References

1. Final Chapter: Californians' Attitudes and Experiences with Death and Dying. *California Health Care Foundation*. https://www.chcf.org/publication/final-chapter-californians-attitudes-and-experiences-with-death-and-dying/. Published 2012. Accessed July 2, 2019.

- **Study Design:** Survey
- **Participants:** 1,669 Californians aged 18+
- **Results:**
    - 61% of people 65+ say they want to discuss end-of-life care with their doctor
    - 13% of people 65+ reported actually having an end-of-life care discussion
    - 70% said they would prefer to die at home, but only 32% of deaths in California happen at home

2. Davison SN. End-of-Life Care Preferences and Needs: Perceptions of Patients with Chronic Kidney Disease. *Clinical Journal of the American Society of Nephrology*. 2010;5(2):195-204.

- **Study Design:** Survey
- **Participants:** 584 stage 4 and 5 CKD patients
- **Results:**
    - 83.4% of patients reported not knowing what palliative care is
    - 71.8% of patients reported not knowing what hospice is
    - <10% of patients reported an end-of-life conversation with their nephrologist in the past 12 months

3. Khandelwal N, Curtis JR, Freedman VA, et al. How Often Is End-of-Life Care in the United States Inconsistent with Patients' Goals of Care? *Journal of Palliative Medicine*. 2017;20(12):1400-1404.

- **Study Design:** Retrospective analysis of survey data
- **Participants:** 1212 nationally representative bereaved family members of patients aged 65+
- **Measures:** Survey assessing treatment decisions, consistency with patients' wishes, unmet needs and quality of care
- **Results:**
    - 13% stated care was inconsistent with decedent's wishes
    - Death at home was more likely to represent consistent care and death in the hospital was more likely to represent inconsistent care
    - Respondents reporting inconsistent care were more likely to:
        - Rate quality of care as fair or poor
        - Report unmet needs for pain management
        - Report concerns with clinician communication

4. Teno JM, Fisher ES, Hamel MB, Coppola K, Dawson NV. Medical Care Inconsistent with Patients' Treatment Goals: Association with 1-Year Medicare Resource Use and Survival. *Journal of the American Geriatrics Society*. 2002;50(3):496-500.

- **Study Design:** Secondary analysis of interview data
- **Participants:** 1185 seriously ill Medicare beneficiaries
- **Measures:** Interviews assessing patients' preferred approaches to care and whether they perceived care as consistent with these preferences. Medicare Part A and Part B costs for up to 1 year were calculated and adjusted for cost differences across hospitals and over time.
- **Results:**
    - 41% of those who preferred comfort care reported that care was consistent with their preferences

- Those who preferred comfort care but believed their care was inconsistent with their wishes had higher 1-year costs than those who believed their care was consistent ($92,442 vs. $52,098)

5. Fulmer T, Escobedo M, Berman A, Koren MJ, Hernández S, Hult A. Physicians' Views on Advance Care Planning and End-of-Life Care Conversations. *Journal of the American Geriatrics Society*. 2018;66(6):1201-1205.

- **Study Design:** Random sample telephone survey
- **Participants:** 736 physicians actively practicing medicine and regularly seeing patients 65+
- **Measures:** 37-item telephone survey constructed by professional polling group
- **Results:**
  - 99% of physicians agreed that it is important to have end-of-life conversations
  - 75% believe it is the physicians' responsibility to initiate end-of-life conversations
  - 29% reported that they have formal training for end-of-life conversations

6. Paladino J, Bernacki R, Neville BA, et al. Evaluating an Intervention to Improve Communication Between Oncology Clinicians and Patients With Life-Limiting Cancer. *JAMA Oncology*. 2019;5(6):801.

- **Study Design:** Cluster randomized controlled trial
- **Participants:** 91 clinicians, 278 patients with cancer and high risk of death
- **Intervention:** 2.5-hour didactic session on "Challenges in discussing advance care planning/values and goals" followed by practice using the Serious Illness Conversation Guide. On-call coaching and debriefing for clinicians was available throughout the study.
- **Measures:** 1) Documentation of at least 1 serious illness conversation before death, 2) timing of initial conversation 3) quality of conversation 4) accessibility in EMR. To measure quality of conversation, content was coded into thematic domains using Nvivo and the mean number of conversations and domains per patient were compared.
- **Results:**
  - Compared to control, intervention patients had:
    - Higher proportion of documented discussions (96% vs 79%)
    - Conversations a median of 2.4 months earlier (143 days vs 71 days)
  - Intervention group's documentation was more comprehensive and patient centered:
    - Greater focus on values or goals (89% vs 44%)
    - Greater focus on prognosis or illness understanding (91% vs. 48%)
    - Greater focus on life-sustaining treatment preferences (63% vs 32%)
  - Documentation was more accessible in EMR (61% vs 11%)

7. Curtis JR, Downey L, Back AL, et al. Effect of a Patient and Clinician Communication-Priming Intervention on Patient-Reported Goals-of-Care Discussions Between Patients With Serious Illness and Clinicians. *JAMA Internal Medicine*. 2018;178(7):930.

- **Study Design:** Multicenter cluster randomized controlled trial in outpatient clinics
- **Participants:** 132 clinicians, 537 patients with serious illness
- **Intervention:** Patients completed a survey to identify preferences, barriers and facilitators for end-of-life conversations. Results were synthesized into "Jumpstart-Tips" guide provided to clinicians with abstract of patient answers and relevant communication tips based on VitalTalk
- **Measures:** Patient-reported occurrence of goals of care conversation, patient-reported quality of communication (QOC questionnaire) at 2 weeks, and patient assessment of goal-concordant care at 3 months (SUPPORT)
- **Results:**
  - Compared to control, the intervention group showed a significant increase in:
    - Goals-of-care discussion (74% vs 31%)

    - Medical record documentation (62% vs 17%)
    - Patient-rated quality of end-of-life discussions (4.6 vs 2.1 on 10-point scale)
    - Patient-rated goal-concordant care at 3 months for patients with stable goals (73% vs 57%)

8. Goelz T, Wuensch A, Stubenrauch S, et al. Specific Training Program Improves Oncologists' Palliative Care Communication Skills in a Randomized Controlled Trial. *Journal of Clinical Oncology*. 2011;29(25):3402-3407.

- **Study Design:** Randomized controlled trial
- **Participants:** 41 physicians
- **Intervention:** 11-hour COM-ON-p workshop focused on facilitated small group skills practice with simulated patients and defined learning goals. Physicians also received a 30-minute individual coaching session.
- **Measures:** Pre- and post-assessment standardized simulated patient consultations were recorded and evaluated using COM-ON behavior checklist.
- **Results:**
    - Intervention group improved significantly more than control (an average of 0.5 points on a 5-point scale) in:
        - Global communication skills, including all three sections of COM-ON checklist
        - Skills specific to the transition to palliative care
        - Involvement of significant others in discussion

9. Back AL. Efficacy of Communication Skills Training for Giving Bad News and Discussing Transitions to Palliative Care. *Archives of Internal Medicine*. 2007;167(5):453.

- **Study Design:** Uncontrolled before-after study
- **Participants:** 106 medical oncology fellows from 62 institutions
- **Intervention:** Oncotalk, a 4-day workshop emphasizing skills practice with simulated patients and reflective discussions. The workshop taught cognitive road maps for giving bad news and discussing transitions to palliative care.
- **Measures:** Pre- and post-workshop assessments consisting of 2 standardized patient encounters each. Encounters were analyzed using coding schemes consisting of identifiable, observable behaviors for each step in giving bad news (SPIKES), transitions to palliative care, and empathic expressions (NURSE)
- **Results:**
    - Participants acquired a mean of 5.4 bad news skills (out of 14) and 4.4 transition skills (out of 16)
    - Significant increase in naming patient emotion (27% before workshop, 60% after) and exploring patient's emotional state (28% before workshop, 75% after)
    - Blind coders were 91% accurate in identifying whether a standardized patient encounter occurred before or after the workshop

10. Alexander SC, Keitz SA, Sloane R, Tulsky JA. A Controlled Trial of a Short Course to Improve Residents' Communication With Patients at the End of Life. *Academic Medicine*. 2006;81(11):1008-1012.

- **Study Design:** Non-randomized controlled trial
- **Participants:** 56 internal medicine residents
- **Intervention:** 16-hour palliative care training with small-group lectures, discussion and role-play. Topics included pain and symptom management, communication skills, and patient and family interactions.

- **Measures:** Pre- and post-intervention standardized patient encounters were recorded and analyzed for communication skills in delivering bad news, responding to emotional cues, general communication skills and discussing patient treatment preferences.
- **Results:**
    - Intervention group had significantly higher summary scores than control group (9.58 vs. 8.37)
    - Compared to baseline, the intervention group showed a significant increase in:
        - Overall skill rating (1.77-point increase on 17-point scale)
        - Delivery of bad news (1.28-point increase on 7-point scale)
        - Giving and responding to emotional cues (0.6-point increase on 5-point scale)
        - Discussing probability and clinical scenarios (.73-point increase on 4-point scale)

11. Fallowfield L, Jenkins V, Farewell V, Saul J, Duffy A, Eves R. Efficacy of a Cancer Research UK communication skills training model for oncologists: a randomised controlled trial. *The Lancet*. 2002;359(9307):650-656.

- **Study Design:** Randomized controlled trial
- **Participants:** 160 oncologists, 2407 patients from 34 UK cancer centers
- **Intervention:** 3-day communication skills training, consisting of structured feedback, videotape review of consultations, role-play with simulated patients, interactive group demonstrations, and discussion led by a trained facilitator
- **Measures:** Pre- and post-course assessment periods consisting of 6-10 videotaped patient consultations. Consultations were then analyzed using the medical intervention process system (MIPS) to categorize utterances into content categories and modes of exchange.
- **Results:**
    - Compared to control, intervention group recorded significantly more:
        - Focused questions (34% more than control)
        - Expressions of empathy (69%)
        - Appropriate responses to patient cues (38%).
    - Doctors attending the course were 1.46 times more likely than control to respond appropriately to patient cues

12. Bays AM, Engelberg RA, Back AL, et al. Interprofessional Communication Skills Training for Serious Illness: Evaluation of a Small-Group, Simulated Patient Intervention. *Journal of Palliative Medicine*. 2014;17(2):159-166.

- **Study Design:** Uncontrolled before-after study
- **Participants:** 145 Residents, fellows and nurse practitioner students
- **Intervention:** Modelled after Oncotalk. 5 to 8 half-day sessions with didactic overview including roleplay demonstration, followed by skills practice with simulated patient and reflective discussion. Topics: building rapport, giving bad news, goals of care and AD, DNR, family conferences, transition to hospice, and bereavement support.
- **Measures:** Pre- and post-course simulated patient interviews were recorded and analyzed by trained coders based on skills related to communicating bad news (SPIKES) and expressing empathy (NURSE).
- **Results:**
    - Compared to baseline, participants' scores improved in 8 of 11 coded behaviors, including:
        - Asking questions about patient's emotions (71% vs. 48.3%)
        - Assuring patient of support through disease process (50.3% vs. 26.9%)
        - Providing empathic statements (69% vs. 49.3%)
        - Assessing patient understanding of illness (39% vs. 22.8%)
        - Showing respect for patient (14.5% vs. 3.4%)
        - Naming emotion (42.1% vs. 31.7%)

13. Gibon A-S, Merckaert I, Liénard A, et al. Is it possible to improve radiotherapy team members' communication skills? A randomized study assessing the efficacy of a 38-h communication skills training program. *Radiotherapy and Oncology: Journal of the European Society for Therapeutic Radiology and Oncology*. 2013;109(1):170-177.

- **Study Design:** Randomized controlled trial
- **Participants:** 80 members of radiotherapy team
- **Intervention:** 38-hour communication skills training over a 4-month period. Sessions were in small groups (5-9), learner-centered, skills-focused and practice-oriented. A 16-hour patient-oriented communication skills training module was followed by a 22-hour team-resource-oriented communication skills training module.
- **Measures:** Pre- and post-training simulated cancer patient encounters were audiotaped, transcribed and analyzed by LaComm software. Software used word count and word combination strategy to identify utterance types and content. Team members also filled out a self-efficacy questionnaire.
- **Results:**
    - Compared to baseline, participants showed significant increase in rate of:
        - Open directive, leading, checking, and total questions (RR = 1.69)
        - Expression of empathy (RR = 4.05)
        - Emotional words (RR=1.32)
    - Participants showed significant increase in self-efficacy to communicate with simulated patient about concerns and distress (z = -2.26), and team resources (z = -2.65)

14. Gelfman LP, Lindenberger E, Fernandez H, et al. The Effectiveness of the Geritalk Communication Skills Course: A Real-Time Assessment of Skill Acquisition and Deliberate Practice. *Journal of Pain and Symptom Managemen*t. 2014;48(4):738-744.e6.

- **Study Design:** Uncontrolled, before-after study
- **Participants:** 9 first-year Palliative Medicine and Geriatrics fellows
- **Intervention:** 2-day Geritalk workshop consisting of didactic presentations and demonstrations, small-group communication skills practice with simulated patients, and future skills practice commitment. Topics included basic communication skills, giving bad news, negotiating goals of care, and forgoing life-sustaining treatment.
- **Measures:** Pre- and post-intervention patient conversations were directly observed and scored using the Family Meeting Communication Assessment Tool.
- **Results:**
    - Participants gained an average of 6.8 skills out of 31 (>20% improvement)
    - Compared to baseline, participants showed significantly improvement in:
        - Empathic responses (100% vs. 22% of participants)
        - Checks for understanding (100% vs. 44%)
        - Time management (75% vs 33%)
        - Goal-setting (71% vs 50%)

15. Tulsky JA, Arnold RM, Alexander SC, et al. Enhancing Communication Between Oncologists and Patients With a Computer-Based Training Program. *Annals of Internal Medicine*. 2011;155(9):593.

- **Study Design:** Randomized controlled trial
- **Participants:** 48 medical, gynecologic and radiation oncologists, 264 patients with advanced cancer
- **Intervention:** Interactive, CD-ROM communication skills training program. Program consisted of 5 modules, each focused on skill introduction, demonstration, and tailored feedback based on each oncologists' previously recorded patient conversations.

- **Measures:** Pre- and post-intervention patient visits were recorded and analyzed for empathic statements and responses to empathic opportunities (NURSE). One week after their visit, patients completed a telephone survey evaluating their oncologist regarding trust, perceived empathy, therapeutic alliance, and perceived knowledge of patient.
- **Results:**
    - Compared to control, oncologists in the intervention group showed an increase in:
        - Empathic statements (relative risk = 1.9)
        - Likelihood to respond to negative emotions empathically (odds ratio = 2.1)
        - Patient-rated trust (mean difference of 0.1 on 5-point scale)
        - Patient-rated perceived empathy (mean difference of 0.2 on 5-point scale)

16. Epstein RM, Duberstein PR, Fenton JJ, et al. Effect of a Patient-Centered Communication Intervention on Oncologist-Patient Communication, Quality of Life, and Health Care Utilization in Advanced Cancer. *JAMA Oncology*. 2017;3(1):92-100

- **Study Design:** Cluster randomized controlled trial
- **Participants:** 38 medical oncologists and 265 patients with advanced nonhematologic cancer
- **Intervention:** 1) 2-session, individualized communication training consisting of in-office training using a brief video and feedback from simulated patients. 2) 1-hour patient/caregiver coaching session incorporating a question prompt list. Interventions focused on patient engagement, responding to emotion and informing patients about prognosis and treatment options.
- **Measures:** First oncologist visit after training (intervention) or study enrollment (control) were recorded and analyzed using communication skills checklists (APPC, Verona VR-CoDES, PTCC Informing subscale, PTCC Balanced Framing subscale)
- **Results:**
    - Compared to control, intervention group showed significant increase in:
        - Engaging statements (44% increase)
        - Responses to emotion (71% increase)
        - Statements regarding prognosis and treatment choices (38% increase)

17. Boissy A, Windover AK, Bokar D, et al. Communication Skills Training for Physicians Improves Patient Satisfaction. *J Gen Intern Med*. 2016; 31(7): 755-61.

- **Study Design:** Observational study
- **Participants:** 3488 physicians
- **Intervention:** 8-hour block of interactive didactics, live or video skill demonstrations and small group and large group skills practice sessions using a relationship-centered model
- **Measures**: Physicians completed pre- and post-intervention self-assessments of communication skills, knowledge and attitudes, Jefferson Scale of Empathy (JSE), Maslach Burnout Inventory (MBI), and post-course satisfaction. Patient-rated care experience was assessed six months pre- and post- course using HCAHPS (in-patient care) and CGCAHPS (provider-specific).
- **Results:**
    - Compared to control, intervention group showed significant improvement in:
        - CGCAHPS scores (92.09 vs 91.09), specifically in conveying clear information and understanding patient's medical history
        - Respect domain of HCAHPS (91.09 vs. 88.79)
    - Physicians participating in intervention showed an improvement in:
        - Self-efficacy
        - Empathy
        - Burnout, including all three domains: emotional exhaustion, depersonalization and personal achievement

18. Sullivan AM, Rock LK, Gadmer NM, et al. The Impact of Resident Training On Communication with Families in the Intensive Care Unit: Resident and Family Outcomes. *Ann Am Thorac Soc.* 2016;13(4):512-21.

- **Study Design:** Prospective interventional study
- **Participants:** 149 internal medicine residents and 237 family members of critically ill patients
- **Intervention:** Weekly communication training program (4 hours total) during ICU rotation, including interactive discussion and role play with immediate feedback from simulated family members.
- **Measures:** Family members who met with residents completed a survey or interview evaluating their care experience. Residents attending none or one of the sessions were compared with those who attended two or three of the sessions.
- **Results:**
    - Compared to residents who completed one or no sessions, those who completed two or three sessions were more likely to have "fully met" the informational and emotional needs of family members (84% vs 25%)

19. Sullivan AM, Lakoma MD, Billings JA, Peters AS, Block SD. Teaching and Learning End-of-Life Care: Evaluation of a Faculty Development Program in Palliative Care. *Academic Medicine*. 2005;80(7):657-668.

- **Study Design:** Uncontrolled, before-after study
- **Participants:** 149 medical professionals (MD, RN, NP, PhD, MSW)
- **Intervention:** Two 1-week, full-time on-site sessions separated by six months that included an interim distance-learning component. Sessions focused on fundamental clinical and educational aspects of palliative care, experiential learning in clinical and teaching skills, and end-of-life communication skills.
- **Measures:** Surveys from 3 time points (pre-session 1, post-session 1, post-session 2) assessed physicians self-rated skills
- **Results:**
    - Statistically significant improvements with large effect sizes on nearly all measures (0.7–1.8-point increase on a 5-point scale)
    - Compared to baseline, self-rated preparation increased for:
        - Providing end-of-life care (3.0 to 4.2 on a 5-point scale)
        - Teaching end-of-life care (2.6 to 4.3 on a 5-point scale)

20. Arnold RM, Back AL, Barnato AE, et al. The Critical Care Communication project: Improving fellows' communication skills. *Journal of Critical Care*. 2015;30(2):250-254.

- **Study Design:** Uncontrolled before-after study
- **Participants:** 38 pulmonary and critical care fellows
- **Intervention:** 3-day communication skills workshop involving brief didactic talks, faculty demonstration of skills and faculty-supervised small group skills practice with simulated families
- **Measures**: Participants rated their skill levels via pre-post survey in 11 core communication tasks using a 5-point Likert scale
- **Results:**
    - Participants reported improvement in all 11 communication skills, but not in treating pain, a competency not addressed in the workshop that was used as an assessment of reporting bias
    - 95% of participants reported improvement in at least 1 skill

21. Fallowfield L, Jenkins V, Farewell V, Solis-Trapala I. Enduring impact of communication skills training: results of a 12-month follow-up. *British Journal of Cancer*. 2003;89(8):1445-1449.

- **Study Design:** Follow-up study
- **Participants:** 74 of original 80 doctors randomized to communication skills training course
- **Measures:** Assessment period consisting of 6-10 videotaped patient consultations occurring 12 months after previous assessment (3 months post-course). Consultations were then analyzed using the medical intervention process system (MIPS) to categorize utterances into content categories and modes of exchange.
- **Results:**
    - 15 months post-course, intervention participants continued to:
        - Respond appropriately to patient-led cues (58% at 3 months, 54% at 12 months)
        - Ask significantly more focused (4.79 at 3 months vs 4.63 at 12 months), focused and open (6.47 vs. 6.2) and leading (1.22 vs 1.09) questions

22. Detering KM, Hancock AD, Reade MC, Silvester W. The impact of advance care planning on end of life care in elderly patients: randomised controlled trial. *BMJ*. 2010;340:c1345.

- **Study Design:** Randomized controlled trial
- **Participants:** 309 inpatients aged 80+
- **Intervention:** Usual care plus facilitated advanced care planning. A trained advance care planning facilitator (nurse or allied health worker), in collaboration with doctors, helped patients reflect on goals, values, beliefs and discuss/document future choices regarding treatment.
- **Measures:** Compliance was determined by medical records of deceased patients and family-reported quality of end-of-life care questionnaire. Families also completed a 5-question survey on patient satisfaction and the impact of patient's death on relatives (Impact of Events Scale, Hospital Anxiety and Depression Scale)
- **Results:**
    - Compared to control, in the intervention group:
        - End-of-life wishes were more likely to be known and followed in (86% vs 30%)
        - Patient and family satisfaction was significantly higher (94% vs 65.5% of patients were very satisfied)
        - Family members of patients reported less symptoms of post-traumatic stress, depression, and anxiety

23. Mack JW, Weeks JC, Wright AA, Block SD, Prigerson HG. End-of-Life Discussions, Goal Attainment, and Distress at the End of Life: Predictors and Outcomes of Receipt of Care Consistent With Preferences. *Journal of Clinical Oncology*. 2010;28(7):1203-1208.

- **Study Design:** Longitudinal multi-institutional cohort study
- **Participants:** 325 patients with advanced cancer
- **Measures:** Measured baseline preferences (life-extending vs. symptom-directed care) and actual end-of-life care received. Also measured patient-reported end-of-life discussions and caregiver-reported patient quality of life.
- **Results:**
    - Patients who discussed EOL care with a physician were more likely to receive care that was consistent with their preferences, both in the full sample (odds ratio = 2.26) and among patients that were aware they were terminally ill (odds ratio = 3.94)
    - Physical distress was lower among patients who desired and received no life-extending measures

24. Wright AA. Associations Between End-of-Life Discussions, Patient Mental Health, Medical Care Near Death, and Caregiver Bereavement Adjustment. JAMA. 2008;300(14):1665.

- **Study Design:** Multisite longitudinal cohort study
- **Participants:** 332 patients with advanced cancer and their informal caregivers

- **Measures:** Patients conducted baseline interviews assessing occurrence of end-of-life discussions, treatment preferences, advance care planning, and patient-physician relationship. Caregivers were interviewed following patient death to assess quality of patient's death/last week of life. Aggressive medical care and hospice in final week of life were reviewed using electronic medical record.
- **Results:**
    - 37% of patients reported end-of-life discussions
    - End-of-life discussions were associated with:
        - Lower rates of aggressive care measures (ventilation = 1.6% vs 11%, resuscitation = 0.8% vs. 6.7%, ICU admission = 4.1% vs. 12.4%)
        - Less aggressive care was associated with better patient quality of life
    - Earlier hospice enrollment (65.6% vs. 44.5%)
        - Longer hospice stays were associated with better QOL (6.9 vs. 5.6 out of 10)
    - Better patient quality of life was associated with better caregiver quality of life

25. Mack JW, Cronin A, Keating NL, et al. Associations Between End-of-Life Discussion Characteristics and Care Received Near Death: A Prospective Cohort Study. *Journal of Clinical Oncology*. 2012;30(35):4387-4395.

- **Study Design:** Longitudinal cohort study
- **Participants:** 1231 patients with stage 4 lung or colorectal cancer who died within the 15-month study period but survived at least 1 month
- **Measures:** Patients were interviewed at baseline (4 to 6 months after diagnosis) to assess if they had an end-of-life discussion with their physician. Medical records were reviewed for end-of-life discussions and end-of-life care measures.
- **Results:**
    - Patients who had EOL discussions with physicians before the last 30 days of life were:
        - Less likely to receive aggressive care
        - More likely and earlier to receive hospice care

26. Gade G, Venohr I, Conner D, et al. Impact of an Inpatient Palliative Care Team: A Randomized Controlled Trial. *Journal of Palliative Medicine*. 2008;11(2):180-190.

- **Study Design:** Multicenter, randomized controlled trial
- **Participants:** 517 patients with life-limiting illness
- **Intervention:** Team consisting of physician, nurse, social worker and chaplain first assessed patients' needs for symptom management, psychosocial and spiritual support, end-of-life planning and post-hospital care. Team then met with family to discuss plans and form AD. Team finally created care plan, documented it in EMR, and provided consultation to attendings.
- **Measures:** Survey upon study enrollment and within 2 weeks following discharge. Patient questionnaires assessed quality of life, emotional/spiritual support, patient care experience, provider communication. Tracked hospice utilization and computed total health care costs.
- **Results:**
    - Compared to control, the intervention group reported:
        - Higher scores on Care Experience scale (6.9 vs. 6.6 out of 10)
        - Higher scores on Providers Communication scale (8.3 vs 7.5 out of 10)
        - Longer median hospice stays (24 days vs. 12 days)
        - 6-month cost savings of $4855 per patient
        - Fewer ICU stays on hospital readmission (12 vs. 21)

27. 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):733-742.

- **Study Design:** Randomized controlled trial
- **Participants:** 107 patients with newly diagnosed metastatic non-small-cell lung cancer
- **Intervention:** Palliative care integrated with standard oncologic care. Patients had a meeting with a palliative care physician and advanced-practice nurse within 3 weeks of enrollment. Meeting focused on symptom management, goals of care and assistance with decision making regarding treatment. Additional visits were available at the discretion of the patient.
- **Measures:** Quality of life (FACT-L scale) and mood (Hospital Anxiety and Depression Scale) were assessed at baseline and 12 weeks. Data on end-of-life care were collected from EMR.
- **Results:**
    - Compared to control, the intervention group had:
        - Better quality of life (98 vs. 91.5 out of 136)
        - Longer median survival (11.6 months vs. 8.9 months)
        - Fewer depressive symptoms (16% vs. 38% of patients)
        - Lower likelihood to receive aggressive care (33% vs. 54%)

28. Bakitas M, Lyons KD, Hegel MT, et al. Effects of a Palliative Care Intervention on Clinical Outcomes in Patients With Advanced Cancer. *JAMA*. 2009;302(7):741.

- **Study Design:** Randomized controlled trial
- **Participants:** 322 patients with advanced cancer
- **Intervention:** Multi-component palliative care intervention conducted by advanced practice nurse. Consisted of 4 weekly education sessions and monthly follow-up focused on problem solving, communication, symptom management, and advance care planning. Participants were also invited to participate in group medical appointments with a palliative care physician for more in depth discussion.
- **Measures:** Quality of life (FACIT-Pal), symptom intensity (Edmonton Symptom Assessment Scale), and depressive symptoms (Center for Epidemiological Studies-Depression) were assessed at baseline, 1 month and every 3 months until death or study completion
- **Results:**
    - Compared to control, patients assigned to intervention reported:
        - Better quality of life (treatment effect for all patients = 4.6, patients who died = 8.6)
        - Lower symptom intensity (all patients = -27.8, patients who died = -24.2)
        - Fewer depressive symptoms (all patients = -1.8, patients who died = -2.7)

29. Rogers JG, Patel CB, Mentz RJ, et al. The Palliative Care in Heart Failure: (PAL-HF) Randomized, Controlled Clinical Trial. *Journal of the American College of Cardiology*. 2017;70(3):331-341.

- **Study Design:** Randomized controlled trial
- **Participants:** 150 patients with advanced heart failure
- **Intervention:** Usual care plus palliative care intervention. Goals of care were assessed using VitalTalk method, and nurse practitioner and physician coordinated with clinical cardiology team to manage symptom amelioration and goals of care
- **Measures:** Two quality of life measurements (KCCQ, FACIT-Pal), depression and anxiety (Hospital Anxiety and Depression Scale), and spiritual wellbeing (FACIT-Sp) assessed at 6 months
- **Results:**
    - Compared to control, intervention patients reported:
        - Greater improvement in quality of life (KCCQ = 9.49-point difference on a 100-point scale, FACIT-Pal = 11.77-point difference on a 184-point scale)
        - Lower rates of depression (-1.94 points on a 21-point scale) and anxiety (-1.83 points on a 21-point scale)
        - Improved spiritual wellbeing (3.98 points on a 48-point scale)