Evidence Brief: Effectiveness of Intensive Primary Care Programs

SUPPLEMENTAL MATERIALS

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SEARCH STRATEGY

MEDLINE (PubMed) searched 9/5/2012

Concept	MeSH	"natural language"
Population N=1061387	Comorbidity/ Frail elderly/	"high risk of hospitalization" Multimorbidity Comorbidity "frail elderly" "high utilizers" "highest utilizers" "sickest patients" "complex patients" "High risk patients" "critically ill population" ("high OR highest OR sick OR sickest OR complex OR "high risk" OR high-risk" OR "critically ill") AND ("utilize" OR utilizers OR patient OR patients OR population OR populations)[title]
Intervention N=518713	Patient care management/ Patient care team/ Home care services/	"Patient care management" "Patient care team" "Home care services" "PACE" "program of all inclusive care for the elderly" "team-managed home based primary care" "intensive primary care" "intensive primary care" "home based primary care" "interdisciplinary home based primary care program" "Primary care intensivist" ("team managed" OR "team-managed" OR "team based" OR "team-based" OR "home based" OR home-based OR intensive OR interdisciplinary OR multidisciplinary OR intensivist OR "all inclusive") AND ("primary care")[title]
Comparators		
Outcomes N=242535	Hospitalization/ Patient readmission/	Hospitalization "Hospital use" "patient readmission" "hospital readmission" "Urgent care utilization" "Emergency department utilization" (hospital OR patient OR "urgent care" OR "emergency department" OR ER) AND (use OR readmission OR admission OR utilization)[title]

Limits N=4119	English Not Children	
VA Only N=197 (after deduplication)		(("Veterans Health"[Mesh])) OR (((VA OR Veteran OR VAMC OR Veterans)) OR ("Veterans"[Mesh] OR "United States Department of Veterans Affairs"[Mesh] OR "Hospitals, Veterans"[Mesh]))
Study type	Systematic Review N=272 (after deduplication)	PubMed SR hedge
	RCT N=898 (after deduplication)	(((((((groups[tiab])) OR (trial[tiab])) OR (randomly[tiab])) OR (drug therapy[sh])) OR (placebo[tiab])) OR (randomized[tiab])) OR (controlled clinical trial[pt])) OR (randomized controlled trial[pt])
	Case Control N=510 (after deduplication)	"Case-Control Studies"[Mesh] OR "Control Groups"[Mesh] OR (case[TIAB] AND control[TIAB]) OR (cases[TIAB] AND controls[TIAB]) OR (cases[TIAB] AND controlled[TIAB]) OR (case[TIAB] AND comparison*[TIAB]) OR (cases[TIAB] AND comparison*[TIAB]) OR "control group"[TIAB] OR "control groups"[TIAB]
	Program Evaluation N=754 (after deduplication)	evaluation studies[pt] OR evaluation studies as topic[mesh] OR program evaluation[mesh] OR validation studies as topic[mesh] OR (effectiveness[tiab] OR (pre-[tiab] AND post-[tiab])) OR (program*[tiab] AND evaluat*[tiab]) OR intervention*[tiab]

CINAHL(EBSCO) searched 9/5/2012

Concept	Search
Population N=41280	(MH "Comorbidity") OR "comorbidity" OR (MH "Frail Elderly") OR "frail elderly" OR "high risk of hospitalization" OR "risk of hospitalization" OR "High utilizers" OR "highest utilizers" OR "sickest patients" OR "complex patients" OR "high risk patients" OR "critically ill population" OR (MH "Critically Ill Patients")
Intervention N=52136	"patient care management" OR (MH "Multidisciplinary Care Team+") OR "patient care team" OR (MH "Home Health Care+") OR "home care services" OR patient care management" OR "program of all inclusive care for the elderly" OR "team managed home based primary care" OR "intensive primary care" OR "home based primary care" OR "interdisciplinary home based primary care program" OR "primary care intensivist"

Outcomes N=67849	(MH "Hospitalization+") OR "hospitalization" OR (MH "Readmission") OR "patient readmission" OR "hospital use" OR "hospital readmission" OR (MH "Health Resource Utilization") OR "urgent care utilization" OR "emergency department utilization" OR (MH "Emergency Service/UT")
(Population AND Intervention AND Outcome) limited to English deduplicated with previous searches N=164	

Cochrane Registry of Controlled Trials searched 9/5/2012

Concept	Search
Population N=4968	1 comorbidity.mp. or exp Comorbidity/ 2 frail elderly.mp. or exp Frail Elderly/ 3 high risk of hospitalization.mp. 4 multimorbidity.mp. 5 high utilizers.mp. 6 highest utilizers.mp. 7 sickest patients.mp. 8 complex patients.mp. 9 high risk patients.mp. 10 critically ill population.mp. 11 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10
Intervention N=11264	12 patient care management.mp. or exp Patient Care Management/ 13 patient care team.mp. or exp Patient Care Team/ 14 home care services/ 15 program of all inclusive care for the elderly.mp. 16 team managed home based primary care.mp. 17 intensive primary care.mp. 18 home based primary care.mp. 19 interdisciplinary home based primary care program.mp. 20 primary care intensivist.mp. 21 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20
Outcomes N=12295	22 exp Hospitalization/ or Hospitalization.mp. 23 patient readmission.mp. or exp Patient Readmission/ 24 hospital readmission.mp. 25 urgent care utilization.mp 26 emergency department utilization.mp. 27 22 or 23 or 24 or 25 or 26 (12295)
(Population AND Intervention AND Outcome) limited to English deduplicated with previous searches N=10	

LIST OF EXCLUDED STUDIES

Publications excluded at the full-text level

Publication	Reason for exclusion
Allen KR, Hazelett SE, Jarjoura D, et al. The after discharge care management of low income frail elderly (AD-LIFE) randomized trial: theoretical framework and study design. *Popul Health Manag.* Jun 2011;14(3):137-142.	Ongoing study: Results not yet available
Wright K, Hazelett S, Jarjoura D, Allen K. The AD-LIFE trial: working to integrate medical and psychosocial care management models. *Home Healthc Nurse.* May 2007;25(5):308-314.	Ongoing study: Results not yet available
DM for complex patients tackles hospital utilization in a big way. *Dis Manag Advis.* Vol 9. 2003/08/19 ed2003:99-101, 93.	Wrong publication type
Benedict L, Robinson K and Holder C. Clinical nurse specialist practice within the Acute Care for Elders interdisciplinary team model. *Clin Nurse Spec.* Vol 20. 2006/09/19 ed2006:248-51.	Wrong publication type
Berkowitz R, Blank LJ and Powell SK. Strategies to reduce hospitalization in the management of heart failure. *Lippincotts Case Manag.* Vol 10. 2005/11/30 ed2005:S1-15; quiz S16-7.	Wrong publication type
Bernabei R, Landi F, Zuccala G. Health care for older persons in Italy. *Aging Clin Exp Res.* Aug 2002;14(4):247-251.	Wrong publication type
Carpenter I, Gambassi G, Topinkova E, et al. Community care in Europe. The Aged in Home Care project (AdHOC). *Aging Clin Exp Res.* Vol 16. 2004/12/04 ed2004:259-69.	Wrong publication type
Chan DC, Heidenreich PA, Weinstein MC and Fonarow GC. Heart failure disease management programs: a cost-effectiveness analysis. *Am Heart J.* Vol 155. 2008/01/25 ed2008:332-8.	Wrong publication type
Cooper DF, Granadillo OR, Stacey CM. Home-based primary care: the care of the veteran at home. *Home Healthc Nurse.* May 2007;25(5):315-322.	Wrong publication type
De Keulenaer GW and Brutsaert DL. Urgent need to reorganize heart failure management: from paradoxes to heart failure clinics. *Acta Cardiol.* Vol 60. 2005/05/13 ed2005:179-84.	Wrong publication type
Hughes S, Weaver F, Manheim L, Hurder A, Kubal J, Ulasevich A. Cost-effectiveness of team-managed home care in the VA: an update from a multi-site randomized trial [abstract]. *Abstract Book/Association for Health Services Research.* 1997;14:110-111.	Wrong publication type
Roland M. Improving management of chronic illness: better identification of effective interventions for high risk patients is needed. *Chronic Illn.* Vol 3. 2007/12/18 ed2007:196.	Wrong publication type
Smith DM, Giobbie-Hurder A, Weinberger M, et al. Predicting non-elective hospital readmissions: a multi-site study. Department of Veterans Affairs Cooperative Study Group on Primary Care and Readmissions. *J Clin Epidemiol.* Vol 53. 2000/12/07 ed2000:1113-8.	Wrong publication type
Sacramento hospital boosts outcomes by focusing on high-risk CHF patients. *Data Strateg Benchmarks.* Vol 5. 2001/06/30 ed2001:68-7, 65.	Wrong intervention model

Publication	Reason for exclusion
Disease management program lowers hospital readmission days: study followed chronically, critically ill patients after discharge. *Case Management Advisor*. Vol 182007:121-124.	Wrong intervention model
Aish H, Didsbury P, Cressey P, Grigor J and Gribben B. Primary options for acute care: general practitioners using their skills to manage "avoidable admission" patients in the community. *N Z Med J*. Vol 116. 2003/02/26 ed2003:U326.	Wrong intervention model
Assyag P, Renaud T, Cohen-Solal A, et al. RESICARD: East Paris network for the management of heart failure: absence of effect on mortality and rehospitalization in patients with severe heart failure admitted following severe decompensation. *Arch Cardiovasc Dis*. Vol 102. 2009/02/24 ed2009:29-41.	Wrong intervention model
Berger R, Moertl D, Peter S, et al. N-terminal pro-B-type natriuretic peptide-guided, intensive patient management in addition to multidisciplinary care in chronic heart failure a 3-arm, prospective, randomized pilot study. *J Am Coll Cardiol*. Vol 55. 2010/02/23 ed2010:645-53.	Wrong intervention model
Bernabei R, Landi F, Gambassi G, et al. Randomised trial of impact of model of integrated care and case management for older people living in the community. *BMJ*. Vol 316. 1998/06/06 ed1998:1348-51.	Wrong intervention model
Bird SR, Kurowski W, Dickman GK and Kronborg I. Integrated care facilitation for older patients with complex health care needs reduces hospital demand. *Aust Health Rev*. Vol 31. 2007/08/03 ed2007:451-61; discussion 449-50.	Wrong intervention model
Boult C, Reider L, Frey K, et al. Early Effects of "Guided Care" on the Quality of Health Care for Multimorbid Older Persons: A Cluster-Randomized Controlled Trial. *Journal of Gerontology*. Vol 63A2008:321-327.	Wrong intervention model
Boyce PS and Feldman PH. ReACH National Demonstration Collaborative: early results of implementation. *Home Health Care Services Quarterly*. Vol 262007:105-120.	Wrong intervention model
Burns T, Catty J, Dash M, Roberts C, Lockwood A and Marshall M. Use of intensive case management to reduce time in hospital in people with severe mental illness: systematic review and meta-regression. *BMJ*. Vol 335. 2007/07/17 ed2007:336.	Wrong intervention model
Challis D, Darton R, Johnson L, Stone M and Traske K. An evaluation of an alternative to long-stay hospital care for frail elderly patients: II. Costs and effectiveness. *Age Ageing*. Vol 20. 1991/07/01 ed1991:245-54.	Wrong intervention model
Chan YK, Stewart S, Calderone A, et al. Exploring the potential to remain "Young @ Heart": initial findings of a multi-centre, randomised study of nurse-led, home-based intervention in a hybrid health care system. *Int J Cardiol*. Vol 154. 2010/10/05 ed2012:52-8.	Wrong intervention model
Coleman EA, Wagner EH, Grothaus LC, Hecht J, Savarino J and Buchner DM. Predicting hospitalization and functional decline in older health plan enrollees: are administrative data as accurate as self-report? *J Am Geriatr Soc*. Vol 46. 1998/04/29 ed1998:419-25.	Wrong intervention model
Davidson PM, Cockburn J, Newton PJ, et al. Can a heart failure-specific cardiac rehabilitation program decrease hospitalizations and improve outcomes in high-risk patients? *Eur J Cardiovasc Prev Rehabil*. Vol 17. 2010/05/26 ed2010:393-402.	Wrong intervention model

Publication	Reason for exclusion
Dawson JI and Critchley L. Community-hospital partnerships. The Quick Response Team. *J Nurs Adm*. Vol 22. 1992/11/01 ed1992:33-9.	Wrong intervention model
Del Sindaco D, Pulignano G, Minardi G, et al. Two-year outcome of a prospective, controlled study of a disease management programme for elderly patients with heart failure. *J Cardiovasc Med (Hagerstown)*. Vol 8. 2007/04/20 ed2007:324-9.	Wrong intervention model
Dieterich M, Irving CB, Park B and Marshall M. Intensive case management for severe mental illness. *Cochrane Database Syst Rev*. 2010/10/12 ed2010:CD007906.	Wrong intervention model
Douglas SL, Daly BJ, Kelley CG, O'Toole E and Montenegro H. Chronically critically ill patients: health-related quality of life and resource use after a disease management intervention. *Am J Crit Care*. Vol 16. 2007/08/29 ed2007:447-57.	Wrong intervention model
Fan VS, Gaziano JM, Lew R, et al. A Comprehensive Care Management Program to Prevent Chronic Obstructive Pulmonary Disease Hospitalizations. *Annals of Internal Medicine*. Vol 1562012.	Wrong intervention model
Freund T, Peters-Klimm F, Rochon J, et al. Primary care practice-based care management for chronically ill patients (PraCMan): study protocol for a cluster randomized controlled trial [ISRCTN56104508]. *Trials*. Vol 12. 2011/07/01 ed2011:163.	Wrong intervention model
Friedhoff SG. Intensive case management of high-risk patients in a family medicine residency setting. *J Am Board Fam Pract*. Vol 12. 1999/09/07 ed1999:264-9.	Wrong intervention model
Gary TL, Batts-Turner M, Bone LR, et al. A randomized controlled trial of the effects of nurse case manager and community health worker team interventions in urban African-Americans with type 2 diabetes. *Control Clin Trials*. Vol 25. 2004/02/26 ed2004:53-66.	Wrong intervention model
Gravelle H, Dusheiko M, Sheaff R, et al. Impact of case management (Evercare) on frail elderly patients: controlled before and after analysis of quantitative outcome data. *BMJ*. Vol 334. 2006/11/17 ed2007:31.	Wrong intervention model
Hastings SN and Heflin MT. A systematic review of interventions to improve outcomes for elders discharged from the emergency department. *Acad Emerg Med*. Vol 12. 2005/10/06 ed2005:978-86.	Wrong intervention model
Hebert KA, Horswell RL, Dy S, et al. Mortality benefit of a comprehensive heart failure disease management program in indigent patients. *Am Heart J*. Vol 151. 2006/01/31 ed2006:478-83.	Wrong intervention model
Hemmelgarn BR, Manns BJ, Zhang J, et al. Association between multidisciplinary care and survival for elderly patients with chronic kidney disease. *J Am Soc Nephrol*. Vol 18. 2007/02/03 ed2007:993-9.	Wrong intervention model
Inglis S, McLennan S, Dawson A, et al. A new solution for an old problem? Effects of a nurse-led, multidisciplinary, home-based intervention on readmission and mortality in patients with chronic atrial fibrillation. *J Cardiovasc Nurs*. Vol 19. 2004/04/03 ed2004:118-27.	Wrong intervention model
Kasper EK, Gerstenblith G, Hefter G, et al. A randomized trial of the efficacy of multidisciplinary care in heart failure outpatients at high risk of hospital readmission. *J Am Coll Cardiol*. Vol 39. 2002/02/02 ed2002:471-80.	Wrong intervention model

Publication	Reason for exclusion
Killaspy H, Kingett S, Bebbington P, et al. Randomised evaluation of assertive community treatment: 3-year outcomes. *Br J Psychiatry.* Vol 195. 2009/07/02 ed2009:81-2.	Wrong intervention model
Kim YJ and Soeken KL. A meta-analysis of the effect of hospital-based case management on hospital length-of-stay and readmission. *Nurs Res.* Vol 54. 2005/07/20 ed2005:255-64.	Wrong intervention model
Kimmelstiel C, Levine D, Perry K, et al. Randomized, controlled evaluation of short- and long-term benefits of heart failure disease management within a diverse provider network: the SPAN-CHF trial. *Circulation.* Vol 110. 2004/08/18 ed2004:1450-5.	Wrong intervention model
Lairson DR, Yoon SJ, Carter PM, et al. Economic evaluation of an intensified disease management system for patients with type 2 diabetes. *Dis Manag.* Vol 11. 2008/04/09 ed2008:79-94.	Wrong intervention model
Landi F, Lattanzio F, Gambassi G, et al. A model for integrated home care of frail older patients: The Silver Network project. *Aging Clinical & Experimental Research.* Vol 111999:262-272.	Wrong intervention model
Landi F, Onder G, Russo A, et al. A new model of integrated home care for the elderly: impact on hospital use. *J Clin Epidemiol.* Vol 54. 2001/08/25 ed2001:968-70.	Wrong intervention model
Latour CH, van der Windt DA, de Jonge P, et al. Nurse-led case management for ambulatory complex patients in general health care: a systematic review. *J Psychosom Res.* Vol 62. 2007/02/28 ed2007:385-95.	Wrong intervention model
Leff B, Reider L, Frick KD, et al. Guided care and the cost of complex healthcare: a preliminary report. *Am J Manag Care.* Vol 15. 2009/08/13 ed2009:555-9.	Wrong intervention model
Leveille SG, Wagner EH, Davis C, et al. Preventing disability and managing chronic illness in frail older adults: a randomized trial of a community-based partnership with primary care. *J Am Geriatr Soc.* Vol 46. 1998/10/20 ed1998:1191-8.	Wrong intervention model
Lynch JP, Forman SA, Graff S and Gunby MC. High-risk population health management--achieving improved patient outcomes and near-term financial results. *Am J Manag Care.* Vol 6. 2000/11/07 ed2000:781-91.	Wrong intervention model
Martin-Lesende I, Orruno E, Cairo C, et al. Assessment of a primary care-based telemonitoring intervention for home care patients with heart failure and chronic lung disease. The TELBIL study. *BMC Health Serv Res.* Vol 11. 2011/03/10 ed2011:56.	Wrong intervention model
Mattke S, Seid M and Ma S. Evidence for the effect of disease management: is $1 billion a year a good investment? *Am J Manag Care.* Vol 13. 2007/12/12 ed2007:670-6.	Wrong intervention model
McAlister FA, Stewart S, Ferrua S and McMurray JJ. Multidisciplinary strategies for the management of heart failure patients at high risk for admission: a systematic review of randomized trials. *J Am Coll Cardiol.* Vol 44. 2004/08/18 ed2004:810-9.	Wrong intervention model

Publication	Reason for exclusion
McDonald K, Ledwidge M, Cahill J, et al. Elimination of early rehospitalization in a randomized, controlled trial of multidisciplinary care in a high-risk, elderly heart failure population: the potential contributions of specialist care, clinical stability and optimal angiotensin-converting enzyme inhibitor dose at discharge. *Eur J Heart Fail.* Vol 3. 2001/03/14 ed2001:209-15.	Wrong intervention model
McDonald K, Ledwidge M, Cahill J, et al. Heart failure management: multidisciplinary care has intrinsic benefit above the optimization of medical care. *J Card Fail.* Vol 8. 2002/07/26 ed2002:142-8.	Wrong intervention model
Melis RJ, Adang E, Teerenstra S, et al. Cost-effectiveness of a multidisciplinary intervention model for community-dwelling frail older people. *J Gerontol A Biol Sci Med Sci.* Vol 63. 2008/04/01 ed2008:275-82.	Wrong intervention model
Mendoza H, Martin MJ, Garcia A, et al. 'Hospital at home' care model as an effective alternative in the management of decompensated chronic heart failure. *Eur J Heart Fail.* Vol 11. 2009/10/31 ed2009:1208-13.	Wrong intervention model
Naylor MD, Aiken LH, Kurtzman ET, Olds DM and Hirschman KB. The care span: The importance of transitional care in achieving health reform. *Health Aff (Millwood).* Vol 30. 2011/04/08 ed2011:746-54.	Wrong intervention model
Oddone EZ, Weinberger M, Giobbie-Hurder A, Landsman P and Henderson W. Enhanced access to primary care for patients with congestive heart failure. Veterans Affairs Cooperative Study Group on Primary Care and Hospital Readmission. *Eff Clin Pract.* Vol 2. 2000/01/06 ed1999:201-9.	Wrong intervention model
O'Toole TP, Pirraglia PA, Dosa D, et al. Building care systems to improve access for high-risk and vulnerable veteran populations. *J Gen Intern Med.* Nov 2011;26 Suppl 2:683-688.	Wrong intervention model
Pazin-Filho A, Peitz P, Pianta T, et al. Heart failure disease management program experience in 4,545 heart failure admissions to a community hospital. *Am Heart J.* Vol 158. 2009/08/25 ed2009:459-66.	Wrong intervention model
Peters-Klimm F, Campbell S, Hermann K, et al. Case management for patients with chronic systolic heart failure in primary care: the HICMan exploratory randomised controlled trial. *Trials.* Vol 11. 2010/05/19 ed2010:56.	Wrong intervention model
Phelan EA, Balderson B, Levine M, et al. Delivering effective primary care to older adults: a randomized, controlled trial of the senior resource team at group health cooperative. *J Am Geriatr Soc.* Vol 55. 2007/11/06 ed2007:1748-56.	Wrong intervention model
Rasekaba TM, Lim WK and Hutchinson AF. Effect of a chronic disease management service for patients with diabetes on hospitalisation and acute care costs. *Aust Health Rev.* Vol 36. 2012/05/26 ed2012:205-12.	Wrong intervention model
Smith AA, Carusone SB, Willison K, et al. Hospitalization and emergency department visits among seniors receiving homecare: a pilot study. *BMC Geriatr.* Vol 5. 2005/07/15 ed2005:9.	Wrong intervention model
Stewart S, Carrington MJ, Marwick T, et al. The WHICH? trial: rationale and design of a pragmatic randomized, multicentre comparison of home- vs. clinic-based management of chronic heart failure patients. *Eur J Heart Fail.* Vol 13. 2011/05/28 ed2011:909-16.	Wrong intervention model

Publication	Reason for exclusion
Stewart S, Carrington MJ, Marwick T, et al. Impact of Home Versus Clinic-Based Management of Chronic Heart Failure: The WHICH? (Which Heart Failure Intervention Is Most Cost-Effective & Consumer Friendly in Reducing Hospital Care) Multicenter, Randomized Trial. *Journal of the American College of Cardiology*. 2012;60(14):1239-1248.	Wrong intervention model
The WHICH? (Which Heart Failure Intervention Is Most Cost-Effective & Consumer Friendly in Reducing Hospital Care) Multicenter, Randomized Trial. *Journal of the American College of Cardiology*. Vol 602012:1239-1248.	Wrong intervention model
Stewart S and Horowitz JD. Detecting early clinical deterioration in chronic heart failure patients post-acute hospitalisation-a critical component of multidisciplinary, home-based intervention? *Eur J Heart Fail*. Vol 4. 2002/05/30 ed2002:345-51.	Wrong intervention model
Stewart S and Horowitz JD. Home-based intervention in congestive heart failure: long-term implications on readmission and survival. *Circulation*. Vol 1052002:2861-2866.	Wrong intervention model
Stewart S, Marley JE and Horowitz JD. Effects of a multidisciplinary, home-based intervention on unplanned readmissions and survival among patients with chronic congestive heart failure: a randomised controlled study. *Lancet*. Vol 354. 1999/10/06 ed1999:1077-83.	Wrong intervention model
Stewart S, Vandenbroek AJ, Pearson S and Horowitz JD. Prolonged beneficial effects of a home-based intervention on unplanned readmissions and mortality among patients with congestive heart failure. *Arch Intern Med*. Vol 159. 1999/02/16 ed1999:257-61.	Wrong intervention model
Stiefel F, Zdrojewski C, Bel Hadj F, et al. Effects of a multifaceted psychiatric intervention targeted for the complex medically ill: a randomized controlled trial. *Psychother Psychosom*. Vol 77. 2008/04/30 ed2008:247-56.	Wrong intervention model
Stott DJ, Buttery AK, Bowman A, et al. Comprehensive geriatric assessment and home-based rehabilitation for elderly people with a history of recurrent non-elective hospital admissions. *Age Ageing*. Vol 35. 2006/06/15 ed2006:487-91.	Wrong intervention model
Takahashi PY, Hanson GJ, Pecina JL, et al. A randomized controlled trial of telemonitoring in older adults with multiple chronic conditions: the Tele-ERA study. *BMC Health Serv Res*. Vol 10. 2010/09/03 ed2010:255.	Wrong intervention model
Weinberger M, Oddone EZ and Henderson WG. Does increased access to primary care reduce hospital readmissions? Veterans Affairs Cooperative Study Group on Primary Care and Hospital Readmission. *N Engl J Med*. Vol 334. 1996/05/30 ed1996:1441-7.	Wrong intervention model
Willenbring ML, Olson DH and Bielinski J. Integrated outpatients treatment for medically ill alcoholic men: results from a quasi-experimental study. *J Stud Alcohol*. Vol 56. 1995/05/01 ed1995:337-43.	Wrong intervention model
Counsell SR, Callahan CM, Tu W, Stump TE and Arling GW. Cost analysis of the Geriatric Resources for Assessment and Care of Elders care management intervention. *J Am Geriatr Soc*. Vol 57. 2009/08/20 ed2009:1420-6.	Wrong outcome
Kane RL, Illston LH, Miller NA. Qualitative analysis of the Program of All-inclusive Care for the Elderly (PACE). *Gerontologist*. Dec 1992;32(6):771-780.	Wrong outcome

Publication	Reason for exclusion
Suter E, Hyman M and Oelke N. Measuring key integration outcomes: a case study of a large urban health center. *Health Care Manage Rev.* Vol 32. 2007/08/02 ed2007:226-35.	Wrong outcome
Hansen LO, Young RS, Hinami K, Leung A and Williams MV. Interventions to reduce 30-day rehospitalization: a systematic review. *Ann Intern Med.* Vol 155. 2011/10/19 ed2011:520-8.	Follow-up ≤ 30 days
Boorsma M, van Hout HP, Frijters DH, Ribbe MW and Nijpels G. The cost-effectiveness of a new disease management model for frail elderly living in homes for the elderly, design of a cluster randomized controlled clinical trial. *BMC Health Serv Res.* Vol 8. 2008/07/09 ed2008:143.	Wrong setting
Murray MA, Osaki S, Edwards NM, et al. Multidisciplinary approach decreases length of stay and reduces cost for ventricular assist device therapy. *Interact Cardiovasc Thorac Surg.* Vol 8. 2008/10/23 ed2009:84-8.	Wrong setting
Wright K, Hazelett S, Jarjoura D and Allen K. The AD-LIFE trial: working to integrate medical and psychosocial care management models. *Home Healthc Nurse.* Vol 25. 2007/05/15 ed2007:308-14.	Ongoing study, no results

CONTROLLED STUDIES: COMPLETE RISK OF BIAS ASSESSMENTS

Randomized controlled trials

Author Year	Adequate Sequence Generation?	Adequate Allocation Concealment?	Blinding of Participants, Personnel and Outcome Assessors?	Incomplete Outcome Data Adequately Addressed?	Study Reports Free of Suggestion of Outcome Reporting Bias?	Study Free of Other Sources of Bias?	Risk of Bias?
Beland 2006[1]/Bergman 1997[2]	Yes; computer generated. Patient was unit of randomization.	Unclear; insufficient information.	No for participants and personnel. Yes for outcome assessors.	Unclear; uncertainty about whether incomplete data were adequately handled (1% in SIPA group compared with 7% in control discontinued intervention).	Yes	Yes	Unclear
Coleman 1999[3]	No; unit of randomization was physician practice. Method was "simple randomization". Resulted in imbalanced groups: Control patients had higher Chronic Disease Score (CDS) than intervention patients (7.7 vs 7.3; $P = 0.06$).	Unclear; insufficient information.	No for participants and personnel. Unclear for outcome assessors.	Unclear; methods state that only patients with follow-up data were included in follow-up analyses. 75% retention at 24-months, but unclear of number included in 24-month analyses.	Yes	Yes	High
Counsell 2007[4]	Unclear; physicians were unit of randomization. Biostatistician generated randomization list using pseudorandom-number generator. But full sample had lower rate of county medical assistance use in the GRACE intervention group at baseline (83.7% compared with 89.0%; $P = 0.02$). Baseline characteristics were not provided for the high-risk subgroup.	Unclear; insufficient information.	No for participants and personnel. Yes for assessment of subjective outcomes. Unclear for assessment of mortality, hospital admission, hospital days, emergency department use.	Unclear; 6% excluded from full sample; 12% excluded from high-risk subgroup.	Yes	Yes	Unclear for full sample; high for high-risk subgroup.
Hughes 1990[5]	Unclear; method not described, but resulted in intervention group was younger (66 vs 69; $P = 0.02$), more were retired due to health conditions (67% vs 51%; $P = 0.01$) and more were using non-VA clinics (36% vs 19%; $P = 0.01$). Patient was unit of randomization.	Unclear; insufficient information.	No for participants and personnel. Unclear for outcome assessors.	Yes	Yes	Yes	High
Hughes 2000[6]	Unclear; method not described. Patient was unit of randomization.	Yes; assignments made by telephone by the statistical coordinating center.	No for participants and personnel. Unclear for outcome assessors.	Yes	Yes	Yes	Unclear
Melin 1995[7]	Yes; coin toss or match-box toss by team physician. But team group had significantly more medical diagnoses (4.5 vs 3.9; $P = 0.003$). Patient was unit of randomization.	Unclear; insufficient information.	No for participants and personnel. Unclear for outcome assessors.	Yes	Yes	Yes	High
Sledge 2006[8]	Yes; random numbers list. But intervention group had lower proportion of males (26% compared with 41%). Patient was unit of randomization.	Unclear; "sequential envelopes," but no information about whether they were sealed or opaque.	No for all. Research associate only blinded for initial assessments.	Yes	Yes	Yes	High

Observational studies

Author Year	Unbiased patient selection?	Important differential or high loss to follow-up?	Events specified and defined?	Clear description of techniques used to identify events?	Unbiased and accurate ascertainment of events?	Adequate control of potential confounding variables?	Adequate length of follow-up?	Quality (Good, Fair, Poor)
Jiwa 2002[9]	No; patients intentionally differentially selected based on high-risk characteristics, resulting in baseline differences between intervention and control group (e.g., intervention group selected because considered to be at-risk of avoidable hospitalization; control group was not considered to be at risk).	Unclear; attrition not described.	No	No	Unclear; not described	No	Unclear follow-up duration	Poor
Meret-Hanke 2011[10]	No; more exclusions from PACE group due to incomplete data and follow-up less than 180 days: 22% compared with 4%.	No; no significant difference between 10% of intervention group who voluntarily withdrew from the program and those who completed the study.	Yes	Yes	Yes	Yes; propensity score matching used, but differences persisted even after matching; but regression used to control for potential additional sources of bias.	Yes	Fair

UNCONTROLLED STUDIES: CHARACTERISTICS

Author Year Care model name Setting Sample size Follow-up	Population category	Key patient selection criteria	Primary patient management	Regular PCP contribution	Interdisciplinary team staffing	Key features	Visit frequency	Risk: Prior health service use (e.g., hospitalizations, home health, respite, etc.)	Risk identified by prediction model	Other risk indicators: Functional capacity, comorbidities, etc.	Key patient characteristics
Anetzberger 2006[11] VNA HouseCalls Greater Cleveland, Ohio N = 139 12 months	High-risk elderly	Aged ≥ 65 on Medicare, Medicaid, or private insurance who may be physically impaired and find it difficult to travel, bed-bound, history of falls or accidents, or cannot go to physician's office without excessive effort	PCP, Advanced Practice Nurse (APN)	VNA HouseCalls offers medical consultation to any local primary care physician who wishes medical evaluation in the home by an APN for patients unable to get to the physician's office.	Advanced practice nurses and physicians, case manager	• Initial comprehensive assessment by a program APN or physician • Provide primary care in the home to high-risk local older adults • Obtain referrals • Receive a high satisfaction rating from referral sources • Include as patients a sizable number who lived in social planning areas with primary care shortfalls	At least one follow-up visit by a program APN or physician	NR	NR	Activities of Daily Living (N = 17): 21% improved 75% remained same 4% declined Karofsky health maintenance (N = 16): 31% improved 38% remained same 31% declined	76 years 33% male Race NR Medical comorbidities NR Psychiatric, cognitive comorbidities NR
Beales 2009[12] HBPC (VA Home Based Primary Care) VAMC, Richmond, VA N = Unclear; in 2002, data collected from 11,334 Veterans in HBPC 6 months	Elderly	Veterans with complex chronic disease	HBPC medical director or in collaboration with a midlevel NP or physician assistant	• The midlevel provider has primary medical management responsibility in conjunction with the supervising physician. • HBPC is interdisciplinary, requires that teams meet regularly, and develops a single unified care plan for the team.	Physician, nurse practitioners, registered nurses, social worker, rehabilitation therapist, pharmacist, dietitian, and recently a psychologist	• Longitudinal comprehensive interdisciplinary care to Veterans • Promoting maximum level of health and independence • Reducing utilization • Assisting in transition • Supporting caregivers • Enhancing QoL	The frequency of physician home visits depends on the composition and structure of the team.	NR	NR	Activities of Daily Living (%): 47%	76.5 years 96% male Race NR Medical comorbidities 48% diabetes NR HTN 35% HF 1/5 COPD Psychiatric, cognitive comorbidities 33% dementia 44% depression 29% substance abuse 24% anxiety or personality disorder 21% TBI 20% schizophrenia

Author Year Care model name Setting Sample size Follow-up	Population category	Key patient selection criteria	Primary patient management	Regular PCP contribution	Interdisciplinary team staffing	Key features	Visit frequency	Risk: Prior health service use (e.g., hospitalizations, home health, respite, etc.)	Risk identified by prediction model	Other risk indicators: Functional capacity, comorbidities, etc.	Key patient characteristics
Brown 2005[13] PIC (Primary Intensive Care) Urban academic hospital, New York N = 17 Mean 9.4 months (range 5-12 months)	High medical utilization; comorbid psycho-pathology	Referred by PCP's or by inpatient care coordinator due to high levels of "inappropriate" medical admissions, ED visits, frequent outpatient visits, or frequent telephone calls; ≥ 1 inpatient admission within previous year; ≥ 1 chronic medical illness; life expectancy ≥ 3 years	PIC team	Referral	Internist, psychiatrist-internist, nurse practitioner, pharmacist, social worker	• Longer appointment times for evaluation interview • Multidisciplinary assessment and follow-up, including mental health services • Frequent visits (weekly initially) • 24-hour availability of a team member on call via pager	Initial assessment involving multiple 1-hour-long sessions over 2-3 weeks; weekly visits until stabilized; then tapered to biweekly and monthly	71% with ≥ 1 inpatient admission within past year	NR	NR	41 years 35% male 82% White Medical comorbidities 18% diabetes 6% HF 12% COPD 11% HTN Psychiatric, cognitive comorbidities 17% MDD 94% any co-occurring significant psychiatric disorder
Chang 2009[14] HBPC (VA Home Based Primary Care) Urban tertiary care medical center, Washington DC VAMC N = 183 ≥ 6 months	Impaired functional status	Significant hardship in coming to medical center for clinic appointments, dependency in ≥ ADL's	Nurse practitioner, in collaboration with the medical director	NR	Medical director (0.5), nurse practitioners (2.0), registered nurses (2.0), social workers (2.0), pharmacists (0.2), registered dietitian (0.2), dental hygienist (0.2), program director (1.0) (FTE)	• Comprehensive assessment upon admission (history, physical, functional assessments, home safety evaluation, nutritional assessments, "caregiver/ community" resource assessment • Monthly visits by physician, NP, or RN • Case management of VA- and Medicare-contracted services • Home visits for acute problems as needed • Telephone triage of urgent problems that developed on evenings and weekends • Weekly interdisciplinary conferences to review 90-day care plans for each patient	At least monthly; increased to weekly when needed	56% home health aide use; 35% nursing home respite use	N/A	Activities of Daily Living (mean): 7.1 Instrumental Activities of Daily Living (mean): 15.8 Lives with caregiver in community (mean): 119	73.6 years 96% male 29% white Medical comorbidities 38% diabetes 77% HTN HF NR 24% COPD Psychiatric, cognitive comorbidities 65% dementia 54% depression 38% other neurological conditions (ALS, MS, TBI, epilepsy)

Author Year Care model name Setting Sample size Follow-up	Population category	Key patient selection criteria	Primary patient management	Regular PCP contribution	Interdisciplinary team staffing	Key features	Visit frequency	Risk: Prior health service use (e.g., hospitalizations, home health, respite, etc.)	Risk identified by prediction model	Other risk indicators: Functional capacity, comorbidities, etc.	Key patient characteristics
Ginsburg 2009[15] MBH (Mental and behavioral health) for PACE (Program of All-inclusive Care for the Elderly) On Lok centers in CA (8 San Francisco, 1 Fremont) N = 1225 12 months	Frail elderly; population is ethnically diverse and linguistically varied	Frail, nursing home-eligible participants	PCP; psychologist: coordinate and supervise the services provided by the MBH team; psychiatrist: provide diagnostic evaluation and medication management as requested by PCP	Referral process initiated; determine the necessity and urgency of the services	Staff physicians and nurse practitioners, nurses, social workers, physical and occupational therapists, home care workers, recreational activities leaders, dieticians, and transportation staff; on-site mental and behavioral health team includes a psychologist, a bilingual licensed psychiatric social worker, and a marriage and family therapist, was conceptualized as a mobile resource traveling to where need was	• Mobile resource; collaborates with clinicians and teams on a referral basis; each On Lok center and IDT has an assigned member of the MBH who provides regular direct services to the participants and consultations to that team • MBH team members provide variety of services based on professional training	NR	NR	NR	NR	83 years 28% male Race NR Medical comorbidities NR Psychiatric, cognitive comorbidities NR
Landi 1999[16] The Silver Network Project Northern Italy (town of 50,000) N = 115 6 months	Frail elderly	• No specific entry criteria • All subjects who were evaluated between January 1997 and March 1998 who were considered potential beneficiaries of the newly-integrated home care services delivered by the municipality of Vittorio Veneto • Patients with chronic conditions but w/ no limitations in ADL score were excluded	Comprehensive geriatric assessment (MDS-HC instrument at baseline at 2 other times during follow-up) case management	Directly involved in case findings, assessment process, care planning, and emergency situations	Geriatrician, social worker, physiotherapist, several nurses	• Individualized care plans • Close collaboration among case managers, community geriatric evaluation unit, and primary care physicians • Use of Minimum Data Set for Home Care used to identify patient needs	NR	NR	NR	Activities of Daily Living (0-6) mean: 3.6 Instrumental Activities of Daily Living (0-7) mean: 4.7 Cognitive performance scale score (0-6) mean: 2.2 Number medical conditions mean: 3.7	77.5 age 29% male Race NR Medical comorbidities 55% cardiovascular disease 20% pulmonary disease 15% DM Psychiatric, cognitive comorbidities NR

Author Year Care model name Setting Sample size Follow-up	Population category	Key patient selection criteria	Primary patient management	Regular PCP contribution	Interdisciplinary team staffing	Key features	Visit frequency	Risk: Prior health service use (e.g., hospitalizations, home health, respite, etc.)	Risk identified by prediction model	Other risk indicators: Functional capacity, comorbidities, etc.	Key patient characteristics
North 2008[17] HBPC (VA Home-based Primary Care) Veterans Affairs Medical Center, Denver, Colorado N = 104 12 months	Low- and high-risk elderly	Frail, chronically ill, older Veterans who are frequent utilizers of urgent and emergent care	Nurse practitioner	NPs are licensed independent practitioners in the VA system and function in the role of the patient's primary care provider	HBPC nurse practitioners, registered dietitians, occupational therapists, medical social services, pharmacists	• Medical outpatient • Home care and homemaker services • Adult daycare • Respite care • Home meal service under a capitated payment system	Home visit frequency determined by the Veteran's health and functional status at any given time, but patients are seen at least monthly	NR	NR	NR	80 years 93% male 59% White Medical comorbidities NR Psychiatric, cognitive comorbidities NR
Rosenberg 2012[18] PIECH (Primary Integrated Inter-disciplinary Elder Care at Home) Victoria, British Columbia N = 248 12 months	Frail com-munity-dwelling elderly	Aged ≥ 75, difficulty getting to physician's office, complex medical or functional problems, live in geographic catchment area, transfer primary medical care	Physician and nurse led	The PIECH physician made weekly hospital visits to provide supportive care and assist with discharge planning	PCP, nurse, physical therapist	All individuals received a comprehensive geriatric assessment from the primary care physician and nurse including: • medical history and examination • functional review • standardized scales • comprehensive laboratory testing	Stable individuals • Visited by a nurse monthly to monitor health and medications • Visited by physician every 2 to 3 months PT visits • Physician referred on as-needed basis • 89% of patients saw the PT at least once • Some with acute problem seen daily until they improved • Some received maintenance therapy every 2 to 3 weeks • Most who required active therapy seen 3 times/week for 4 to 6 weeks	NR	NR	Canadian Study on Health and Aging Clinical Frailty Scale (mean): Active: 5.4 Discharged: 5.8	Active 86 years Discharged 89 years Active 56% male Discharged 14% male Race NR Medical comorbidities Diabetes 27% active 8% discharged HTN 121% active 33% discharged HF 46% active 15% discharged COPD 69% active 17% discharged Psychiatric, cognitive comorbidities Dementia 67% active 24% discharged Depression on medications 94% active 23% discharged Antipsychotic drugs 12% active 6% discharged

Author Year Care model name Setting Sample size Follow-up	Population category	Key patient selection criteria	Primary patient management	Regular PCP contribution	Interdisciplinary team staffing	Key features	Visit frequency	Risk: Prior health service use (e.g., hospitalizations, home health, respite, etc.)	Risk identified by prediction model	Other risk indicators: Functional capacity, comorbidities, etc.	Key patient characteristics
Vedel 2009[19] COPA (*coordination de personnes agées*, or coordination of elderly care) 16th borough of Paris, France; every hospital and community-based health and social service agency was asked to participate N = 106 12 months	Frail community-dwelling elderly	Aged ≥ 65 years; mix of ADL and IADL impairments, cognitive impairment, isolation and medical conditions	PCP and case manager	Actively participate in patient recruitment and care management, particularly with setting of priorities and developing care plans; decide which evidence-based protocols will be used; responsible for medical decision making	Case manager, PCP, geriatrician, COPA psychologist, emergency physician, psychiatrist, nurse, physiotherapist, auxiliary nurse, social worker, home care worker, administrators/ managers	• Multidisciplinary comprehensive geriatric needs assessment • Individual care plan • Care management programs • Evidence-based protocols • Regular reassessments of their needs	3 follow-up visits by case manager	NR	NR	Living alone: 54.7% Contact assessment score (6.6 out of 9) Needs help with mobility in bed: 17% Needs help with feeding: 9.6% Incontinence: 52.8%	86 years 36% male Race NR Medical comorbidities NR Psychiatric, cognitive comorbidities NR
Weaver 2008[20] 3 models: (1) VA as sole care provider (2) VA-community partnership with a PACE (3) VA as care manager with care provided by PACE 3 VA medical centers: Ohio, Colorado, South Carolina Model 1: N = 181 Model 2: N = 102 Model 3: N = 85 Up to 36 months for early enrollees; otherwise, 12 months.	Frail elderly Veterans	Veterans aged 55 and older who met state criteria for nursing home admission	Not described	Not described	Not described	Not described	NR	NR	NR	Katz index of ADLs (2-4 ADLs): Model 1: 27% Model 2: 18% Model 3: 10% (5-6 ADLs) Model 1: 10% Model 2: 10% Model 3: 26% Received nursing visits > 1 time per week at enrollment: Model 1: 3% Model 2: 22% Model 3: 6%	Model 1: 76 years 96% male 75% White Model 2: 77 years 94% male 62% White Model 3: 76 years 99% male 42% White Medical comorbidities NR Psychiatric, cognitive comorbidities Short Portable Mental Status Questionnaire: Severe Impairment (7-10): Model 1: 2% Model 2: 15% Model 3: 19%

Author Year Care model name Setting Sample size Follow-up	Population category	Key patient selection criteria	Primary patient management	Regular PCP contribution	Interdisciplinary team staffing	Key features	Visit frequency	Risk: Prior health service use (e.g., hospitalizations, home health, respite, etc.)	Risk identified by prediction model	Other risk indicators: Functional capacity, comorbidities, etc.	Key patient characteristics
Wieland 2000[21] PACE (DataPACE) (Program description Eng 1997) Any PACE site N = 10 (all are urban centers) N = 5478 NR	Frail/ disabled older adults eligible for nursing home care	Frail elderly aged ≥ 55; met state's nursing home eligibility criteria; most eligible for Medicaid; must live within program's catchment area	• Aggressive preventative health practices. • Frequent clinical monitoring of chronic disease status. • Entire team serves as care manager. Responsible for managing care across all settings.	PACE physicians share decision-making with other team members	• Physicians, nurse practitioners, and nurses (onsite and home health) make up primary care team. • Nurse practitioners perform routine health assessments, support nursing staff, treat uncomplicated episodic illness. • Other team members: social workers, occupational/ physical therapists, dietitians, health workers, recreation therapists, transportation workers.	• Once enrolled, participants can only receive services from PACE or contract providers. Focus on center based services. • All services are located at one center. • New enrollees receive full evaluation assessment. Assessment evaluated periodically. •PACE provides all Medicare/Medicaid services + additional long-term services.	NR (dependent on patient's needs)	100% prior hospitalization	Top 3 risk factors • Dialysis RR = 2.42 • Lives in nursing home RR = 1.51 • Renal failure RR = 1.49	Number of chronic conditions (mean): 6.6 41% receive informal personal care IADL dependencies (of 8) (mean): 7.4 MSQ score (9) (mean): 4.2	79 years 28.9% male % White NR Medical comorbidities 25.5% DM 18% CHF Psychiatric, cognitive comorbidities 43.7% Dementia

UNCONTROLLED STUDIES: RESULTS

Author Year Care model name Setting Sample size Follow-up	Mortality rate	Hospitalization	Hospital days	ED visits
Anetzberger 2006[11] VNA HouseCalls Greater Cleveland, Ohio N = 139 12 months	NR	NR	NR	NR
Beales 2009[12] HBPC (VA Home Based Primary Care) VAMC, Richmond, VA N = Unclear; in 2002, data collected from 11,334 Veterans in HBPC 6 months	NR	NR	Enrollment in HBPC in 2007 was associated with a reduction in hospital bed days of care: 59% reduction	NR
Brown 2005[13] PIC (Primary Intensive Care) Urban academic hospital, New York N = 17 Mean 9.4 months (range 5-12 months)	NR	Hospitalizations: Pre = 2.5 vs Post = 0.9; $P = 0.02$ Hospitalizations per month: Pre = 0.26 vs Post = 0.10; $P = 0.02$	Inpatient days: Pre = 13.4 vs Post = 5.3; $P = 0.02$ Inpatient days per month: Pre = 1.4 vs Post = 0.6; $P = 0.05$	ED visits: Pre = 6.9 vs Post = 4.9; $P = 0.05$ ED visits per month: Pre = 0.64 vs Post = 0; $P = NS$
Chang 2009[14] HBPC (VA Home Based Primary Care) Urban tertiary care medical center, Washington DC VAMC N = 183 ≥ 6 months	17%	Total number of hospitalizations: Pre = 126 vs Post = 71, % change -44%; $P = 0.001$	Total number of days in the hospital: Pre = 1033 vs Post = 518, % change -49.9%; $P = 0.001$	Total number of ED visits: Pre = 130 vs Post = 106, % change -18.5%; NSD

Author Year Care model name Setting Sample size Follow-up	Mortality rate	Hospitalization	Hospital days	ED visits
Ginsburg 2009[15] MBH (Mental and behavioral health) for PACE (Program of All-inclusive Care for the Elderly) On Lok centers in CA (8 San Francisco, 1 Fremont) N = 1225 12 months	NR	Psychiatric inpatient utilization (admissions): 2004: 11 2005: 2 2006: 3 2007: 3	Psychiatric inpatient utilization (Psychiatric Inpatient Days/1000 pts/year): 2004: 129.4 2005: 27.1 2006: 41.2 2007: 23.6	NR
Landi 1999[16] The Silver Network Project Northern Italy (town of 50,000) N = 115 6 months	15%	Number of hospital admissions: 56 (pre-intervention) vs 46 (post-intervention) $P < .001$	Total hospital days: 1587 vs 885; $P = .001$ No. hospital days per user: 28.7 vs 18.3; $P = .009$ No. hospital days per admission: 16.1 vs 11.9; $P = .009$	NR
North 2008[17] HBPC (VA Home-based Primary Care) Veterans Affairs Medical Center, Denver, Colorado N = 104 12 months	NR	Utilization data pre- and post-HBPC admission: Pre- 822 Post- 135 $P < 0.01$	NR	Utilization data pre- and post-HBPC admission: Pre = 166 vs Post = 86, $P < 0.01$
Rosenberg 2012[18] PIECH (Primary Integrated Interdisciplinary Elder Care at Home) Victoria, British Columbia N = 248 12 months	Discharged patients (N = 50): 32 (64%) 15 (46.9%) deaths occurred at home, 14 (43.8%) in the hospital, 2 (6.3%) in hospice, and 1 (3.1%) in a nursing home	Active (N = 198): Pre-entry: 84 Post-entry: 34 $P = <.001$ Discharged (N = 50): Pre-entry: 32 Post-entry: 36 $P = .68$	Active (N = 198) Pre-entry: 1,197 Post-entry: 459 $P = .004$ Discharged (N = 50) Pre-entry: 503 Post-entry: 602 $P = .58$	Active (N = 198) Pre-entry: 90 Post-entry: 82 $P = .66$ Discharged (N = 50) Pre-entry: 30 Post-entry: 13 $P = .02$

Author Year Care model name Setting Sample size Follow-up	Mortality rate	Hospitalization	Hospital days	ED visits
Vedel 2009[19] COPA (*coordination de personnes agées*, or coordination of elderly care) 16th borough of Paris, France; every hospital and community-based health and social service agency was asked to participate N = 106 12 months	7.5%	<u>Hospitalization (N = 106)</u>: 29.2% <u>Planned</u>: 22.6% <u>Unplanned</u>: 6.6% <u>Ratio planned/total</u>: 77.4%	<u>Average length of stay (days)</u>: 31	<u>ER visit (%)</u>: 9.4%
Weaver 2008[20] 3 models: (1) VA as sole care provider (2) VA-community partnership with a PACE (3) VA as care manager with care provided by PACE 3 VA medical centers: Ohio, Colorado, South Carolina Model 1: N = 181 Model 2: N = 102 Model 3: N = 85 Up to 36 months for early enrollees; otherwise, 12 months	Model 1: 28% Model 2: 28% Model 3: 34%	Inpatient use % (6 prior to enrollment vs 6 months after enrollment N = 191) Model 1: 40 vs 43% Model 2: 41 vs 41% Model 3: 20 vs 31% NS % patients with inpatient admissions at 12 month follow-up (N = 345) Model 1: 49% Model 2: 41% Model 3: 35%	Mean days per patient at 12 months after enrollment: Model 1: 8.55 Model 2: 2.59 Model 3: 2.07	NR
Wieland 2000[21] PACE (DataPACE) (Program description Eng 1997) Any PACE site N = 10 (all are urban centers) N = 5478 NR	22% (1183)	Median time to first hospitalization = 773 days Calculated for N = 5478 (patients admitted between 1/1/1990-3/31/1997) PACE population bed days per 1000 participants: 1992 (2777), 1998 (2046), control groups NR	Acute hospital days (mean): 1992 6.68 (site range 3.5-10.64), 1998 4.73 (site range 2.8-10.23)	NR

ABBREVIATIONS: ADL = Activities of Daily Living, ALS = Amyotrophic Lateral Sclerosis, APN = Advanced Practice Nurse, CA+score = Contact Assessment, COPA = Coordination of Professional Care for the Elderly, COPD = Chronic Obstructive Pulmonary Disease, DM = Diabetes Mellitus, ED = Emergency Department, FTE = Full-time Equivalent, HBPC = Home-based Primary Care, HF = Heart Failure, HTN = Hypertension, IADL = Instrumental Activities of Daily Living, MBH = On-site Mental and Behavioral Health, MC = Medical Comorbidities, MDD = Major Depressive Disorder, MDS-HC = Minimum Data Set for Home Care, MS = Multiple Sclerosis, MSQ = Mental Status Questionnaire, N = Number, NA = Not Applicable, NP = Nurse Practitioner, NR = Not Recorded, PACE = Program of All-Inclusive Care for the Elderly, PCC = Psychiatric and Cognitive Comorbidities, PCP = Primary Care Physician, PIC = Primary Intensive Care, PIECH = Primary Integrated Interdisciplinary Elder Care at Home, QoL = Quality of Life, RN = Registered Nurse, RR = Relative Risk, TBI = Traumatic Brain Injury, VAMC = Veterans Affairs Medical Center, VNA = Visiting Nurse Association

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