

SUMMARY OF STUDIES THAT COMPARED HOME-BASED PALLIATIVE CARE TO USUAL CARE AND ASSESSED ECONOMIC OUTCOMES

Assembled by JB Cassel and KM Kerr 10/22

Paper & Program	Participants	Enrollment in palliative care	Data years	Conditions	Care Model	Methods & Analyses	Cost of care outcomes
Brumley JPM 2003 , Enguidanos 2005 , Cherin 2001 Kaiser Permanente (Southern Calif)	161 recipients and 139 home health comparison pts in decedent analyses. Prognosis 12 months or less.	Mean 102 days (3.4 months)	1999-2000	Cancer (60%), CHF, COPD.	MD, RN, SW.	Prospective but not an RCT; non-equivalent groups. Analyses limited to decedents to reduce differences between the two groups.	Overall costs of care 45% lower. \$7,990 vs \$14,570. Estimated from staff time, excluding medication, facility, and admin costs. No difference between disease groups in magnitude of cost-savings.
Brumley JAGS 2007 Kaiser Permanente (multiple sites)	HMO. 145 in treatment arm, 152 controls. Avg 74 years old. Target disease + <12 months prognosis + ER/hospital in past year + PPS<=70%. Usual care = home health when applc.	Mean 6.5 months	2002-2004	CHF, COPD, cancer as primary disease.	Education, support, and medical care to patients & families; trained in the use of meds, self-management skills, & crisis intervention.	RCT. Analyses controlled for differential time alive/in study (control patients lived longer).	Overall costs 33% lower. \$12,670 vs. \$20,222 per person. Or \$95.3 vs. \$212.8 per day. \$3,525 difference per patient <u>per month</u> , after program costs accounted for.

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C. Kerr JPM 2014 (cost). C. Kerr JPSM 2014 (other outcomes) Home Connections (Buffalo)	88% Medicare. 149 recipients (decedents) with IH as payer (in cost study; 499 in other study). 84% >65 years old.	Median 3.9 months in cost study; 3.2 in other report (cancer 11 weeks, other diseases ~16 weeks).	2010-2012	Cancer (58%), CHF, coronary artery disease, COPD, etc.	RN, SW, volunteers, MD oversight. Symptoms, education, goals, respite care, 24x7 call with nurse.	Decedent cohort, propensity score matching.	Overall costs 36% lower. \$3,908 lower PMPM across the <u>final 3 months</u> of life, after accounting for program costs.
Lustbader JPM 2016 Prohealth (NYC region)	MSSP ACO track 1. 82 recipients who died (out of 975 served), median age 91. Median Charlson 8.	Median 2 months	2014-2016	Homebound frailty, CHF, COPD, cancer (57%), dementia.	RN, SW, MD.	Decedent cohort, 569 usual care. Not matched per se.	Overall costs 37% lower. \$12,000 lower across <u>final three months</u> . Does not take program costs into account.
Cassel JAGS 2016 Sharp HealthCare "Transitions" (San Diego)	Medicare Advantage. 368 recipients matched to 1,075 controls. Avg 82+ years old.	Mean 4.8 months for cancer, 7.2 months for other conditions	2008-2014	CHF, COPD, dementia, cancer	In-home medical consultation, ongoing prognostication, caregiver support, ACP.	Decedent cohort, propensity matching. Dropped 76 enrolled > 18 months and 49 < 30 days. Matching and analyses stratified by disease group.	Overall costs 49% - 59% lower. \$2,700 - \$4,250 net cost savings per patient <u>per month</u> , after program costs accounted.

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<p>Ruiz Innov Aging 2017 – three models.</p> <p>See also Ruiz Health Aff 2017 – five models.</p> <p>Sutter AIM (Northern Calif)</p>	<p>Medicare FFS. 3,339 recipients (36% of the 9406 served who were deceased). 57% age 75+.</p>	<p>Mean 3.7 months</p>	<p>2013-2016</p>	<p>Mixed (HCC used to identify comparators).</p>	<p>Coordinates care across multiple care Settings; on-call triage for late-stage patients; goals/ACP, symptoms, med management.</p>	<p>Decedent cohort, county-level similarity. Excluded those enrolled < 30 days before death. Propensity matched 1:1.</p>	<p>Overall costs 29.4% lower in final 30 days of life. \$4,606 lower costs per patient in <u>final three months</u>; program costs not in patient-level analysis (aggregate program costs and savings to Medicare reported elsewhere); but Sudat used \$400 PMPM cost of service. Sudat found \$4,424 lower costs in final month of life (23%); no difference in months 2 and 3 before death.</p>

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Chen JPSM 2018 (cost). Chen JPM 2015 (model, other outcomes). Mayo Clinic (Minnesota)	Medicare only. 50 recipients, mean age 87 (all 60+), homebound. All but one had some dementia.	1-3 months	2012-2013	Homebound with dementia as well as 40% CHF, 28% COPD, 14% cancer	Symptoms, med rc, education, ACP, safety/mobility, caregiver support.	Comparison group = eligible but not enrolled due to lack of program capacity. Difference-in-differences approach to matched controls combining pre-post and between-group differences. Survivors and decedents.	PC group's year 2 costs were 65% lower than year 1 while control group increased 53%. Factoring in the D-in-D, \$18,251 lower costs per patient in <u>year after enrollment</u> ; program delivery costs not mentioned; may not capture all home care services.
Yosick JPM 2019 Trinity / Turnkey (Columbus OH)	Medicare Adv. 204 recipients, 176 of them analyzed. Mean 86.5 yo, 88% > 80 years old.	Mean 6 months	2015-2016	Cardiovascular, kidney, COPD, cancer, etc.	RN, SW, NP, MD. Symptoms, safety, education, care-giver support, goals/ACP.	Met predictive criteria for over-medicalized death, but could not be reached, opted out, hospice, or dead. Propensity weighting, both survivors and decedents.	Overall costs 20% lower. \$619 lower per patient <u>per month</u> , program delivery costs not mentioned

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CMS 2020 MCCM 3rd year evaluation (multiple sites)	MCCM. 3,603 decedents (of 4,988 enrolled)	Mean 3 months for cancer, 4.4 months other	2016-2019	COPD, CHF, cancer, HIV; 6-month prognosis	Concurrent hospice	Decedents. Markets, hospices and persons matched for comparison sample. Baseline and performance periods. D-in-D regression.	Overall costs 40% lower in last 30 days; 29% in last 90 days. \$5,967 net savings per decedent (25% reduction). Not as much if stayed in MCCM rather than transitioned to hospice.