

Appendix B. Example Care Models

The following examples represent a sample of care models and programs described in the text, for which there is relatively stronger evidence of impact. These examples were compiled from published literature and are not exhaustive. Bolded terms correspond to the attributes summarized in Exhibit 3.

Program/Sponsor	Target Population	Key Components	Results
Geriatric Resources for Assessment and Care of Elders (GRACE), Indiana University ¹	Low-income (<200% of the federal poverty level) seniors with multiple diagnoses ² 25% of seniors enrolled were deemed high-risk for hospitalization; these patients were categorized as a high-risk subgroup for analysis ³	<ul style="list-style-type: none"> Support team consisting of advanced practice nurse and social worker work with elderly in the home and community⁴ In-home assessment and specific care protocols inform individualized care plan Support team works closely with larger interdisciplinary care team Patient education and self-management plans include tools for low-literacy seniors 	<p>After two intervention years of a three-year controlled research study⁵:</p> <ul style="list-style-type: none"> use of emergency department significantly lower in intervention group compared to usual care hospitalization rate significantly lower in high-risk patients in intervention group compared with high-risk patients receiving usual care among high-risk patients, the program was cost-neutral in the first two years, and cost-saving in the third year (postintervention)
Guided Care, Johns Hopkins University ⁶	Older adults with multiple chronic conditions at high risk of high health expenditures in the next year	<ul style="list-style-type: none"> Predictive modeling and 12 months of claims data used to identify the 20%–25% of patients most at risk of needing complex care in the near future⁷ RNs trained in complex care management perform in-home assessments and develop care plans to coordinate care with multidisciplinary providers⁸ Patient education and self-management strategies focus on addressing issues before hospitalization becomes necessary 	<p>A 32-month cluster-randomized trial at eight urban and suburban practices in the Baltimore–Washington area, representing over 900 patients and 300 family caregivers, found that Guided Care participants experienced:⁹</p> <ul style="list-style-type: none"> 29% decrease in home health episodes 26% fewer skilled nursing facility days 13% fewer hospital readmissions 8% fewer skilled nursing facility admissions <p>These improvements were more pronounced among Guided Care patients receiving primary care from an integrated delivery system.</p>
Naylor Transitional Care Model, University of Pennsylvania ¹⁰	Hospitalized, high-risk older adults with chronic conditions ¹¹	<ul style="list-style-type: none"> Multidisciplinary provider team led by advanced practice nurses engages in comprehensive discharge planning Three-month post-discharge follow-up includes frequent home visits and are telephone availability Involve patients and family members in identifying goals and building self-management skills 	<p>Randomized controlled trial found the following one year after discharge:¹²</p> <ul style="list-style-type: none"> 36% fewer readmissions 38% reduction in total costs Short-term improvements in overall quality of life and patient satisfaction
Improving Mood: Promoting Access to Collaborative Treatment (IMPACT), University of Washington ¹³ (pilot-tested at 18 primary care clinics at 7 sites across the U.S.) ¹⁴	Older adults suffering from depression ¹⁵ The model has also been adapted for other populations with depression, including adults of all ages, adolescents, cancer patients, and patients with chronic illnesses, including diabetes. Evaluations indicate that these IMPACT adaptations are also effective. ¹⁶	<ul style="list-style-type: none"> Collaborative care: Primary care physician works with depression care manager (e.g., nurse, social worker, or psychologist supported by medical assistant or other paraprofessional) to develop and implement treatment plan including anti-depressant medication and/or short-term counseling. Team includes consulting psychiatrist. Care manager also educates patient about depression and coaches in self-care. Providers utilize ongoing measurement and tracking of outcomes with validated depression screening tool, such as Patient Health Questionnaire-9, and adapt care to changing symptoms Once a patient improves, case manager and patient jointly develop a plan to prevent relapse.¹⁷ 	<p>A randomized controlled trial of 1801 adults age 60 or older with major depression, dysthymic disorder, or both, found that:</p> <ul style="list-style-type: none"> After 12 months, about half of IMPACT patients had a 50% or greater reduction in depressive symptoms from their baseline assessment compared to 19 percent of patients who received usual primary care.¹⁸ Over a four year period, total health care costs for IMPACT patients were approximately \$3,300 lower per patient on average than those of patients receiving usual primary care—even after accounting for the cost of providing the IMPACT intervention.¹⁹

Program/Sponsor	Target Population	Key Components	Results
Health Quality Partners ²⁰ (participant in the Medicare Coordinated Care Demonstration)	Medicare beneficiaries with chronic conditions	<ul style="list-style-type: none"> • RN care coordinators focus on changing patient behavior²¹ • Focus on frequent in-person contact with both patients and physicians • Evidence-based patient education including condition-specific self-monitoring training²² 	<p>Randomized controlled study found that after six years the intervention, among high-risk subgroup²³:</p> <ul style="list-style-type: none"> • Reduced hospitalizations by 25% • Reduced emergency department visits by 28% • Reduced average monthly Medicare Part A and B expenditures by 21%
Massachusetts General Physicians Organization Care Management Program ²⁴ (participant in the Medicare Demonstration for High Cost Medicare Beneficiaries)	Medicare beneficiaries who are high cost and/or have complex conditions	<ul style="list-style-type: none"> • Care managers are integrated into primary care practices²⁵ • Care managers provide patient education and address both medical and psychosocial needs • Focus on preventing exacerbations that lead to emergency department visits and inpatient admissions • Case managers also support end-of-life decision-making 	<p>After three years, intervention group exhibited²⁶:</p> <ul style="list-style-type: none"> • 20% reduction in hospital admissions • 13% reduction in emergency department visits • 7% annual savings after accounting for intervention costs
Chronic Disease Self-Management Program (CDSMP), Stanford University ²⁷ (as piloted at Kaiser Permanente, Northern California)	Adults with one or more chronic conditions ²⁸	<ul style="list-style-type: none"> • Patient education occurs in small group courses in a community setting, including family members and caregivers, and teaches strategies and skills to better cope with and manage common problems and symptoms • Course facilitated by two trained peer leaders, at least one of whom is a nonmedical professional, who often have chronic conditions themselves • Patients practice strategies and skills and receive highly interactive feedback in a supportive environment to enhance their sense of self-efficacy, and their confidence in their ability to manage their conditions • Program is of limited duration (2.5 hours per week over 6-week period) and easy to export 	<p>A randomized clinical trial of 952 patients age 40 and older with chronic conditions that compared CDSMP patients with wait-list control subjects found that after six months, treatment patients experienced:</p> <ul style="list-style-type: none"> • fewer physician visits, ER visits, and hospitalizations and shorter lengths of stay • more energy, less fatigue, fewer social limitations, and greater improvement in self-reported health²⁹ • fewer ER and physician visits, reduced health distress, and improved self-efficacy, compared to baseline, even after two years³⁰ <p>A national survey of 1,170 CDSMP participants in 17 states at baseline, six months, and one year and found:</p> <ul style="list-style-type: none"> • significant reductions in ER visits and hospitalizations at six months and a reduction in ER visits at one year • potential net savings in health care costs of \$364 per participant, after accounting for cost of program; if 5% of adults with one or more chronic conditions participated in program, national savings in health care costs would be an estimated \$3.3 billion.³¹
Care Management Plus, Oregon Health and Science University and the John A. Hartford Foundation ³² (piloted at Intermountain Healthcare)	Originally designed to serve adults 65 years and older, who have multiple comorbidities, diabetes, frailty, dementia, depression and other mental health needs; entry is by referral from the primary care provider. (The model has been adapted to serve non-elderly patients with complex needs.)	<ul style="list-style-type: none"> • Specially trained care managers (usually RNs or social workers) located in primary care clinics perform person-centered assessment and work with families and providers to formulate and implement a care plan³³ • Care manager ensures continuity of care and regular follow up in office, in the home, or by phone • Continuity of care enhanced by specialized IT system • Care manager provides coaching and self-care education for patients and families 	<p>Controlled study comparing patients receiving care management in seven intervention clinics with similar patients in six control practices within Intermountain Healthcare found:</p> <ul style="list-style-type: none"> • decreased hospitalization rates after two years for intervention patients, although this result was only significant among patients with diabetes³⁴ • approximately 20% reduction in mortality among all Care Management Plus patients, reduction most pronounced in patients with diabetes³⁵

Program/Sponsor	Target Population	Key Components	Results
Program of All-Inclusive Care for the Elderly (PACE), operated by local nonprofit PACE organizations at 114 sites in 32 states under agreements with the Centers for Medicare and Medicaid Services (CMS) ³⁶	<p>Adults age 55+ with insurance through Medicare and/or Medicaid, with chronic conditions and functional and/or cognitive impairments, and living in the service area of a local PACE organization</p> <p>Patients must be certified by Medicaid as eligible for nursing home level of care, and able to live safely at home with help from PACE</p>	<ul style="list-style-type: none"> Each PACE site provides comprehensive preventive, primary, acute, and long-term care and social services, including adult day care, meals, and transportation Interdisciplinary team meets regularly to design individualized care plans Goal is to allow patients to live independently in the community Patients receive all covered Medicare and Medicaid services through the local PACE organization in their home and community and at a local PACE center, thereby enhancing care coordination³⁷ Clinical staff are employed or contracted by the local PACE organization, which is paid on a per-capita basis and not based on volume of services provided 	<p>A recent review of the literature found that PACE enrollees experienced fewer hospitalizations but more nursing home admissions, better quality for certain aspects of care such as pain management, and lower mortality, than comparison groups.³⁸</p> <p>Overall, PACE appeared cost-neutral to Medicare and may have increased costs for Medicaid, though more research is needed to reflect current payment arrangements.³⁹</p> <p>A subsequent study found that PACE may be more effective than home and community-based waiver programs in reducing long-term nursing home use, especially for those with cognitive impairments.⁴⁰</p> <p>Higher self-rated PACE team performance and other program characteristics were associated with better enrollee functional health outcomes.⁴¹</p>
CareMore, ⁴² a subsidiary of Anthem	<p>Medicare Advantage plan members in California, Nevada, Arizona, Virginia, and Ohio, and Medicaid managed care plan members in Tennessee</p>	<ul style="list-style-type: none"> Identifies members who are frail and/or chronically ill and in need of or at high risk for hospital admission via comprehensive initial visit upon enrollment Extensivist physicians provide care to hospitalized patients and oversee postdischarge care in skilled nursing facilities and other settings Frail and/or chronically ill members are also enrolled in disease-specific management programs Customized electronic health record and remote monitoring let patients monitor vitals in their homes, with results immediately shared with CareMore team Provides help to members in accessing social and other nonmedical support services and provides transportation to CareMore Care Centers 	<p>As reported in 2011, CareMore's Medicare Advantage plan achieved the following results:</p> <ul style="list-style-type: none"> 30-day hospital readmissions rate was lower than for overall Medicare population (13.6% compared to 19.6% for Medicare fee-for-service).⁴³ members' per capita health spending was 15% less than the regional average.⁴⁴ hospital length-of-stay was shorter: 3.2 days compared to 5.6 day average in Medicare fee-for-service and 4.5 day average for traditional hospitalist programs in California.⁴⁵ <p>Results not yet available for the Medicaid program.</p>
Commonwealth Care Alliance ⁴⁶	<p>Dual-eligibles age 65+ enrolled in a Medicare Advantage Special Needs Plan that participates in the Massachusetts Senior Care Options program⁴⁷</p> <p>Dual eligibles age 64 and younger in the Massachusetts One Care program</p>	<ul style="list-style-type: none"> Provides enhanced primary care and care coordination through multidisciplinary clinical teams led by nurse practitioners⁴⁸ After a comprehensive assessment, individualized care plans are developed to promote independence and functioning Integration of behavioral health care for those who need it Care team available 24/7 in the home, in the hospital, or at the doctor's office Patients' records available 24/7 in proprietary electronic health record system⁴⁹ 	<p>Internal Commonwealth Care Alliance data suggests that Senior Care Options enrollees experienced⁵⁰:</p> <ul style="list-style-type: none"> 48% fewer hospital days than comparable dual eligible in a fee-for-service environment 66% fewer nursing home placements <p>Results not yet available for the OneCare program.</p>

Program/Sponsor	Target Population	Key Components	Results
Hospital at Home ⁵¹ (developed at Johns Hopkins University and tested in medical centers across the U.S.)	Older patients with a targeted acute illness that requires hospital-level care, who also meet validated medical eligibility criteria and live within designated geographic catchment area (e.g. 25 miles or 30-minute travel time from hospital.)	<ul style="list-style-type: none"> • Potentially eligible patients are identified in the hospital emergency department or ambulatory care site. If they meet the validated criteria and consent to participate, they evaluated by physician and transported home, usually via ambulance • One-on-one nursing for initial stage and at least daily nurse and physician visits thereafter • Both nurses and physicians on call around-the-clock for urgent or emergent visits • Some diagnostic services and treatments performed in home setting • Same criteria and guidelines are used to judge patient readiness for transition to skilled nursing facility, or discharge from Hospital at Home as from hospital. 	<p>Evaluation of patients in Hospital at Home program and comparison group of similar inpatients in 2009–2010⁵²:</p> <ul style="list-style-type: none"> • Hospital at Home patients showed comparable or better clinical outcomes and higher satisfaction levels • Excluding physician costs, Hospital at Home per-patient average costs were 19% lower than similar inpatient per-patient average costs for the comparison group. Cost savings were due to lower average length-of-stay and few diagnostic and lab tests. <p>Prospective quasi-experiment with patients 65 and older in three Medicare Managed Care plans at two sites, and at a Veterans Administration medical center, found that⁵³:</p> <ul style="list-style-type: none"> • patients treated at Hospital at Home had shorter length of stay and lower average costs than hospital inpatients.

Notes to Appendix B

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