

Appendix Table 2. Interventions

Author, Year (Reference); Country	Funding Source	Study Design and Quality	Population	Sampling Approach and setting	Intervention Description	Control Description	Time Point for Outcome Analysis	Outcomes	Description of Results
Anderson et al., 1994 (82); USA	Not reported	RCT Jadad: 2	Number approached: Not reported Number enrolled: 204 Number included in analysis of results: 117 Age(Mean age): Not reported Gender: Not reported Race/ethnicity: Not reported Severity: All stages	Patients with >50% chance of dying within 5 yrs and hospitalized for symptom control.	Offered the opportunity to execute an Advance Directive (Let Me Decide AD forms) regarding the level of care they wanted to receive if incapacitated.	Usual care	Baseline interview, re-interviewed at 3 months, 6 months, 1 year and 2 years, and every 6 months after for 3.5 years.	The Quality of Well-being Scale, a measure of health status and the General Well-being Index, a measure of psychological well-being for asymptomatic functioning (0 to 1 on 23 symptoms/problems).	82 (67%) intervention patients completed an AD when offered but 13 refused to participate. No negative affect on physical or psychological well-being after 3.5 years. Offering an AD form to VA patients improves completion rates and does not affect physical or psychological well-being.
Bailey et al., 2005 (110); USA	Not reported	Pre-post of patients at single institution Jadad: N/A	Number approached: Not reported Number enrolled: 95 received care after	Inpatient Veterans who died during a 6 month interval, identified by RN screening for patients at the end of life using simple criteria	The Inpatient Comfort Care Program: staff education, case identification, and implementation of a Comfort Care Order Set.	Usual care	From initiation of order set to death	Processes of care at EOL	There was a significant increase in the mean number of symptoms documented (1.7 [2.1 SD] to 4.4 [2.7 SD]) ($P < .001$) and number of care plans increased (0.4 [0.9 SD] to 2.7 [2.3 SD]) ($P < .001$). Opioid medication availability increased from 57.1% to 83.3% ($P < .001$) and DNR reported orders increased from 61.9% to 85.1% ($P < .001$). There were non-significant changes in the proportion of death that occurred in ICUs ($P = .17$); use of G tubes ($P = .40$); and increase in the use of restraints ($P < .001$). Results indicate that EOL care improved with the introduction of the palliative care program.

implementation
 Number
 included in
 analysis of
 results: 203 (108
 pre and 95 post)
 Mean Age:
 Mean years (pre-
 group) 69
 Gender: male
 98%
 Race: white 57%
 Disease: Mixed
 Severity:
 Advanced

Bookbinder et al., 2005 (109); USA	New York State Department of Health Quality Grant	Pre-post of patients at single institution	Number approached: Not reported	Inpatients who were expected to die within days or weeks on one of 5 hospital wards	The Palliative Care for Advanced Disease pathway implemented on 3 hospital units (Oncology, Geriatrics, and in inpatient palliative care/hospice unit as part of a quality improvement initiative	Usual care pre-intervention (on 3 intervention wards) and in 2 general medical units not receiving the intervention	From institution of pathway to death	Goals of care indicated by four indices evaluated change over time: the mean number of symptoms assessed, problematic symptoms, processes of care, and consultations requested	9 of 27 patients (33%) on the oncology/geriatrics units were more likely to have DNR orders than the comparison units whereas the comparison units were more likely to use "morphine infusions" and CPR than Intervention units. The mean number of symptoms assessed increased in all units ($P < 0.001$) for all comparisons; number of problem symptoms identified ($P = 0.014$) and the number of interventions consistent with the pathway increased only on the palliative care/hospice unit ($P = 0.021$); medical consultations declined on all units and reached significance on the geriatrics and oncology units ($P = 0.037$).
		Jadad: N/A	Number enrolled: 156 received care after implementation Number included in analysis of results: 257 Age: mean years 69-74 Gender: Not reported Race: White 49-75% among groups Disease: Mixed						

			Severity: Advanced							
Brumley et al., 2003 (83); USA	Garfield Memorial Fund	Pre-post of patients at a single institution	Number approached: Not reported	Patients who died with a life expectancy of 1 year or with life expectancy of <2 yrs receiving home health care.	Multidisciplinary home-based palliative care program designed to facilitate the transition from acute to palliative care during the last 12 months of life, with physician, RN, SW team, focusing on symptom relief, emotional and spiritual support, and patient education.	Control patients received home-based services	Pre/Post with follow-up over 2 years.	Pt/Surrogate satisfaction, hospital days, Emergency department visits, skilled nursing facility days, physician office visits, home visits	Intervention patients were older, sicker, less likely to have CHF, more likely to have cancer. Controlling for differences, intervention patients had increased satisfaction with services at least 60 days after enrollment, significantly fewer hospital visits (mean 2.4 vs. 9.3 $P < 0.001$) and ED visits (0.9 vs. 2.3, $P < 0.001$), and 45% lower costs. Palliative care program can reduce use of acute care services among seriously ill adults.	
		Jadad: N/A	Number enrolled: 558 Number included in analysis of results: 300 (including 169 control patients) Age: Mean age: Not reported Gender: Not reported Race/ethnicity: Not reported Disease: Not reported Severity: Not reported							
Campbell and Guzman, 2003 (84); USA	Not Reported	Intervention with historical control group	Number approached: Not reported	Consecutive patients in a medical ICU of a university hospital.	Daily family consultations addressing patients' prognosis and treatment goals, implementing DNR orders, and	Usual care	Baseline and throughout ICU stay	ICU length of stay, mortality, hospital days, DNR decisions, LOS between identification of the poor prognosis and establishment of EOL treatment goals.	Patients and families had fewer hospital days 20.6 vs. 15.1 ($P = 0.06$) for multisystem organ failure patients and 8.6 vs. 4.7 ($P < 0.001$) for GCI patients. Dying patients spent less time in the ICU. Palliative care intervention decreased the time between poor prognosis and EOL goals (4.7 ± 2.4 days MOSF, 3.5 ± 0.5 CGI).	

			comfort measures							
		Jadad: N/A	Number enrolled: 81, 41 prospective cohort, 40 historical control Number included in analysis of results: 81 Age: mean years 53 intervention vs. 58 control Gender: Not reported Race/ethnicity: Not reported Disease: Multisystem organ failure with global cerebral ischemia Severity: Not reported							
Campbell and Guzman, 2004 (85); USA	Not reported	Intervention with historical control group Jadad: N/A	Number approached: 1,972 ICU admissions Number enrolled: 52, 26 prospective cohort, 26 historical controls Number included in analysis of results: 52 Age: mean years 81 intervention vs. 81 control Gender: Not reported	Consecutive admissions to a medical ICU	Palliative care team consultation, family meeting, and discussion of withdrawing care	Usual care	Baseline to death or discharge from ICU	ICU length of stay, mortality, hospital days, DNR orders.	ICU length of stay was lower (intervention 3.5 days vs. 6.8 days control $P = 0.004$) and hospital days were lower (intervention 7.4 vs. 12.1 control $P = 0.007$). Mortality was unchanged.	

			Race/ethnicity: Not reported						
			Disease: Dementia						
			Severity: Advanced stage						
Casarett et al., 2005 (86); USA	Department of Veterans Affairs and Beeson Award	RCT	Number approached: 400	Residents and surrogates from 3 nursing homes (1 urban, 1 suburban, and 1 VA NH with ethnically diverse residents).	Structured interview identified hospice-appropriate patients. Their physicians were notified and asked to authorize hospice informational visit, which was then done.	Usual care	Baseline to 30 days	30-day hospice enrollment, family satisfaction for patients who died within 6 months, cost and resource utilization	Intervention patients were more likely to enroll in hospice within 30 days (20% vs. 1%, $P < .001$), and had fewer acute care admissions (mean: 0.28 vs. 0.49; $P = .04$). Families of intervention residents rated care more highly (mean on a scale of 1-5: 4.1 vs. 2.5; $P = .04$).
		Jadad: 3	Number enrolled: 205						
			Number included in analysis of results: 107 intervention; 98 control						
			Age: mean years 84						
			Gender: Male 25%						
			Race/ethnicity: White 74%						
			Disease: Cancer, dementia, CHF, COPD						
			Severity: Charlson score, mean: 2.6 (0-7)						
Coppola et al., 2001 (87); USA	AHRQ	CCT	Number approached: 24 primary care and 17 hospital based physicians, 82 family	Physicians recruited from a network of 6 group primary care practices including 24 primary care	ADVANCE Project: Advance Directives Values Assessment and Communication Enhancement Project. Patients	No advance directive	Pre/Post	Accuracy of physicians' predictions of patients' preferences for 4 life-sustaining treatments in 9 hypothetical illness	Family surrogates' judgments were more accurate than physicians'. Hospital-based physicians making predictions without ADs had the lowest accuracy and Primary care physicians' accuracy was not improved by either type of AD. Accuracy and confidence in predictions of hospital-based physicians was significantly improved for some scenarios using a scenario-based AD. Although ADs do not improve the accuracy of substituted judgments for primary care physicians or family surrogates, they increase the accuracy of hospital-based physicians.

surrogates of 82 patients

physicians of 82 elderly outpatients, 17 ER and critical care physicians who had no prior experience with the patients.

had been randomized to completing one type of directive. Physicians made substituted judgments after being provided with no patient AD, patient's value-based AD, or patient's scenario-based AD.

scenarios and whether ADs can improve the accuracy of substituted judgments made by primary care physicians and hospital-based physicians.

Jadad: N/A

Number enrolled: 24 primary care and 17 hospital based physicians, 82 family surrogates of 82 patients

Number included in analysis of results: 24 primary care and 17 hospital based physicians, 82 family surrogates of 82 patients

Age: mean years (physicians) 39 years

Gender: male 14/24 primary care and 15/17 inpatient physicians

Race/ ethnicity: white 21 / 24 primary care and 17/17 inpatient physicians

			Disease: Diverse Severity: Healthy elderly						
Englehardt et al., 2006 (112); USA	Robert Wood Johnson, Fan Fox / Leslie R. Samuels, and Nathan Cummings Foundations	Randomized, controlled trial	Number approached: Not reported	Patient recruited from within 3 VVA medical centers, one home care, and 2 managed care organizations	Palliative care oriented care coordination delivered by nurses, social workers	Usual care	3 and 6 month patient and 3 month surrogate outcomes	Effectiveness of communication with providers, satisfaction, willingness to participate in treatment planning, advance directive completion, costs	The intervention was associated with increased patient satisfaction with care and communication, and surrogates reported fewer problems with provider support. More intervention patients completed advance directives (69 vs. 48%, $P=0.006$). Median time to AD completion was 46 vs. 238 days ($P=0.02$). There were no differences in survival and a trend toward lower costs.
		Jadad: 3	Number enrolled: 275 randomized Number in analysis of results: 275 Age: mean intervention 71 years Gender: 81% male Race/ethnicity: 88% white, 11% black, and 1% other Disease: 63% cancer, 20% COPD, and 17% CHF Severity: Other than cancer, patients all met criteria of 1 ICU or 2 hospitalizations in the prior 6 months						
Gillick et al., 1999 (88); USA	Not Reported	Pre-post uncontrolled	Number approached: 40	38 NH residents without serious cognitive impairment and their	Patients and surrogates given prioritization of three goals and asked to rank: life prolongation, maintenance of	No control group	Immediately post prioritization	Participation rates in goal setting, choices of goals by patients/surrogates, patient/surrogate agreement.	78% of residents or caregivers were willing to prioritize their goals and were more likely to opt for life prolongation (7) vs. surrogates (1) ($P<0.001$). 6 residents chose not to make prioritizations vs. 2 surrogates.

				surrogates in a 40 bed nursing unit within a 725 bed teaching nursing home.	function, or comfort. Rankings were translated into care by NH					
		Jadad: N/A	Number enrolled: 40 Number included in analysis of results: 38 Age: mean years 88 Gender: 30 Females Race/ethnicity: Not reported Disease: Dementia Severity: Not reported							
Gutheil and Heyman 2005 (107); USA	Partnership for Caring, Samuels Foundation	RCT	Number approached: Not reported	Elders randomly selected from membership lists of 3 senior centers in the Bronx.	Three multidisciplinary sessions including social workers, physicians, attorneys and the patient and their surrogate targeted at assisting higher functioning elders to complete advance care planning	Usual care	Post intervention	Agreement on scenarios, attitudes and knowledge about care planning	Following the intervention, intervention dyads scored higher on agreement, as well as attitudes and knowledge about care planning.	
		Jadad: 1	Number enrolled: 49 elderly-surrogate dyads Number included in analysis of results: 49 dyads Age: mean years elderly persons 72 intervention vs. 74 control							

			Gender: Not reported Race/ethnicity: > 50% African-American Disease: Not reported Severity: Not reported						
Hanson et al., 2005 (105); USA	Duke Endowment, Open Society Institute	Pre-post controlled	Number approached: Disease: Mixed Number enrolled: 9 NHs (7 intervention, 2 control) Number included in analysis of results: 9 NHs, 345 patients Age: mean years 82 intervention and 78 control Gender: Male 19% intervention and 29% control Race/ethnicity: White 74% intervention vs. 62% control Not reported Severity: Severe cognitive impairment 18%	All NHs had existing hospice contacts	Quality improvement intervention observing plan-do-study-act approach to improving palliative care including in services with structured curriculum, monthly strategy / organizational meetings	Usual care	Baseline, 3 and 6 month follow-up	Processes of care	Hospice enrollment increased from 4% of residents at baseline to 7% post-intervention ($P = 0.01$) and pain assessments increased from 18% to 60% ($P < 0.001$). Use of non-pharmacologic pain strategies increased, and documented in-depth discussions about end of life care increased from 4% to 17% of cases ($P < 0.001$). No change in processes was observed at control sites.

			intervention and 26% control						
Heffner and Barbieri, 2001 (111); USA	Not Reported	CCT	Number approached: 1013 rehabilitation programs	284 patients enrolled in 14 cardiovascular rehabilitation programs in 11 states	Pt participation in educational advance care planning programs with materials on importance of planning, discussed living wills and DPAHC documents, and defined the role of a surrogate, and encouraged patients to learn more about advance care planning	Usual care	Two questionnaires administered 6 months apart between (1996-1998)	Completion of living will, durable power of attorney for healthcare, and discussions with their physicians about advance directives and life support care.	Both the educational and control groups demonstrated a larger proportion of patients who had completed living wills, durable power of attorney for healthcare, and discussions with their physicians about advance directives and life support care vs. prior to the study. Neither groups gained confidence, however, that their physicians understood their end-of-life care wishes. Only 8.6% of patients had a negative response to the educational program.
		Jadad: N/A	Number enrolled: Number included in analysis of results: 14 Programs (7 intervention, 7 control) Age: Patients at intervention sites mean 66 years Gender: Male% intervention Race: Not Reported Disease: Mixed Severity: Not Reported						
Heffner et al., 1997 (89); USA	Greenwall Foundation	CCT	Number approached: 105	Pts in pulmonary rehab in two ambulatory/outpatient medical care setting.	Educational workshop on advance directives and other end-of-life issues; Patients given pamphlets, printed living will, durable powers of	Usual care	Baseline and post-workshop	Physician-patient agreement/ understanding on goals of care, including DNR, Patient report of living will and/or DPAHC in chart, Patient report of life-	Intervention patients had an increase ($P < 0.05$) had increase in all 5 outcomes while control patients had increases in 3 of 5 outcomes. Intervention patients more likely to complete living will, 72% to 52%, appoint DPAHC, 86% to 34%, and discuss life-support decisions with physician, 52% to 16%.

attorney for health care; had patient-physician discussions about advance directives and life support, and were asked about impressions that their physicians understood their EOL preferences.

support and/or AD discussion with physician.

Jadad: N/A

Number included in analysis of results: 93
 Age: mean years 70 ± 10.3 yrs
 Gender: 28 Males, 22 Females (intervention)
 Race/ethnicity: Not reported
 Disease: Asthma, COPD, healed TB, post surgery, pulmonary fibrosis
 Severity: Moderate

Holzpfel et al., 2002 (90); USA	Not Reported	Intervention, without comparison group	Number approached: Not reported	Convenience sample of patients in ICU.	4-step protocol for decision making in end-of-life care (e.g., withdrawal of life support). Changes in treatment pattern required agreement.	No comparison group.	Prospective analysis	Simplified acute physiologic score, Use of mechanical ventilation, Use of mechanical ventilation > 48 hours, ICU - length of stay, Death/Mortality, Death after withholding, withdrawing life support (ventilatory/other)	Withdrawal of life support was performed in 17% of ICU patients. Mean ICU stay was 10 days. Formal ICU protocol to withhold and/or withdraw treatment had high degree of surrogate agreement.
		Jadad: N/A	Number included in						

			analysis of results: 475 Age: mean years 57 Gender: 296 Males, 179 Females Race/ethnicity: Not reported Disease: Mixed disease Severity: Severe							
Karel et al., 2004 (106); USA	Not reported	Uncontrolled	Number approached: not reported Number enrolled: 10 Number included in analysis of results: 10 Age: 54-76 years Gender: Not reported Disease: Not reported Severity: Not reported	Convenience sample of veterans	A Values Discussion Guide which focused on health –related values and beliefs, decision makers, and quality of life concerns	N/A	Immediately after completion	Structured interviews	This small sample of veterans found the decision guide helpful and useful, especially prompts related to prior experiences with late life decisions.	
Latimer et al., 1998 (35); Canada	Hamilton Civic Hospitals	Design: RCT	Number approached: 61	All patients under palliative care services in the hospital. Eligibility criteria: knowledge of diagnosis, goals of treatment and prognosis;	Introducing intervention patients to the Patient Care Traveling Record, a passport-like health care summary.	Usual care	2 months	Pain, mood, health care utilization, and patient satisfaction	With the exception of patients over 65 years of age, patients using the Patient Care Traveling Record reported decreased levels of uncertainty on follow-up. There was no additional use of health care services, no differences in mood states, pain relief, or satisfaction with health care.	

		Jadad: 2	<p>Number enrolled: 46</p> <p>Number included in analysis of results: 26 baseline, 21 follow-up</p> <p>Age: 54.6 yrs</p> <p>Gender: 50% Male</p> <p>Race / ethnicity: Not reported</p> <p>Disease: Not reported</p> <p>Severity: Not Reported</p>	<p>prognosis estimated to be 2 months or more;</p> <p>physical and emotional status assessed as adequate to participate; 18 years and older; able to read and write English; able to consent to participate in study.</p>						
Lilly et al., 2003 (91); USA	Brigham and Women's Hospital, Boston	Intervention with comparison group	<p>Number approached: 2,361 consecutively admitted ICU patients</p> <p>Jadad: N/A</p> <p>Number</p>	Consecutive admissions to ICU	Initial and intensive communication sessions of info on clinical status and expected outcomes among providers, patients, families within 72 hrs of ICU admit	Usual care	Baseline with 4 year follow-up	ICU - length of stay, ICU mortality rate, consensus among providers over 4 yrs after intervention implemented.	Intervention decreased LOS in ICU 4 days to 3 days, decreased ICU mortality 31.3% to 18.0% ($P < 0.001$); resulted in fewer therapeutic interventions; and lasted for 4 years following intervention.	

enrolled:
 Number included in analysis of results
 Age: mean years 57 intervention vs. 58 control
 Gender: males 296 / 475 intervention vs. 191 / 396 control
 Race/ethnicity: Not reported
 Disease: Mixed disease
 Severity: Severe

Monteleoni and Clark 2004 (92); USA	Lenox Hill Hospital and the United Hospital Fund	Intervention with historical comparison group.	Number approached: Not reported	All eligible patients from March to September, 2002 and prospective sample of patients March to September, 2003 in a 652 bed acute care hospital.	Quality improvement intervention on utilization of feeding tubes for providers; grand rounds addressing issue of feeding tubes; training of medical residents in EOL (pain management); and one month on geriatrics rotation.	Usual care	One year intervention prior compared with 1 year of historical data.	Feeding tubes placed, particularly in demented patients.	Number of feeding tubes placed decreased by >50%, Number placed in demented patients fell from 40 to 8 after intervention, but number of feeding tubes placed in patients with AD refusing artificial feeding did not change (14-15% of tubes placed before/after intervention). Having an AD did not affect whether patients received feeding tubes even after palliative care intervention to decrease their use in demented patients
		Jadad: N/A	Number included in analysis of results: 85 Mean age: Not Reported Gender: Not Reported Race/ethnicity: Not Reported Disease: Not Reported Severity: Not Reported						

Morrison et Greenwall CCT Number NH social 2 social workers 2 of 4 social Baseline to 6 Patient Intervention social workers' patients more likely to have preferences documented for CPR

al., 2005 (93); Foundation.
USA

approached: Not
reported

workers
educated in
advanced care
planning, had
structured
interviews
with residents
on admission,
after clinical
status change,
and yearly.

in intervention
received education
in advance care
planning using
small-groups and
role play;
structured
discussions with
residents and
proxies at
admission, after
any change in
clinical status, and
at yearly intervals;
structured review
of patients' care
goals at team
meetings;
"flagging" of
advance directives
on NH charts; and
feedback to
providers on
congruence of
care provided and
the preferences of
patients.

workers in
control
received an
educational
training
session on
New York
State law
regarding
advance
directives.

months

documentation of
preferences for CPR,
preferences for
artificial nutrition
and hydration,
intravenous
antibiotics, and
hospitalization; and
concordance of
treatments received
with documented
preferences were
compared for
residents assigned to
intervention and
control social
workers.

(40% vs. 20% $P=0.005$), tube feeding (49% vs. 16% $P<0.001$) and other interventions. Intervention patients less likely to have treatments discordant with wishes (5% vs. 18% $P=0.04$). NH based social worker intervention improved documentation of patient preferences for LST and increasing likelihood that patients received care concordant with their wishes

Jadad: N/A

Number
enrolled: 4
Social Workers
and 139 NH
residents from
single NH.

Number
included in
analysis of
results: 85

Age: Mean years
87 intervention
vs. 86 control

Gender: Male
7/43 intervention
vs. 10/96 control

Race/ethnicity:
White 29/43
intervention vs.
74/96 control

Disease: Diverse
 Severity:
 Charlson 2.8
 intervention vs.
 4.1 control

Pearlman et al., 2005 (94); USA	Department of Veterans Affairs	RCT	Number approached: 34 providers, 848 patients of enrolled providers	Outpatient veterans under care at the VA Puget Sound Health Care System, Seattle, Wash.	An advance care planning workbook (Your Life, Your Choices), motivational counseling by social workers, and cues to providers to discuss advance care plans.	Usual care and an advance care booklet	Baseline with 4 mo follow-up	Health status of patients; patients and proxies preferences for life-sustaining treatments in 5 health states, quality of life under 5 health conditions, preferences for withholding medical nutrition and fluids through tubes, controlling pain even if medication might hasten death, leeway in interpreting instructional directives, and having family members take their own interests into consideration when making surrogate decisions.	The intervention patients reported more advance care planning discussions with their providers (64% vs. 38%; $P < .001$). Living wills were filed in the medical record twice as often in the intervention group (48% vs. 23%; $P < .001$). Provider-patient dyads in the intervention group had higher agreement scores than the control group for treatment preferences, values, and personal beliefs (58% vs. 48%, 57% vs. 46%, and 61% vs. 47%, respectively; $P < .01$ for all comparisons). The agreement scores for the proxy-patient dyads did not differ between groups for treatment preferences and values, but were higher in the intervention than the control group for personal beliefs (67% vs. 56%).
		Jadad: 2	Number enrolled: 24 (15 physicians, 9 nurse practitioners); 280 patients						
			Number included in analysis of results: 248 patients						
			Age: mean years 69 intervention vs. 70 controls						
			Gender: male 95% both groups						
			Race / ethnicity:						

			white 89% intervention vs. 88% control Disease: Diverse Severity: Almost 40% of both groups rated health fair or poor						
Perry et al., 2005 (95); USA	Robert Wood Johnson Foundation, National Kidney Foundation of Michigan	3 arm RCT Jadad: 2	Number approached: 280 patients from 21 dialysis centers Number enrolled: 203 patients from 21 dialysis centers Number included in analysis of results: 203 patients Age: mean years 44-45 among groups Gender: male 54-46% among groups Race / ethnicity: African- American 37- 39% among groups Disease: End stage renal disease Severity: Dialysis dependent	Patients recruited from community dialysis centers that were selected because of social work availability	Advance directive peer mentoring vs. printed materials prepared by the National Kidney Foundation	Usual care	Baseline and 2- 4 months later	Well-being, satisfaction, death acceptance, and AD completion	Significantly influenced the completion of ADs overall compared with distributing standard printed material or no specific designed intervention. However, the influence was most prominent among African Americans, not only increasing actual completion of ADs ($P < 0.001$) and comfort discussing ADs ($P < 0.01$), but also improving subjective well-being ($P < 0.05$) and anxiety ($P < 0.05$) during the study period. Results did not appear among white patients, although printed material on ADs decreased reported suicidal ideation ($P < 0.05$).
Ratner et al., 2001 (96);	Allina Foundation	Uncontrolled intervention	Number approached: Not	Patients identified by	Formally structured social	N/A	Baseline and	Chart based	83 patients (99%) were willing to complete an AD and of 54 patients expressing a clear

USA			reported	home health agency as having life-limiting illness and referred for social worker assessment	worker visits for discussion of advance care planning with patients and their families during home visits, Documentation of health care directives using an advance care planning tool.		minimum 6 mo. follow-up (median follow-up: 191 days)	completion of advance directive, Consensus among providers, Time between documenting an advance care plan and death, Location of death.	preference, 46 (82%) wanted to die at home and 43 (75%) did die at home. Discussions in patients home increase advance directive completion and patient desire for death at home.
		Jadad: N/A	Number enrolled: 84 Number included in analysis of results: 84 Age: Mean years 75 (range: 37-94) Gender: 51% Female. Disease: Various Severity: Life-limiting illness not on hospice Disease: cancer (55%), cardiac, pulmonary, neurology, other Severity: Unclear Race: Not reported						
Schneiderman et al., (103) 2003; USA	Agency for Healthcare Research and Quality	RCT	Number approached: 551	Consecutive ICU patients at 7 US hospitals referred by nurses who identified patients with potential value laden conflicts	Ethics consultations by individuals with advanced training or experience in bioethics	Usual care	Following death or discharge (1-2 weeks)	Hospital and ICU days, use of life sustaining treatments, perceptions of experiences with care and consultation from providers and family	No difference in mortality, but reduced hospital (-2.95 $P=0.01$) and ICU (-1.44, $P=0.03$) days and ventilatory support (-1.7 days, $P=0.03$) 87% of providers and surrogates agreed consultation was helpful in addressing conflicts.
		Jadad: 3	Number						

enrolled: 551
 Number in analysis of results: 546
 Age: mean years intervention 68 vs. control 68
 Gender
 Race/ethnicity: intervention white 63% vs. control 63%
 Disease: Diverse
 Severity: Advanced (63% of intervention and 58% of control patients died in hospital)

Schneiderman et al., (104) 2000; USA	Agency for Healthcare Policy and Research	RCT	Number approached: Not reported	Consecutive ICU patients at 1 US hospital referred by nurses who identified patients with potential value laden conflicts	Ethics consultations by individuals with advanced training or experience in bioethics	Usual care	Following death or discharge (2-4 weeks)	Hospital and ICU days, use of life sustaining treatments, perceptions of experiences with care and consultation from providers and family	No difference in mortality, but reduced hospital and ICU days and lower use of life sustaining treatment. Most providers and patients found the experience helpful.
		Jadad:2	Number enrolled: 74 Number in analysis of results: 70 Age: Mean years, intervention 46 vs. control 52 Gender Race/ethnicity: intervention white 40% vs. control 43% Disease: Diverse						

			Severity: Advanced (60% of patients in both groups died in hospital)						
Schwartz et al., 2002 (97); USA	Fairlawn Foundation U Mass Memorial Foundation and the Stoddard Charitable Trust	RCT	Number approached: 337	Ambulatory elderly patients in 2 geriatrician practices and an independent living facility	Facilitated "Respecting Choices" interview with informational pamphlet Patients/surrogates discussed advance care plans with trained nurse and given healthcare proxy form.	30 Controls given only proxy form.	Baseline and 2 months follow-up	Attitudes towards end of life decision making (questionnaire), Patient-surrogate concurrence in end-of-life care, Change in treatment preferences.	Intervention achieved higher congruence between agents and patients in their understanding of patients' end of life care preferences. Intervention patients became less willing to undergo life-sustaining treatments for a new serious medical problem and less willing to tolerate poor health states.
		Jadad: 3	Number enrolled: 66 Number in analysis of results: 61 (31 intervention) Age: mean years 80 intervention vs. 81 control Gender: male 3/31 intervention vs. 7/30 control Race: white 97% intervention vs. 90% control Disease: Mixed Severity: Not Reported						
Song et al., 2005 (98); USA	Sigma Theta Tau International	RTC	Number approached: 80 patient-surrogate dyads	Patients and their care-givers (as dyads) undergoing semi-elective cardiac surgery who were > 50 years of age, had an adult surrogate, and	Patient-centered advanced care planning intervention	Usual care	Baseline and immediately post intervention	Pt/surrogate agreement on goals of care, advance care planning knowledge, anxiety, patient decisional conflict	Intervention improved patient/surrogate agreement (Delta [means what?]=1.27, P <0.01) reduced decisional conflict (Delta=-0.77, P <0.05). No difference in anxiety or advance care planning knowledge. Advance care planning intervention can improve patient/surrogate agreement without increasing anxiety.

		Jadad: N/A	Number enrolled: 32 dyads Number in analysis of results: 32 dyads Age: mean years 70 intervention vs. 68 control Gender: Male intervention 50% vs. 56% control Race: Not Reported Disease: Coronary artery or valve surgery Severity: Not Reported	were capable of decision-making in acute care hospital					
Soskis 1997 (99); USA	Not Reported	Uncontrolled intervention	30 elderly or AIDS patients with services from non-profit social service agency, receiving home health, case management, and meals.	Convenience sample	Pts given opportunity to complete advance directive in home with trained case managers and provided assistance in decision-making and form completion	N/A	Post only.	Completion of advance directive and treatment preferences.	23/31 patients completed advance directive, many felt that form did not fully capture treatment preferences. Advance directive forms do not always fully capture treatment preferences
		Jadad: N/A	Age: Not Reported Gender: Not Reported Race: Not Reported Disease: Not Reported Severity: Not Reported						
Stuart et al., 2003 (100);	Robert Wood Johnson	Pre-post uncontrolled	Number approached: 360	Consecutive patient	Implementing the "CHOICES"	No control/comparison	42 month demonstration	Location of death, Use of hospice and	Preliminary evidence supports the program's feasibility and acceptability to patients, families, physicians, and agency partners.

USA	Foundation		referred to intervention	referral, 51% referred by physician, 31% referred by Case Manager	home care management program.	group		palliative care.	
		Jadad: N/A	Number enrolled: 208 Number included in analysis of results: 208						
			Age: Mean years 81 Race: 60% White, 32% Black, 5% Asian, 2% Latino						
			Gender: 38% Male Disease: Mixed disease- 80% non-cancer Severity: Advanced						
Tolle et al., 1998 (101); USA	Greenwall Foundation and Collins Foundation	Uncontrolled intervention	Number approached: Not reported	Convenience sample from 8 nursing homes in one state (3 urban, 1 suburban, 4 rural) with a total of 629 residents. Retrospective chart review to identify those wanting "comfort only"	POLST form - designed to convey treatment preferences on one page when patients transferred.	N/A	Pts followed for one year re hospitalizations, health status changes, deaths	Location of death, use of life-sustaining treatments, extend life	While 38 patients died, none received CPR, ventilator support, or ICU. 2% hospitalized to extend life and 5% died in acute care hospital. 24 patients hospitalized, 85% for comfort, 15% to POLST was respected regarding CPR. Pts had low levels of hospital transfers
		Jadad: N/A	Number enrolled: 108 residents of 8 NHs Number						

included in analysis of results: 108 residents
 Age: Mean years 83
 Gender: Male 31%
 Race: White 98%
 Disease: Mixed
 Severity: Not Reported

Treece et al., 2004 (108); USA	Greenwall Foundation and National Institute of Nursing Research	Intervention trial with no comparison group. Jadad: N/A	Number approached: Not reported Number enrolled: 117 deaths (76 post-intervention and 41 control) and 134 clinicians Number included in Analysis: 117 patients and 134 clinicians Age: mean years 57 years intervention vs. 57 control Gender: male intervention 57% vs. 61 % control Race / ethnicity: White	Patients who died in a medical ICU at a county owned, university operated tertiary, level I trauma center with 353 beds, and their providers	The development and implementation of a standardized order form for the withdrawal of life support when the patient was expected to die.	N/A	Pre/Post survey and medical chart review	Physician and RN satisfaction with the form; RN perspective on deceased patients' "quality of dying and death; pre/post intervention	Among RNs reporting that the form was used (n = 73), most (84%) reported that the order form was helpful and they were satisfied with the form. Almost all physicians (95%) reported the form helpful and >70% found 3 of 4 sections helpful. Quality of dying scores on 41 patients' pre and 76 deaths post intervention did not significantly change. While the form was helpful, it did not improve RN assessment of patients dying experience.
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			intervention 82% vs. 76% control Disease: Mixed Severity: Advanced						
Weisbord et al., 2003 (102); USA	Project on Death in America Faculty Scholars program, Greenwall Foundation Ladies Hospital Aid Society of Western Pennsylvania, the International Against Cancer, Yamagiwa-Yoshida Memorial International Cancer Study Fellow-ship, and the LAS Trust Foundation	Uncontrolled intervention Jadad: N/A	Convenience sample of dialysis patients in ambulatory/outpatient medical care setting. Number approached: 39 patients Number enrolled: Number used in analysis of results: Age: Mean years 67±9.6 (range: 46-80) Gender: 12 Females/7 Males Race: 10 White/9 other Disease:	Convenience sample of dialysis patients	Palliative care physicians performed an initial evaluation during dialysis visit, Written recommendations developed at weekly team meeting given to patient and their nephrologists.	N/A	Baseline and 4 weeks later	Patient report of advance directives discussion with physician, Completion of advance directive or durable power of attorney and treatment preferences, Satisfaction with palliative care.	Advance care planning discussions between nephrologists and patients/surrogates increased, AD did not increase. No differences were observed in symptoms, Health-Related Quality of Life, or number of patients establishing advance directives as a result of the intervention.

Diabetes
Severity: Severe,
6 patients (32%)
died by end of
study
Disease: Kidney
disease/ Renal
Failure
Severity:
Modified
Charlson all > 8

AD = Advance directive; CCT = Controlled Trial; CHF = congestive heart failure; COPD = Chronic obstructive pulmonary disease; DNR= Do Not Resuscitate; DPAHC = Durable Power of Attorney for Health Care; ED = emergency department; EOL = End of Life; ICU = Intensive Care Unit; LOS = Length of Stay; LST = Life-sustaining treatment; N/A = Not applicable; NH = Nursing Home; POLST = Physician Orders for Life Sustaining Treatment; RCT = Randomized Controlled Trial; SD = Standard Deviation; VA = Veterans Administration.