control 5.86 (p=0.01)		None	
	Mortality rate					Intervention and control homes (24% vs. 28%; P = .20).	None	

Evidence Table 16. Outcomes reported in studies addressing communication (continued)

Author, year	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Mosenthal, 2008 ¹⁴	LOS; Hospital LOS	Glasgow Coma Scale, severe head injury, Injury Severity Score.	367	None	In baseline patients ICU LOS mean 7.6, median 3, hospital LOS mean 14.4, median 3.5, In intervention patients ICU LOS mean 6.1, median 1, hospital LOS mean 6.5, median 1.5		None	
Norton, 2007{ #16225}	LOS; MICU LOS		191	African American (19.4%), Hispanic (3%)	The proactive PC intervention group was 8.96 days compared with 16.28 days for the usual care group, a statistically significant difference of 7.32 days (p=0.0001)		None	
	LOS					The usual care group: 41.40 days compared with 35.8 days for the proactive PC intervention group (p=0.5011)	None	
	Mortality rate					In hospital mortality - 55.4% control vs. 59.5% intervention - no change the MICU death rate was 25 of 65 (38.5%) in the usual care group and 46 of 126 (36.5%) in the proactive PC intervention group. (p=0.6128).	None	

Evidence Table 16. Outcomes reported in studies addressing communication (continued)

Author, year	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Penticuff, 2005 ¹⁵	Parental satisfaction with participation, care and relationship ;Satisfaction	Collaboration and Satisfaction About Care Questionnaire	154	African American (15%), Hispanic (34%)		Intervention vs. Control with care 64.98 vs. 65.69 (p<0.610), with relationship 193.11 vs. 193.35 (p <0.960)	None	
	Parent's comprehension of medical information	Subscale of Parents' Understanding of Infant Care and Outcomes Questionnaire			Had fewer unrealistic concerns 4.32 vs. 8.56 (p=0.018)		None	
	Parent's understanding of infant care	Five-point Likert scale of 30 items.			Less uncertainty about infant care intervention vs. Control mean 1.92 vs. 3.82 (p=0.003)		None	
	Decision conflicts	Decision Conflict Scale			Intervention vs. Control; mean 45.88 vs. 59.10 (p<0.001)		None	
	Amount of shared decision making				Intervention vs. Control 139 vs. 122.69 (p=0.010)		None	
Schneiderman, 2003 ¹⁶	LOS; Hospital days		546	African Americans, Hispanics, Asians	Intervention (n=173) vs. Control patients (n=156) hospital days (-2.95 days, P=.01)		None	This study showed that ethics consultations in the ICU were helpful in addressing treatment conflicts.
	Days receiving ventilation				Intervention vs. Control patients (-1.7 days, P=.03)		None	
	Days receiving artificial nutrition/hydration					Days receiving nutrition/hydration (-1.03days, P=.14)	None	

Evidence Table 16. Outcomes reported in studies addressing communication (continued)

Author, year	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Schneiderman, 2003 ¹⁶ (continued)	Days receiving artificial nutrition and hydration				Control 12.0 vs. Intervention 4.1(p 0.05)		None	
	Days receiving ventilation				Control 11.4 vs. Intervention 3.7 (p 0.05)		None	
	% of patients receiving CPR, DNAR, gastrostomy, tracheotomy, transfusion, ventilator					No difference.		
	Overall mortality					There were no differences - p=1.0 - in overall mortality between the control patients and patients receiving ethics consultations.	None	
Schneiderman, 2000 ¹⁷	LOS; ICU days		70	African Americans, Hispanics, Asians	There was a reduction in ICU days: control 13.2 days vs. Intervention 4.2 days (p 0.03)		None	

Can \$; Canadian dollar; CMO; Comfort measures only; CPR; Cardiopulmonary resuscitation; DNAR/DNR; Do not attempt resuscitation; EORTC QLQ C-30; European organization for research and treatment of cancer quality of life questionnaire; GCI; Global cerebral ischemia; HADS; Hospital anxiety and depression scale; HRQOL; Health related quality of life; ICU; Intensive care unit; IPCS; Interdisciplinary palliative care service; IES; Impact of event scale ; IQR; Interquartile range; LOS; Length of stay; MICU; Medical intensive care unit; MOSF; Multi-organ systems failure; PC; Palliative care; PCT; Palliative care team; PTSD; Post-traumatic stress disorder; QOL; Quality of life; QPL; Question prompts lists; UC; Usual care; WD; Withdrawal of life support; VAS; Visual analog scale; WONCA; World Organization of National Colleges and Academic

Evidence Table 16. Reference list

- Ahrens T, Yancey V, Kollef M. Improving family communications at the end of life: implications for length of stay in the intensive care unit and resource use. *Am J Critical Care* 2003; 12(4):317-23; discussion 324.
- Danz MS, Rubenstein LV, Hempel S *et al.* Identifying quality improvement intervention evaluations: is consensus achievable? *Quality Safety Health Care* 2010; 19(4):279-83.
- Campbell ML, Guzman JA. Impact of a proactive approach to improve end-of-life care in a medical ICU. *Chest* 2003; 123(1):266-71.
- Clayton JM, Butow PN, Tattersall MH *et al.* Randomized controlled trial of a prompt list to help advanced cancer patients and their caregivers to ask questions about prognosis and end-of-life care. *J Clinical Oncology* 2007; 25(6):715-23.

5. Cook AM, Finlay IG, Edwards AG *et al.* Efficiency of searching the grey literature in palliative care. *J Pain Symptom Manage* 2001; 22(3):797-801.
6. Gade G, Venohr I, Conner D *et al.* Impact of an inpatient palliative care team: a randomized control trial. *J Palliative Med* 2008; 11(2):180-90.
7. Hanks GW, Robbins M, Sharp D *et al.* The IMPACT study: a randomized controlled trial to evaluate a hospital palliative care team. *British Journal of Cancer* 2002; 87(7):733-9.
8. - Jacobsen Juliet, - Robinson Ellen, - Jackson VA, - Meigs JB, - Billings J Andrew. - Development of a Cognitive Model for Advance Care Planning Discussions: Results From a Quality Improvement Initiative. - *Journal of Palliative Medicine* - 2011/03//; - 14(- 3):- 331, - 336.
9. Kaufer M, Murphy P, Barker K, Mosenthal A. Family satisfaction following the death of a loved one in an inner city MICU. *Am J Hosp Palliative Care* 2008; 25(4):318-25.
10. Lautrette A, Darmon M, Megarbane B *et al.* A communication strategy and brochure for relatives of patients dying in the ICU. *N England J Med* 2007; 356(5):469-78.
11. Lilly CM, Sonna LA, Haley KJ, Massaro AF. Intensive communication: four-year follow-up from a clinical practice study. *Critical Care Med* 2003; 31(5 Suppl):S394-9.
12. Lilly CM, De Meo DL, Sonna LA *et al.* An intensive communication intervention for the critically ill. *Am J Med* 2000; 109(6):469-75.
13. Molloy DW, Guyatt GH, Russo R *et al.* Systematic implementation of an advance directive program in nursing homes: a randomized controlled trial. *JAMA* 2000; 283(11):1437-44.
14. Mosenthal AC, Murphy PA, Barker LK, Lavery R, Retano A, Livingston DH. Changing the culture around end-of-life care in the trauma intensive care unit. *J Trauma* 2008; 64(6):1587-93.
15. Penticuff JH, Arheart KL. Effectiveness of an intervention to improve parent-professional collaboration in neonatal intensive care. *J Perinatal Neonatal Nursing* 2005; 19(2):187-202.
16. Schneiderman LJ, Gilmer T, Teetzel HD *et al.* Effect of ethics consultations on non beneficial life-sustaining treatments in the intensive care setting: a randomized controlled trial. *JAMA* 2003; 290(9):1166-72.
17. Schneiderman LJ, Gilmer T, Teetzel HD. Impact of ethics consultations in the intensive care setting: a randomized, controlled trial. *Critical Care Med* 2000; 28(12):3920-4.

Evidence Table 17. Risk of bias assessment of studies addressing communication

Author, year	Sequence generation	Allocation concealment	Binding of personnel (short-term outcomes)	Blinding of outcome assessors (short-term outcomes)	Binding of personnel (long-term outcomes)	Blinding of outcome assessors (long-term outcomes)	Incomplete outcome data (short-term outcomes)	Incomplete outcome data (long-term outcomes)	Selective outcome reporting	Other sources of bias
Ahrens, 2003 ¹	Yes	No	Yes	Yes	No	No	Yes	Yes	Yes	Yes
Burns, 2003 ²	No	No	No	No	No	No	Yes	Yes	Yes	Yes
Campbell, 2003 ³	No	No	No	No	No	No	Yes	Yes	Yes	Yes
Clayton, 2007 ⁴	Yes	No	No	Yes	No	Yes	Yes	Yes	Yes	Yes
Daly, 2010 ⁵	No	No	No	No	No	No	Yes	Yes	Yes	Yes
Gade, 2008 ⁶	Yes	Yes	No	No	No	No	Yes	Yes	Yes	Yes
Hanks, 2002 ⁷	No	No	Yes	Yes	No	No	Yes	Yes	Yes	Yes
Jacobsen, 2011 ⁸	No	No	No	No	No	No	Yes	Yes	Yes	Yes
Kaufer, 2008 ⁹	No	No	No	No	No	No	Yes	Yes	Yes	Yes
Lautrette, 2007 ¹⁰	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes
Lilly, 2000 ¹¹	No	No	No	No	No	No	Yes	Yes	Yes	Yes
Lilly, 2003 ¹²	No	No	No	No	No	No	Yes	Yes	Yes	Yes
Molloy, 2000 ¹³	No	No	No	No	No	No	Yes	Yes	Yes	Yes
Mosenthal, 2008 ¹⁴	No	No	No	No	No	No	Yes	Yes	Yes	Yes
Norton, 2007 ¹⁵	No	No	No	No	No	No	Yes	Yes	Yes	Yes
Penticuff, 2005 ¹⁶	No	No	No	No	No	No	Yes	Yes	Yes	Yes
Schneiderman, 2000 ¹⁷	No	No	No	No	No	No	Yes	Yes	Yes	Yes
Schneiderman, 2003 ¹⁸	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

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1. Ahrens T, Yancey V, Kollef M. Improving family communications at the end of life: implications for length of stay in the intensive care unit and resource use. *Am J Critical Care* 2003; 12(4):317-23; discussion 324.
2. Danz MS, Rubenstein LV, Hempel S *et al.* Identifying quality improvement intervention evaluations: is consensus achievable? *Quality Safety Health Care* 2010; 19(4):279-83.
3. Campbell ML, Guzman JA. Impact of a proactive approach to improve end-of-life care in a medical ICU. *Chest* 2003; 123(1):266-71.
4. Clayton JM, Butow PN, Tattersall MH *et al.* Randomized controlled trial of a prompt list to help advanced cancer patients and their caregivers to ask questions about prognosis and end-of-life care. *J Clinical Oncology* 2007; 25(6):715-23.
5. Cook AM, Finlay IG, Edwards AG *et al.* Efficiency of searching the grey literature in palliative care. *J Pain Symptom Manage* 2001; 22(3):797-801.
6. Gade G, Venohr I, Conner D *et al.* Impact of an inpatient palliative care team: a randomized control trial. *J Palliative Med* 2008; 11(2):180-90.
7. Hanks GW, Robbins M, Sharp D *et al.* The IMPACT study: a randomized controlled trial to evaluate a hospital palliative care team. *British Journal of Cancer* 2002; 87(7):733-9.
8. - Jacobsen Juliet, - Robinson Ellen, - Jackson VA, - Meigs JB, - Billings J Andrew. - Development of a Cognitive Model for Advance Care Planning Discussions: Results from a Quality Improvement Initiative. - *Journal of Palliative Medicine* - 2011/03//; - 14(- 3):- 331, - 336.
9. Kaufer M, Murphy P, Barker K, Mosenthal A. Family satisfaction following the death of a loved one in an inner city MICU. *Am J Hosp Palliative Care* 2008; 25(4):318-25.
10. Lautrette A, Darmon M, Megarbane B *et al.* A communication strategy and brochure for relatives of patients dying in the ICU. *N England J Med* 2007; 356(5):469-78.
11. Lilly CM, De Meo DL, Sonna LA *et al.* An intensive communication intervention for the critically ill. *Am J Med* 2000; 109(6):469-75.
12. Lilly CM, Sonna LA, Haley KJ, Massaro AF. Intensive communication: four-year follow-up from a clinical practice study. *Critical Care Med* 2003; 31(5 Supplement):S394-9.
13. Molloy DW, Guyatt GH, Russo R *et al.* Systematic implementation of an advance directive program in nursing homes: a randomized controlled trial. *JAMA* 2000; 283(11):1437-44.
14. Mosenthal AC, Murphy PA, Barker LK, Lavery R, Retano A, Livingston DH. Changing the culture around end-of-life care in the trauma intensive care unit. *J Trauma* 2008; 64(6):1587-93.
15. Norton SA, Hogan LA, Holloway RG, Temkin-Greener H, Buckley MJ, Quill TE. Proactive palliative care in the medical intensive care unit: effects on length of stay for selected high-risk patients. *Crit Care Med* 2007; 35(6):1530-5.
16. Penticuff JH, Arheart KL. Effectiveness of an intervention to improve parent-professional collaboration in neonatal intensive care. *J Perinatal Neonatal Nursing* 2005; 19(2):187-202.
17. Schneiderman LJ, Gilmer T, Teetzel HD. Impact of ethics consultations in the intensive care setting: a randomized, controlled trial. *Critical Care Med* 2000; 28(12):3920-4.
18. Schneiderman LJ, Gilmer T, Teetzel HD *et al.* Effect of ethics consultations on non-beneficial life-sustaining treatments in the intensive care setting: a randomized controlled trial. *JAMA* 2003; 290(9):1166-72.

Evidence Table 18. Outcomes reported in studies addressing communication

Author, year	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Ahrens et al, 2003 ¹	LOS	Hospital LOS	151 patients (108 in standard practice, 43 in intervention)	39-40% African American, 58-60% white, 1-2% Asian	Control 16.4 days, intervention 11.3 days; p = 0.03		None	None
	LOS	ICU LOS			Control 9.5 days, intervention 6.1 days; p=0.009			
	Mortality	Hospital Mortality				Control 93%, Intervention 74%; p =0.14		
	Cost				Hospital variable direct charge per case: control \$24,080, intervention \$15,559; p=0.01; Hospital Variable indirect charge per case: control \$8035, intervention \$5087; p=0.07; Fixed charge/case: Control \$8485, Intervention \$5320; p=0.006;			
Burns, 2003 ²	Decision to forgo Resuscitation		873	6% African Americans	Receiving the intervention increased the average predicted probability of deciding to forgo resuscitation by about 50%, from 18% to 28%. (OR 1.81, p=0.017)		None	

Evidence Table 18. Outcomes reported in studies addressing communication (continued)

Author, year	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Burns, 2003 ² (continued)	Decision to give comfort care only				Receiving the intervention increased the average predicted probability of choosing comfort care by 59%, from 14% to 22%. (OR 1.94, p=0.018)		None	
	Decision to treat aggressively				Receiving the intervention increased the average predicted probability of choosing aggressive care by almost 90%, from 10% to nearly 20%. (OR 2.30, p=0.002).		None	
	Satisfaction; Overall satisfaction with care					Intervention vs. Control (OR 0.68, p=0.14)	None	
	Satisfaction with information provided Satisfaction					Intervention vs. Control (OR 0.86, p=0.44)	None	
	Satisfaction; Satisfaction with involvement in decision making					Intervention vs. Control (OR 0.84, p=0.54)	None	
Campbell & Guzman, 2003 ³	LOS	Hospital los (days in means)	Total 81; retrospective control 40, intervention 41	None noted.	Global cerebral ischemia patients: control 8.6 days, intervention 4.7 days; p < 0.001	Multi-system organ failure patients: control 20.6 days, intervention 15.1 days; p = 0.063	None	None
	LOS	ICU LOS (days in means)			GCI: control 7.1 days, Intervention 3.7 days; p < 0.01	MOSF: control 10.7 days, intervention 10.4 days; p = 0.735		

Evidence Table 18. Outcomes reported in studies addressing communication (continued)

Author, year	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Campbell & Guzman, 2003 ³ (continued)	LOS	DNR status (days in means)			MOSF to DNR: control 4.7 days, intervention 1.5 days; p < 0.05;	MOSF admission to DNR: control 10.7 days, intervention 10.4 days; p = 0.735; GCI admission to DNR: control 3.5 days, intervention 2.8 days; p = 0.063		
	LOS	CMO status (days in means)			MOSF to CMO: control 7.3 days, intervention 2.2 days, p< 0.05; GCI hosp admission to CMO: control 6.3 days, intervention 3.5 days; p < 0.05			
	LOS	MOSF to death (days in means)			Control 5.8 days, intervention 2.1 days; p<0.05			
	Use of hospital resources	Therapeutic Intervention Scoring System - after withhold support				MOSF: Decrease of: Control 1.8, intervention 4.1; p=0.37, GCI: Decrease of: Control 3.8, intervention 4.3; p=0.41		
		Therapeutic Intervention Scoring System - after make patient CMO			MOSF: Decrease of: control 12, intervention 25.6; p < 0.05	GCI: Decrease of: control 19.4, intervention 15.4; p=0.34		

Evidence Table 18. Outcomes reported in studies addressing communication (continued)

Author, year	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Clayton, 2007 ⁴	Primary outcome: total number of patient questions during the consultation and patient preference for information	Spiel-Berger State Anxiety Inventory	174 patients	None	Patients in the QPL group asked 2.31 times (95% CI, 1.68 to 3.18 times) more questions directly requesting for information during the consultation than controls (P .0001). 23% (95% CI, 11% to 37%) more items were discussed during consultations with QPL patients than controls (P .0001).			This is a 16-page booklet (Appendix, online only) containing 112 questions grouped into nine topics encompassing issues that may be discussed with a physician or another health professional. Unmet patient information need, was reduced by the QPL.
	Satisfaction, Patient satisfaction with the consultation					Patients were highly satisfied with the consultation in both groups (mean score out of 125: QPL, 110.1 v control, 110.3; 95% CI for difference, 3.4 to 2.9)		
	Other Patient anxiety					Patient anxiety scores were similar in both groups (mean, 40.3 in both groups; 95% CI for difference, 2.7 to 2.7).		

Evidence Table 18. Outcomes reported in studies addressing communication (continued)

Author, year	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Daly, 2010 ⁵	LOS		480	None		Control 22.84 (13.36) vs. Intervention 24.86 (13.04), P=0.07	None	
	LOS; ICU stay					Control 13.44 (9.18) vs. Intervention 14.41 (9.85), P=0.16	None	
	Presence of Living will					Control 30 (22.2) vs. Intervention 53 (15.3), P=0.07	None	
	DNAR order					Control 46 (34.1) vs. Intervention 107 (30.9), P=0.51	None	
	Number of Tracheotomy					Control 74 (55.6) vs. Intervention 169 (49.3), P=0.21	None	
	ICU Mortality					Control 26 (19.3) vs. Intervention 67 (19.4), P=0.98	None	
	Post-discharge Mortality					Control 19 (21.6) vs. Intervention 38 (15.9), P=0.03	None	

Evidence Table 18. Outcomes reported in studies addressing communication (continued)

Author, year	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Gade, 2008 ^o	Patient symptoms; Primary study outcomes: symptom control	Physical Area scale of the Modified City of Hope Patient Questionnaires, Emotional/Relationship Area and Spiritual Area scales, Place of Care Environment scale and the Doctors, Nurses/Other Care Providers Communication scale, Eastern Cooperative Oncology Group performance scale.	517 patients	None		No difference between IPCS and UC groups for patient symptom control.	None	This study provides evidence for the positive impact of IPCS consultations on satisfaction with care and decreased health care costs. It also contributes new information on the impact of this service on ICU admissions and hospice utilization.
	Satisfaction; Primary study outcomes: patient satisfaction				IPCS group reported higher mean satisfaction for both the Place of Care Environment scale (IPCS: 6.8; UC: 6.4, p 001.)			
	QOL; Primary study outcomes					No difference between IPCS and UC groups for quality of life.		

Evidence Table 18. Outcomes reported in studies addressing communication (continued)

Author, year	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Gade, 2008 ^b (continued)	Psychosocial symptoms and support; levels of emotional Primary study outcomes: spiritual support					No difference between IPCS and UC groups for emotional and spiritual support.		
	Primary study outcomes: total health services costs at 6 months post index hospitalization				Total mean health costs for the IPCS group were lower by \$6,766 per patient compared to UC patients (IPCS: \$14,486; UC: \$21, 252, p 0.001).			
	Secondary measures: survival					No difference between IPCS and UC groups for survival.		
	Secondary measures: number of advance directives (ads) at discharge				IPCS patients completed significantly more ADS at hospital discharge than UC patients (91.1% vs. 77.8%; p0.001),			
	Secondary measures: hospice utilization within the 6 months post index hospitalization.				IPCS patients had significantly longer median hospice stays than UC participants (IPCS: 24 days; UC: 12days, p0.04)			
	Secondary measures: ICU admissions				Fewer ICU admissions IPCS 12 vs. UC 21 (P=0.04)			

Evidence Table 18. Outcomes reported in studies addressing communication (continued)

Author, year	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Hanks, 2002 ⁷	Symptom	VAS, mood (Memorial Pain Assessment Card), emotional (WONCA scale)	261	None		No diff; Symptom severity (p=0.48), Mood (p=0.45), emotional problems (0.58)		
	Satisfaction	Macadam's Assessment of Suffering Questionnaire, FAMCARE scale, the Hospital Anxiety and Depression scale	261	None		No p values given but no apparent differences.		This study didn't show a significant difference between the 'full-PCT' and 'telephone-PCT' in respect of the primary outcome measures, and particularly symptoms and HRQOL
	QOL, Health-related quality of life	EORTC QLQ-C30 questionnaire,				No significant diff between groups (p = 0.45).		
	LOS					Full PCT 14.7 (9.4) days vs. Telephone PCT 13.2 (9.6) days. P value not given		
Jacobsen, 2011 ⁸	Advance care plan discussion		899	None	33.8% intervention vs. 21.2% control, p<0.001	None	None	
	Presence of an order at the time of discharge to limit life-sustaining treatment				19.1% intervention vs. 13.9% control, p<0.044	None	None	

Evidence Table 18. Outcomes reported in studies addressing communication (continued)

Author, year	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Kaufer, 2008 ⁹	Overall satisfaction with hospital experience; Satisfaction	Family Satisfaction with Care Questionnaire	88	67% African American		No significant change	None	
	Satisfaction with amount of treatment received	Family Satisfaction with Care Questionnaire			Increased from 44% to 75%(P = .03)		None	
	Satisfaction; Patient life not prolonged or shortened unnecessarily	Family Satisfaction with Care Questionnaire			Increased from 47% pre-intervention to 73% post-intervention (P =0.016)		None	
	Satisfaction with understanding of information	Family Satisfaction with Care Questionnaire			Increased from 44% to 73% (P=0.005) post-intervention		None	
	Distress Emotional support	Family Satisfaction with Care Questionnaire			Increased from 76% to 86% (P<0.05)		None	
	Patient Symptom management symptoms	Family Satisfaction with Care Questionnaire				No significant change	None	
	Other Involvement in decision making	Family Satisfaction with Care Questionnaire			Increased from 40% to 70% (P = .004).		None	
	Satisfaction with frequency of communication Other	Family Satisfaction with Care Questionnaire			Communication from doctors (44% to 76%, p=0.003), from nurses (72% to 91%, p=0.021) of information, honesty of information, and completeness of information increased from 44% to 73%, 56% to 80%, and 49% to 78%, respectively (P =0.005, 0.015, and 0.005 respectively).		None	

Evidence Table 18. Outcomes reported in studies addressing communication (continued)

Author, year	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Lautrette et al, 2007 ¹⁰	Distress; Caregiver distress	Impact of Event Scale Score	Control group 63 patients, Intervention group 63 patients.	86 (intervention) or 88% (control) of patients were of French descent	Intervention IES score median 27 (IQR 18-42) vs. Control IES score 39 (IQR 25-48); p=0.02; 45% of families in intervention group at risk for PTSD and 69% of families in control group at risk for PTSD		None noted.	Symptoms of anxiety & depression - also significantly different; most measures of effectiveness of overall information provided were not statistically significantly different; use of non-beneficial interventions (ventilation, others) not significantly different
Lautrette et al, 2007 ¹⁰	Psychosocial symptoms and Caregiver distress support	Hospital Anxiety and Depression Scale			Intervention HADS score median 11 (IQR 8-18) vs. Control HADS 17 (IQR 11-25); p=0.004;			
	LOS	Number of days in ICU from admission to decision to forgo life-sustaining treatments				Intervention 2 days (IQR 2-14), Control 5 days (IQR 2-10), p=0.38		

Evidence Table 18. Outcomes reported in studies addressing communication (continued)

Author, year	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Lautrette et al, 2007 ¹⁰ (continued)	Discussion of goals of care by physicians on rounds				Discussion of goals of care by physicians on rounds increased from 4% to 36% of patient-days.			
	Do not resuscitate and Withdrawal of life support					DNR (43%) and W/D (24%) were unchanged.		
	Mortality rate					During intervention, rates of mortality (14%),		
Lilly, 2003 ¹¹	Length of stay (primary vs. Secondary not stated)	ICU LOS	2495 Patients	None	Length of stay in the ICU was reduced from 4 [2–11] to 3 days [2–6 days, interquartile range; n 2361]	None	None	Intensive communication is a process based intervention that encourages the use of advanced supportive technology when it is effective for accomplishing patient-directed goals and facilitates acceptance of a comfort-focused care plan for dying patients.

Evidence Table 18. Outcomes reported in studies addressing communication (continued)

Author, year	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Lilly, 2003 ¹¹ (continued)	Mortality	Mortality			ICU mortality rate in follow-up study was 18.0% and lower than the rate of 31.3% observed for our pre-intervention group (chi-square p .001)			
	LOS	Adjustment for acute physiology and chronic health evaluation 3 score	530	African Americans, Hispanics, Asians	4 days (2 to 11 days) to 3 days (2 to 6 days) P= 0.01. APACHE 3 score [risk ratio- 0.81, 95% confidence interval (CI), 0.66 to 0.99, P- 0.04	None	None	
Lilly, 2000 ¹²	Mortality				7 of 35 patients (20%) died in the pre-intervention period, and 5 of 102 patients (5%) died in the intensive communication period (P - 0.02).	None	None	
	Rate of family non-consensus				171 days per 1,000 patient-days to 16 days per 1,000 patient-days (1.7 to 0.09 days per patient) after the intervention (P-0.001)	None	None	
	Rate of provider non-consensus				65 days per 1,000 patient days to 4 days per 1,000 patient-days, (0.56 to 0.02 days per patient)	None	None	

Evidence Table 18. Outcomes reported in studies addressing communication (continued)

Author, year	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Molloy, 2000 ¹³	Satisfaction	Satisfaction questionnaires	1133	None		Mean diff -0.16 [-0.41-0.1], P=0.24	None	
	Hospital cost					Hosp cost: intervention Can\$1772, control Can\$3869, (p=0.003); total health care & implement cost intervention Can\$3490, control Can\$5239 (p=0.01)		
	Risk of hospitalization and # hosp days				Risk of hosp: Intervention 0.27, control 0.48 (p=0.001); # hosp days: intervention 2.61, control 5.86 (p=0.01)		None	
	Mortality rate					Intervention and control homes (24% vs. 28%; P = .20).	None	
Mosenthal, 2008 ¹⁴	LOS; Hospital LOS	Glasgow Coma Scale, severe head injury, Injury Severity Score.	367	None	In baseline patients ICU LOS mean 7.6, median 3, hospital LOS mean 14.4, median 3.5, In intervention patients ICU LOS mean 6.1, median 1, hospital LOS mean 6.5, median 1.5		None	

Evidence Table 18. Outcomes reported in studies addressing communication (continued)

Author, year	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Norton, 2007{#16225}	LOS; MICU LOS		191	African American (19.4%), Hispanic (3%)	The proactive PC intervention group was 8.96 days compared with 16.28 days for the usual care group, a statistically significant difference of 7.32 days (p=0.0001)		None	
	LOS					The usual care group: 41.40 days compared with 35.8 days for the proactive PC intervention group (p=0.5011)	None	
	Mortality rate					In hospital mortality - 55.4% control vs. 59.5% intervention - no change the MICU death rate was 25 of 65 (38.5%) in the usual care group and 46 of 126 (36.5%) in the proactive PC intervention group. (p=0.6128).	None	
Penticuff, 2005 ¹⁵	Parental satisfaction with participation, care and relationship ;Satisfaction	Collaboration and Satisfaction About Care Questionnaire	154	African American (15%), Hispanic (34%)		Intervention vs. Control with care 64.98 vs. 65.69 (p<0.610), with relationship 193.11 vs. 193.35 (p <0.960)	None	

Evidence Table 18. Outcomes reported in studies addressing communication (continued)

Author, year	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Penticuff, 2005 ¹⁵ (continued)	Parent's comprehension of medical information	Subscale of Parents' Understanding of Infant Care and Outcomes Questionnaire			Had fewer unrealistic concerns 4.32 vs. 8.56 (p=0.018)		None	
	Parent's understanding of infant care	Five-point Likert scale of 30 items.			Less uncertainty about infant care intervention vs. Control mean 1.92 vs. 3.82 (p=0.003)		None	
	Decision conflicts	Decision Conflict Scale			Intervention vs. Control; mean 45.88 vs. 59.10 (p<0.001)		None	
	Amount of shared decision making				Intervention vs. Control 139 vs. 122.69 (p=0.010)		None	
Schneiderman, 2003 ¹⁶	LOS; Hospital days		546	African Americans, Hispanics, Asians	Intervention (n=173) vs. Control patients (n=156) hospital days (-2.95 days, P=.01)		None	This study showed that ethics consultations in the ICU were helpful in addressing treatment conflicts.
	Days receiving ventilation				Intervention vs. Control patients (-1.7 days, P=.03)		None	
	Days receiving artificial nutrition/hydration					Days receiving nutrition/hydration (-1.03days, P=.14)	None	
	Days receiving artificial nutrition and hydration				Control 12.0 vs. Intervention 4.1 (p 0.05)		None	

Evidence Table 18. Outcomes reported in studies addressing communication (continued)

Author, year	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Schneiderman, 2003 ¹⁶ (continued)	Days receiving ventilation				Control 11.4 vs. Intervention 3.7 (p 0.05)		None	
	% of patients receiving CPR, DNAR, gastrostomy, tracheotomy, transfusion, ventilator					No difference.		
	Overall mortality					There were no differences - p=1.0 - in overall mortality between the control patients and patients receiving ethics consultations.	None	
Schneiderman, 2000 ¹⁷	LOS; ICU days		70	African Americans, Hispanics, Asians	There was a reduction in ICU days: control 13.2 days vs. Intervention 4.2 days (p 0.03)		None	

Can \$; Canadian dollar; CMO; Comfort measures only; CPR; Cardiopulmonary resuscitation; DNAR/DNR; Do not attempt resuscitation; EORTC QLQ C-30; European organization for research and treatment of cancer quality of life questionnaire; GCI; Global cerebral ischemia; HADS; Hospital anxiety and depression scale; HRQOL; Health related quality of life; ICU; Intensive care unit; IPCS; Interdisciplinary palliative care service; IES; Impact of event scale ; IQR; Interquartile range; LOS; Length of stay; MICU; Medical intensive care unit; MOSF; Multi-organ systems failure; PC; Palliative care; PCT; Palliative care team; PTSD; Post-traumatic stress disorder; QOL; Quality of life; QPL; Question prompts lists; UC; Usual care; WD; Withdrawal of life support; VAS; Visual analog scale; WONCA; World Organization of National Colleges and Academic

Evidence Table 18. Reference list

- Ahrens T, Yancey V, Kollef M. Improving family communications at the end of life: implications for length of stay in the intensive care unit and resource use. *Am J Critical Care* 2003; 12(4):317-23; discussion 324.
- Danz MS, Rubenstein LV, Hempel S *et al.* Identifying quality improvement intervention evaluations: is consensus achievable? *Quality Safety Health Care* 2010; 19(4):279-83.
- Campbell ML, Guzman JA. Impact of a proactive approach to improve end-of-life care in a medical ICU. *Chest* 2003; 123(1):266-71.
- Clayton JM, Butow PN, Tattersall MH *et al.* Randomized controlled trial of a prompt list to help advanced cancer patients and their caregivers to ask questions about prognosis and end-of-life care. *J Clinical Oncology* 2007; 25(6):715-23.
- Cook AM, Finlay IG, Edwards AG *et al.* Efficiency of searching the grey literature in palliative care. *J Pain Symptom Manage* 2001; 22(3):797-801.

6. Gade G, Venohr I, Conner D *et al.* Impact of an inpatient palliative care team: a randomized control trial. *J Palliative Med* 2008; 11(2):180-90.
7. Hanks GW, Robbins M, Sharp D *et al.* The IMPACT study: a randomized controlled trial to evaluate a hospital palliative care team. *British Journal of Cancer* 2002; 87(7):733-9.
8. - Jacobsen Juliet, - Robinson Ellen, - Jackson VA, - Meigs JB, - Billings J Andrew. - Development of a Cognitive Model for Advance Care Planning Discussions: Results From a Quality Improvement Initiative. - *Journal of Palliative Medicine* - 2011/03//; - 14(- 3):- 331, - 336.
9. Kaufer M, Murphy P, Barker K, Mosenthal A. Family satisfaction following the death of a loved one in an inner city MICU. *Am J Hosp Palliative Care* 2008; 25(4):318-25.
10. Lautrette A, Darmon M, Megarbane B *et al.* A communication strategy and brochure for relatives of patients dying in the ICU. *N England J Med* 2007; 356(5):469-78.
11. Lilly CM, Sonna LA, Haley KJ, Massaro AF. Intensive communication: four-year follow-up from a clinical practice study. *Critical Care Med* 2003; 31(5 Suppl):S394-9.
12. Lilly CM, De Meo DL, Sonna LA *et al.* An intensive communication intervention for the critically ill. *Am J Med* 2000; 109(6):469-75.
13. Molloy DW, Guyatt GH, Russo R *et al.* Systematic implementation of an advance directive program in nursing homes: a randomized controlled trial. *JAMA* 2000; 283(11):1437-44.
14. Mosenthal AC, Murphy PA, Barker LK, Lavery R, Retano A, Livingston DH. Changing the culture around end-of-life care in the trauma intensive care unit. *J Trauma* 2008; 64(6):1587-93.
15. Penticuff JH, Arheart KL. Effectiveness of an intervention to improve parent-professional collaboration in neonatal intensive care. *J Perinatal Neonatal Nursing* 2005; 19(2):187-202.
16. Schneiderman LJ, Gilmer T, Teetzel HD *et al.* Effect of ethics consultations on non beneficial life-sustaining treatments in the intensive care setting: a randomized controlled trial. *JAMA* 2003; 290(9):1166-72.
17. Schneiderman LJ, Gilmer T, Teetzel HD. Impact of ethics consultations in the intensive care setting: a randomized, controlled trial. *Critical Care Med* 2000; 28(12):3920-4.

Evidence Table 19. Description of interventions for studies addressing quality improvement

Author, year	Integrative vs. consultative	Target of intervention
Detmar, 2002 ¹	Other/neither	Assessments
Mills, 2009 ²	Other/neither	Assessments
Rosenbloom, 2007 ³	Consultative: Interacts with both	Assessments
Taenzer, 2000 ⁴	Other/neither	Quality of life assessment
Velikova, 2004 ⁵ , Velikova 2010 ⁶	Integrative	Case management

Evidence Table 19. Reference list

1. Detmar SB, Muller MJ, Schornagel JH, Wever LD, Aaronson NK. Health-related quality-of-life assessments and patient-physician communication: a randomized controlled trial. *JAMA* 2002; 288(23):3027-34.
2. Mills ME, Murray LJ, Johnston BT, Cardwell C, Donnelly M. Does a patient-held quality-of-life diary benefit patients with inoperable lung cancer? *J Clinical Oncology* 2009; 27(1):70-7.
3. - Rosenbloom SK, - Victorson DE, - Hahn EA, - Peterman AH, - Cella David. - Assessment Is Not Enough: a Randomized Controlled Trial of the Effects of Hqrl Assessment on Quality of Life and Satisfaction in Oncology Clinical Practice. - *Psycho-Oncology* - 2007/12//; - 16(- 12):- 1069, - 1079.
4. Taenzer P, Bultz BD, Carlson LE *et al.* Impact of computerized quality of life screening on physician behavior and patient satisfaction in lung cancer outpatients. *Psycho oncology* 2000; 9(3):203-13.
5. Velikova G, Booth L, Smith AB *et al.* Measuring quality of life in routine oncology practice improves communication and patient well-being: a randomized controlled trial. *J Clinical Oncology* 2004; 22(4):714-24.
6. Velikova G, Keding A, Harley C *et al.* Patients report improvements in continuity of care when quality of life assessments are used routinely in oncology practice: secondary outcomes of a randomized controlled trial. *Euro J Cancer* 2010; 46(13):2381-8.

Evidence Table 20. Description of quality improvement elements in studies addressing quality improvement

Author, year	Facilitated relay of clinical data to providers?	Provider education?	Patient/family/caregiver education?	Organizational change?
Detmar, 2002 ¹	Yes	Yes	Yes	No
Mills, 2009 ²	Yes	Yes	No	No
Rosenbloom, 2007 ³	Yes	No	No	No
Taenzer, 2000 ⁴	Yes	Yes	No	No
Velikova, 2004 ⁵ , Velikova 2010 ⁶	Yes	Yes	No	Yes

Evidence Table 20. Reference list

1. Detmar SB, Muller MJ, Schornagel JH, Wever LD, Aaronson NK. Health-related quality-of-life assessments and patient-physician communication: a randomized controlled trial. *JAMA* 2002; 288(23):3027-34.
2. Mills ME, Murray LJ, Johnston BT, Cardwell C, Donnelly M. Does a patient-held quality-of-life diary benefit patients with inoperable lung cancer? *J Clinical Oncology* 2009; 27(1):70-7.
3. - Rosenbloom SK, - Victorson DE, - Hahn EA, - Peterman AH, - Cella David. - Assessment Is Not Enough: a Randomized Controlled Trial of the Effects of HRQOL Assessment on Quality of Life and Satisfaction in Oncology Clinical Practice. - *Psycho-Oncology* - 2007/12//; - 16(- 12):- 1069, - 1079.
4. Taenzer P, Bultz BD, Carlson LE *et al.* Impact of computerized quality of life screening on physician behavior and patient satisfaction in lung cancer outpatients. *Psycho oncology* 2000; 9(3):203-13.
5. Velikova G, Booth L, Smith AB *et al.* Measuring quality of life in routine oncology practice improves communication and patient well-being: a randomized controlled trial. *J Clinical Oncology* 2004; 22(4):714-24.
6. Velikova G, Keding A, Harley C *et al.* Patients report improvements in continuity of care when quality of life assessments are used routinely in oncology practice: secondary outcomes of a randomized controlled trial. *Euro J Cancer* 2010; 46(13):2381-8.

Evidence Table 21. Outcomes reported in studies addressing quality improvement

Author, year	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
Detmar, 2002 ¹	Other	Composite communication score calculated by summing all HRQL-related topics that were discussed	214	Not reported	Composite score 4.7 (SD 2.3) intervention group, 3.7(1.9) control group (p=0.01)	Physical functioning	None	Physician-level randomization
	Satisfaction	Patient Satisfaction Questionnaire C				Not significantly improved		
	QOL Physician awareness of patient's QOL, QOL-related medications and counseling referrals	SF-36				Not significantly improved		
Mills, 2009 ²	QOL Diary utilization, communication, satisfaction, discussion of problems		115	None	Palliative Care QOL Index (communication, discussion)	QOL(primary outcome), 4/5 QOL measurements, satisfaction,	Clinical deterioration	Most patients gave no feedback to providers- no chance for intervention
Rosenbloom, 2007 ³	Clinical treatment changes							
Taenzer, 2000 ⁴	QOL	EORTC QLQ - c30	53	None discussed		Significantly different in 3 of 15 function and symptom scales - experimental group better only for dyspnea	None noted	"Clinic staff behavior may have changed since they were aware of the purpose of the study, even before the introduction of the QOL screening reports."; pre-post study, small sample size

Evidence Table 21. Outcomes reported in studies addressing quality improvement (continued)

Author, year	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
	Satisfaction	PDIS-pt satisfaction questionnaire				Not significantly improved		
	Other EORTC items addressed during the visit significantly higher for experimental group; no significant difference in medical record audit for number of EORTC categories charted							
Velikova, 2004 ⁵ ; Velikova, 2010 ⁶	Quality of care measures		286	Not reported	Symptom communication: 3.3(SD 1.63) vs. 2.7 (1.53) (p=0.03) (# of symptoms in the questionnaire mentioned during encounter)	Communication about other symptoms, issues not significantly improved		In general, significant differences with control group but not with the group that had HRQOL measured but no feedback to physicians; attrition rate of 30%; randomized at patient level
	Quality of life	Functional assessment of cancer therapy-general questionnaire score			Estimate effect: 8.01 (SE 2.84), p=0.006 (intervention vs. Control)			

Evidence Table 21. Outcomes reported in studies addressing quality improvement (continued)

Author, year	Outcome measures	Measures	Sample size	Disparities	Outcomes: Benefits. Significantly improved	Outcomes: Benefits. Not significantly improved	Outcomes: Harms	Other key information
	Satisfaction	Likert scale (2 questions)				Not significantly improved		
	Other: patient perceptions of communication, continuity and coordination	Medical care Questionnaire			Significantly Different for 2/3 subscales - estimate effect - ; communication, 4.51 (p=0.03); preferences 3.32, p=0.027 (intervention vs. Control)	Coordination not significantly improved		

EORTC-QLQ; European organization for research and treatment of cancer quality of life questionnaire; HRQOL; Health related quality of life; PDIS; Patient-doctor interaction scale; QOL; Quality of life; SF-36; Short form health survey with 36 questions

Evidence Table 21. Reference list

1. Detmar SB, Muller MJ, Schornagel JH, Wever LD, Aaronson NK. Health-related quality-of-life assessments and patient-physician communication: a randomized controlled trial. *JAMA* 2002; 288(23):3027-34.
2. Mills ME, Murray LJ, Johnston BT, Cardwell C, Donnelly M. Does a patient-held quality-of-life diary benefit patients with inoperable lung cancer? *J Clinical Oncology* 2009; 27(1):70-7.
3. Rosenbloom SK, Victorson DE, Hahn EA, - Peterman AH, - Cella David. Assessment Is Not Enough: a Randomized Controlled Trial of the Effects of HQRL Assessment on Quality of Life and Satisfaction in Oncology Clinical Practice. - *Psycho-Oncology* - 2007/12//; - 16(- 12):- 1069, - 1079.
4. Taenzer P, Bultz BD, Carlson LE *et al.* Impact of computerized quality of life screening on physician behavior and patient satisfaction in lung cancer outpatients. *Psycho oncology* 2000; 9(3):203-13.
5. Velikova G, Booth L, Smith AB *et al.* Measuring quality of life in routine oncology practice improves communication and patient well-being: a randomized controlled trial. *J Clinical Oncology* 2004; 22(4):714-24.
6. Velikova G, Keding A, Harley C *et al.* Patients report improvements in continuity of care when quality of life assessments are used routinely in oncology practice: secondary outcomes of a randomized controlled trial. *Euro J Cancer* 2010; 46(13):2381-8.

Evidence Table 22. Risk of bias assessment of studies addressing quality improvement

Author, year	Sequence generation	Allocation concealment	Binding of personnel (short-term outcomes)	Blinding of outcome assessors (short-term outcomes)	Binding of personnel (long-term outcomes)	Blinding of outcome assessors (long-term outcomes)	Incomplete outcome data (short-term outcomes)	Incomplete outcome data (long-term outcomes)	Selective outcome reporting	Other sources of bias
Detmar, 2002 ¹	Unclear	No	No	Unclear	No	Unclear	Yes	Yes	Yes	No
Mills, 2009 ²	Yes	Unclear	No	No	No	No	Yes	Yes	Yes	Yes
Rosenbloom, 2007 ³	Unclear	Unclear	No	No	No	No	Yes	Yes	Yes	Yes
Taenzer, 2000 ⁴	No	No	No	No	No	No	No	Yes	Yes	No
Velikova, 2004 ⁵ , Velikova, 2010 ⁶	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear	No	No	No	Unclear

Evidence Table 22. Reference list

1. Detmar SB, Muller MJ, Schornagel JH, Wever LD, Aaronson NK. Health-related quality-of-life assessments and patient-physician communication: a randomized controlled trial. *JAMA* 2002; 288(23):3027-34.
2. Mills ME, Murray LJ, Johnston BT, Cardwell C, Donnelly M. Does a patient-held quality-of-life diary benefit patients with inoperable lung cancer? *J Clinical Oncology* 2009; 27(1):70-7.
3. - Rosenbloom SK, - Victorson DE, - Hahn EA, - Peterman AH, - Cella David. - Assessment Is Not Enough: a Randomized Controlled Trial of the Effects of HQRL Assessment on Quality of Life and Satisfaction in Oncology Clinical Practice. - *Psycho-Oncology* - 2007/12//; - 16(- 12):- 1069, - 1079.
4. Taenzer P, Bultz BD, Carlson LE *et al.* Impact of computerized quality of life screening on physician behavior and patient satisfaction in lung cancer outpatients. *Psycho oncology* 2000; 9(3):203-13.
5. Velikova G, Booth L, Smith AB *et al.* Measuring quality of life in routine oncology practice improves communication and patient well-being: a randomized controlled trial. *J Clinical Oncology* 2004; 22(4):714-24.
6. Velikova G, Keding A, Harley C *et al.* Patients report improvements in continuity of care when quality of life assessments are used routinely in oncology practice: secondary outcomes of a randomized controlled trial. *Euro J Cancer* 2010; 46(13):2381-8.

Appendix F. Evidence Grading: Hospice and Nursing Homes

Number of studies; subjects	Domains pertaining to strength of evidence				Magnitude of effect and strength of evidence
	Risk of bias:	Consistency	Directness for outcome	Precision; Study heterogeneity	Absolute risk difference per 100 patients
Patient symptoms					Low SOE
4;1675	RCT/medium	Inconsistent	Direct	Not applicable; medium	Improvement with intervention; low
1; 176	Non-RCT/medium	Inconsistent	Direct	Not applicable; medium	Improvement with intervention; low
Utilization					Low SOE
2;1338	RCT/medium	Consistent	Indirect	Not applicable; medium	Improvement with intervention; low
2;895	Non-RCT/medium	Consistent	Indirect	Not applicable; medium	Improvement with intervention; low