

APPENDIX ONE




Selected References Describing Palliative Care Impacts




This annotated reference list summarizes key findings from a handful of the hundreds of peer-reviewed studies of the impacts of palliative care. Studies were selected because of the strength of design (randomized trial, well-designed observational study, or systematic review, for example.) Studies that looked at impact across domains—for example, assessing both patient experience and costs of care for the same population—and multi-site studies were also featured. As a body of evidence, these studies demonstrate that palliative care simultaneously improves health, experience, and economic outcomes—the gold standard for quality in health care.






Selected References Describing Palliative Care Impacts





Inpatient Palliative Care: Impacts Across Multiple Domains

Study Characteristics	Patient Experience	Health & Quality of Life Outcomes	Utilization and Cost Outcomes	
 Glenn Gade et al., " Impact of an Inpatient Palliative Care Team: A Randomized Controlled Trial ," <i>Journal of Palliative Medicine</i> 11, no. 2 (Mar. 11, 2008): 180-190.	<p>Randomized, controlled, multi-site trial of inpatient palliative care. Financial outcomes focused on post-acute care, including occurrence and cost of hospitalizations.</p>	<p>Palliative care patients reported better experience of care and better communication with care providers.</p>	<p>Not assessed in this study.</p>	<p>Inpatient palliative care associated with reduced costs over six months, and longer hospice stays (24 days versus 12).</p>
 Sean O'Mahony et al., " The benefits of a hospital-based inpatient palliative care consultation service: preliminary outcome data ," <i>Journal of Palliative Medicine</i> 2005;8(5):1033-1039.	<p>Retrospective evaluation of 592 consecutive patients seen by a hospital-based inpatient palliative care consultation service.</p>	<p>95% of family caregivers surveyed by phone said they would recommend the palliative care service to others.</p>	<p>87% of palliative care recipients had improvement in pain or other symptoms.</p>	<p>Not assessed in this study.</p>
 Peter May et al., " Economics of Palliative Care for Hospitalized Adults with Serious Illness: A Meta-Analysis ," <i>JAMA Internal Medicine</i> 178, no. 6 (June 1, 2018): 820–29.	<p>Re-analysis of data from six prominent studies with more than 133,000 patients using rigorous matching methods.</p>	<p>Not assessed in this study.</p>	<p>Not assessed in this study.</p>	<p>Direct costs of hospital care were 28% lower among palliative care recipients, compared to matched patients that did not receive palliative care.</p>




Study Characteristics	Patient Experience	Health & Quality of Life Outcomes	Utilization and Cost Outcomes
 Peter May et al., “ Evaluating Hospital Readmissions for Persons with Serious and Complex Illness: A Competing Risks Approach ,” <i>Medical Care Research and Review</i> 77, no. 6 (Dec. 1, 2020): 574–83. Retrospective study of impact of inpatient palliative care consults on subsequent hospital admissions.	Not assessed in this study.	Not assessed in this study.	30-, 60-, and 90-day readmission rates were lower for palliative care patients, compared to matched patients who did not receive palliative care.
 R. Sean Morrison et al., “ Palliative Care Consultation Teams Cut Hospital Costs for Medicaid Beneficiaries ,” <i>Health Affairs (Millwood)</i> 30, no. 3 (Mar. 2011): 454–63. Retrospective analysis of inpatient palliative care delivered to Medicaid enrollees at four hospitals.	Not assessed in this study.	Not assessed in this study.	Costs reduced by 11% per case. Patients dying in intensive care units (ICUs) decreased from 58% to 34%. Patients discharged to hospice increased from 1% to 30%.
 Carin van Zyl et al., “ Doing More with the Same: Comparing Public and Private Hospital Palliative Care within California ,” <i>Journal of Palliative Medicine</i> . 2022 Jul;25(7):1064-1071 Retrospective analysis of Palliative Care Quality Network data from six public and 40 private California hospitals reporting on consultations to 4,244 and 38,354 adults, respectively.	Not assessed in this study.	Palliative care teams in both types of hospitals achieved improvements in pain, nausea, dyspnea, and anxiety.	Not assessed in this study.




Outpatient/Clinic-Palliative Care: Impacts Across Multiple Domains

Study Characteristics	Patient Experience	Health & Quality of Life Outcomes	Utilization and Cost Outcomes
 Brian Cassel et al., " Early palliative care for patients with solid tumors and hematological malignancies: Impact on quality metrics and costs of care ," <i>Supportive Care in Cancer</i> 25, suppl. 2 (Apr 22, 2017): 185-185.			
<p>Retrospective analysis of cancer decedents' hospital and clinic utilization, comparing 433 early-palliative care recipients (first contact with palliative care >90 days before death) matched 1:1 to 433 late-palliative care recipients.</p>	<p>Not assessed in this study.</p>	<p>Not assessed in this study.</p>	<p>Late-palliative care patients were 4.8 times more likely to be admitted to the hospital in the final 30 days of life, and 4.2 times more likely to die in the hospital.</p> <p>Direct costs of care in the final 30 days of life for the late-palliative care patients were double the costs for early-palliative care patients.</p>
 David Hui et al., " Impact of timing and setting of palliative care referral on quality of end-of-life care in cancer patients ," <i>Cancer</i> 120, no. 11 (June 2014): 1743-1749.			
<p>Retrospective analysis of health care use by cancer decedents who were referred to specialty palliative care; 1/3 were referred more than 90 days prior to death.</p>	<p>Not assessed in this study.</p>	<p>Not assessed in this study.</p>	<p>Earlier palliative care was associated with lower rates of hospitalization, ICU use, and emergency department visits.</p>
 Dio Kavalieratos et al., " Association Between Palliative Care and Patient and Caregiver Outcomes: A Systematic Review and Meta-analysis ," <i>JAMA</i> . 2016 Nov 22;316(20): 2104-2114.			
<p>Systematic review and meta-analysis.</p>	<p>Palliative care was associated consistently with improvements in patient and caregiver satisfaction.</p>	<p>Palliative care was associated consistently with improvements in advance care planning, quality of life, and symptom burden.</p>	<p>Palliative care was associated consistently with lower health care utilization.</p>

Study Characteristics	Patient Experience	Health & Quality of Life Outcomes	Utilization and Cost Outcomes
 Kieran L. Quinn et al., " Association of Receipt of Palliative Care Interventions With Health Care Use, Quality of Life, and Symptom Burden Among Adults With Chronic Noncancer Illness: A Systematic Review and Meta-analysis ," <i>JAMA</i> .2020 Oct 13;324(14):1439-1450.			
<p>Much of the evidence for outpatient palliative care is focused on cancer. This systematic review and meta-analysis reviewed non-cancer conditions.</p>	<p>Not assessed in this study.</p>	<p>Palliative care was associated with lower symptom burden.</p>	<p>Palliative care was associated with less emergency department use and fewer hospitalizations.</p>
 Colin Scibetta et al., " The Costs of Waiting: Implications of the Timing of Palliative Care Consultation among a Cohort of Decedents at a Comprehensive Cancer Center ," <i>Journal of Palliative Medicine</i> 19, no. 1 (Jan. 2016): 69-75.			
<p>Retrospective observational study of 103 patients who received palliative care at least 90 days before death (mostly in a palliative care clinic), compared to 290 patients who received palliative care within 90 days of death (mostly in hospital.)</p>	<p>Not assessed in this study.</p>	<p>Not assessed in this study.</p>	<p>Earlier palliative care was associated with lower rates of hospitalization, ICU use, and emergency department visits in the final month of life.</p> <p>Inpatient costs for the hospital were 26% lower for the earlier palliative care patients.</p>
 Jennifer S. Temel et al., " Early palliative care for patients with metastatic non-small-cell lung cancer ," <i>New England Journal of Medicine</i> 363, no. 8 (Aug 19, 2010): 733-742.			
<p>Landmark randomized controlled trial that provided outpatient palliative care visits to patients with advanced lung cancer shortly after diagnosis. Controls received standard oncology care.</p>	<p>Not assessed in this study.</p>	<p>Palliative care recipients had better quality of life and lived longer; fewer had depressive symptoms; fewer had aggressive care at the end of life.</p>	<p>Not assessed in this study.</p>
 Camilla Zimmerman et al., " Early palliative care for patients with advanced cancer: a cluster-randomised controlled trial ," <i>Lancet</i> 383, no. 9930 (May 17, 2014): 1721-1730.			
<p>Outpatient palliative care was made available at 12 medical oncology clinics with 12 other clinics used as controls.</p>	<p>At four months, satisfaction with care improved.</p>	<p>At four months, quality of life and symptom severity improved.</p>	<p>Not assessed in this study.</p>

Home-Based Palliative Care: Impacts Across Multiple Domains

Study Characteristics	Patient Experience	Health & Quality of Life Outcomes	Utilization and Cost Outcomes
 Richard Brumley, et al., " Increased satisfaction with care and lower costs: results of a randomized trial of in-home palliative care ," <i>J Am Geriatr Soc.</i> 2007 Jul;55(7):993-1000.	<p>Randomized controlled trial comparing home-based palliative care (HBPC) to usual care. Included 298 homebound individuals with a prognosis of approximately one year or less plus one or more hospital or emergency department visits in the previous 12 months.</p>	<p>HBPC patients reported greater improvement in satisfaction with care at 30 and 90 days after enrollment.</p>	<p>Not assessed in this study.</p> <p>Overall costs were 33% lower for HBPC patients.</p> <p>HBPC patients were more likely to die at home, and were less likely to visit the emergency department or be admitted to the hospital.</p>
 Christopher W Kerr et al., " Cost savings and enhanced hospice enrollment with a home-based palliative care program implemented as a hospice-private payer partnership ," <i>Journal of Palliative Medicine</i> 2014 Dec;17(12):1328-35	<p>Prospective, observational study comparing costs in the final year of life for 149 patients who received HBPC and 537 matched usual care patients.</p>	<p>Not assessed in this study.</p>	<p>Not assessed in this study.</p> <p>Overall costs for HBPC patients were 36% lower in the final three months of life.</p> <p>HBPC patients were more likely to enroll in hospice (70% versus 25%) and had longer lengths of stay in hospice (median 34 versus nine days.)</p>
 Christopher W Kerr et al., " Clinical impact of a home-based palliative care program: a hospice-private payer partnership ," <i>J Pain Symptom Manage.</i> 2014 Nov;48(5):883-92.e1.	<p>Prospective, observational study of 499 patients enrolled in a HBPC program who subsequently died.</p>	<p>Patients, caregivers, and physicians reported high satisfaction (93%-96%) with the program.</p>	<p>Post-enrollment improvements seen in anxiety, appetite, dyspnea, well-being, depression, and nausea.</p> <p>HBPC patients had a longer hospice average length of stay of 77.9 days, compared with all other hospice referrals (average length of stay: 56.5 days).</p>

Study Characteristics	Patient Experience	Health & Quality of Life Outcomes	Utilization and Cost Outcomes
 J Brian Cassel, et al., " Effect of a Home-Based Palliative Care Program on Healthcare Use and Costs ," <i>J Am Geriatr Soc.</i> 2016 Nov;64(11):2288-2295			
Observational, retrospective study using propensity-based matching comparing outcomes for 368 patients who received HBPC to 1,075 patients who received usual care. All were Medicare Advantage beneficiaries.	Not assessed in this study.	Not assessed in this study.	Overall costs were 49% - 59% lower depending on the primary disease.
 Dana Lustbader et al., " The Impact of a Home-Based Palliative Care Program in an Accountable Care Organization ," <i>Journal of Palliative Medicine</i> 2017 Jan;20(1):23-28.			
Retrospective analysis of a HBPC program in a Medicare Shared Savings Program ACO, comparing outcomes for 82 individuals receiving HBPC to 569 receiving usual care.	Not assessed in this study.	Not assessed in this study.	Overall costs for HBPC patients were 37% lower across the final three months of life. HBPC patients had a higher hospice enrollment rate (57% vs 37%), and a longer median hospice length of service (34 days vs 10 days.)
 Keith Kranker et al., " Evaluation of the Medicare Care Choices Model Annual Report 4. " Mathematica report submitted to CMMI April 2022			
Analysis of outcomes for 4,574 Medicare FFS beneficiaries who enrolled in the Medicare Care Choices Model (MCCM) and were known to have died by March 2021. MCCM enrollee outcomes were compared to matched Medicare FFS beneficiaries.			Net Medicare expenditures were 14% lower for MCCM participants. MCCM participants had 26% fewer inpatient admissions, 14% fewer outpatient emergency department visits, 38% fewer ICU days, and were 29% more likely to enroll in hospice.

THANK YOU

**For more information,
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This toolkit was developed with the
generous support of the California Health
Care Foundation



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