Care coordination has emerged as a promising element of successful health care and long-term service delivery models. It unites a team of providers to meet individual needs, improves health care access and outcomes, and synchronizes the variety of long-term services and supports. In these models, a care coordinator works closely with the individual, family caregivers, primary care provider, and other health care professionals to improve communication, resulting in improved individual well-being and outcomes.

Initiatives aimed at improving care coordination are especially timely. The prevalence of multiple chronic conditions and functional impairment within the aging population is increasing. Older individuals with multiple chronic conditions need health care that is well coordinated with any needed long-term services and supports. At the same time, the Center for Medicare & Medicaid Innovation (CMMI), created by the Affordable Care Act (ACA), is tasked with testing and rapidly disseminating innovative health care delivery models and alternative payment structures over the next eight years to improve quality while reducing cost.

THE PROMISE OF CARE COORDINATION

Eighty percent of Americans 65 and older have one chronic condition,¹ and almost 50% have multiple chronic conditions.² For individuals with certain chronic illnesses who are hospitalized, 33 to 50% are rehospitalized within 90 days.³ The 15 percent of Medicare enrollees with both chronic conditions and functional limitations who need long-term services and supports account for one-third of Medicare spending.⁴ Care coordination can help to improve care for this population, and reduce the cost of treating them, if the most effective elements of care coordination models are identified, and challenges are addressed. The best care coordination models have much to contribute toward the goals of the ACA and CMMI; they are well-coordinated, and person- and family-centered, across service settings, and promote better communication and interaction among the respective members of the interdisciplinary team, individual, and family caregiver.⁴ EWA and N3C believe that CMMI’s objectives can only be achieved if quality – quantified by results such as reduced hospitalizations and improved quality of life – remains a major focus of the models tested.

DISTINGUISHING BETWEEN CARE COORDINATION & DISEASE MANAGEMENT PROGRAMS

Recent research and evidence reviews have identified some of the elements of care coordination models which are most effective. A weakness of some recent reviews, however, has been failure to note the difference between care coordination and disease management programs, to address the oftentimes significant role of families in coordinating care, and to adequately value the impact of the interventions examined on improving care quality. Care coordination is different from disease management in that it takes a holistic approach to coordinating care and supportive services for the individual overall, rather than focusing on a particular disease. Successful care coordination programs also incorporate significant in-person interaction with the individual and family caregiver; whereas, many disease management programs are telephone based.

A January 2012 Congressional Budget Office report titled, “Lessons from Medicare’s Demonstration Projects on Disease Management, Care Coordination, and Value-Based Payment,” concluded that, on average, the interventions examined did not reduce Medicare spending or generate sufficient savings to offset program fees.⁵ It should be noted, however, that 22 of the 34 programs analyzed reduced hospital admissions by more than 6 percent, including four programs that...
reduced admissions by 15 percent or more. Such reductions represent a significant increase in quality of life for the individuals who avoided hospitalization.

Also noteworthy are differences among the 34 programs CBO analyzed. The Medicare Coordinated Care Demonstration (MCCD) is separate from the remaining five that include less successful Disease Management Demonstrations. The disease management programs analyzed mostly rely on telephonic interventions, show minimal success in randomized trials, and have not generated savings. In contrast, independent policy researchers report that cost reductions and savings found in effective care coordination programs within the MCCD share common components linked to improved outcomes.

Care coordination is centrally important for the success of Medicaid managed care models in place in an increasing number of states, as well as Patient-Centered Medical Homes, and Accountable Care Organizations.

**CARE COORDINATION: Effective Elements**

Elements of care coordination models found to be effective in improving quality of care and coordination of social supports while reducing system cost or remaining cost-neutral are:

**Person- and Family-Centered Care**
- The team should include providers across disciplines and settings, the individual, and family caregivers. Direct-care workers can serve an invaluable role on the care team due to their frequent and ongoing interactions with individuals receiving care.8
- In-person interaction among the individual, family caregiver, care coordinator, and providers encourages better communication regarding the individual’s needs and care. Significant in-person interaction between the individual and care manager is associated with reduced hospital admissions and Medicare spending.9
- Care coordination targeted to individuals with certain health conditions, hospitalization patterns, and functional limitations can generate Medicare cost savings of approximately $100-$120/month per individual.10
- Having the individual and family caregiver centrally involved in care plan development improves outcomes. Particularly for older adults, a family caregiver may play a central role in ensuring that the plan of care is implemented. Literature regarding effective self-management support emphasizes personal empowerment or activation, in addition to active participation, when setting goals and developing treatment plans.11
- Effective models, including many of the ones named in this brief, offer tools and supports specifically for family caregivers, as well as caregiver assessments.8

**Team-Based Care**
- Close interaction between care coordinators and interdisciplinary team members, including physicians,12 results in fewer hospital admissions.
- Encounters with registered nurses, as members of the interdisciplinary team, can lead to a reduction in emergency department visits and unnecessary office visits.13
- Involvement from social workers, as members of the interdisciplinary care team, can help to meet the social support needs of frail individuals with chronic illnesses,14 as well as ensure successful transition from hospital to home.15
- Integration of direct-care workers into care coordination teams can help create partnerships among providers, individuals, and their families.iii

<table>
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<tr>
<th>Promising Care Coordination Models*</th>
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<td>• Geriatric Resources for Assessment and Care of Elders (GRACE)</td>
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* Please see Appendix A: Program Details of Featured Comprehensive and Transitional Care Coordination Models
Comprehensive teams can better meet the individual’s needs, such as teams in which pharmacists participate to assist with medication management.\textsuperscript{16}

Collaborative care models for depressive disorders, in which psychiatrists and psychologists collaborate with primary care providers, reduce depression and increase the individual’s satisfaction with care across multiple populations, including older adults.\textsuperscript{17}

When care coordination is team-based, interdisciplinary and maintains open communication, individuals feel most supported and quality of care improves.\textsuperscript{18}

**Evidence Base**

Care coordination programs with positive, rigorously evaluated and broadly replicable results include comprehensive and transitional care models. While both approaches feature elements in common such as conducting an initial comprehensive assessment and implementing an evidence-based care management plan (including coaching, self-care education, and maintaining links with medical and community-based services), they are differentiated with regard to where the intervention takes place, who performs the intervention, and for how long. Additionally, targeting the highest-risk individuals yields the greatest success.

**CARE COORDINATION: Lessons Learned**

Key points to consider for implementation of effective care coordination models include:\textsuperscript{19}

- Successful care coordination is more likely when the interdisciplinary team has access to timely data on care delivery, especially in regard to hospital admissions.
- Focusing on smooth transitions between care settings is crucial.
- Targeting the highest-risk individuals yields the greatest success in terms of improved quality of care and reduced cost.
- Attention to mental health and psychosocial issues must be incorporated into care coordination models.\textsuperscript{20}

**MEETING FUTURE CHALLENGES: Recommendations for Care Coordination Research & Policy**

In order to realize the full potential of care coordination to improve quality of care – especially for an aging population – EWA and N3C make the following recommendations for policy changes and future research:

- Encourage payment and delivery models that support improved coordination and communication among members of the interdisciplinary team of providers, direct care workers, the individual, family caregivers and others chosen by the individual.
- Strengthen family caregiver capacity to manage care, as appropriate, and provide support to the individual, as well as assess family caregiver capacities, needs and coping ability.
- Ensure that the individual and family caregiver are involved in shared decision-making at each step of care and transitions between settings.
- Target the highest-risk individuals, especially those at risk of hospitalization.
- Develop, support, and use technology, such as health information technology (HIT) and interoperable electronic health records (EHRs) to support effective care coordination and individual and family caregiver engagement. Encourage policies that will enable individuals, family caregivers, and providers to use this technology.
- Craft policies which ensure efficiency, transparency, individual self-determination and safeguards, while supporting access to high quality, coordinated care.
- Promote care coordination models that emphasize care coordination across disciplines and settings of care, including long-term care and other non-medical settings.
APPENDIX A:
Program Details of Featured Comprehensive and Transitional Care Coordination Models

Comprehensive Care

Care Management Plus (CMP): A person-centered intervention designed to reduce mortality and hospital admissions for elderly patients of primary care practice.
- Evidence: Intervention individuals had lower two year all-cause mortality rates; intervention patients with diabetes had lower all-cause mortality and hospitalization rates compared to control group patients with diabetes.
- Target Population: Older adults, 65 years and older, who have multiple co-morbidities, diabetes, frailty, dementia, depression and other mental health needs; physician referral.
- Staffing: RN care manager located in primary care clinics. Each RN has a caseload of 350-500 patients.
- Duration: Ongoing.
- Focus: Person-centered assessment, comprehensive care planning, evidence-based treatment plans and protocols, disease and self-management education, continuity of care and regular follow up by RN care manager, continuity of care via specialized information technology system.21

Geriatric Resources for Assessment and Care of Elders (GRACE): A model to improve the quality of care for low income seniors by the longitudinal integration of geriatric and primary care services across the continuity of care.
- Evidence: Intervention patients at high risk of hospitalization in year two of a three year Randomized Controlled Trials had significantly lower hospital rates and ED visits compared to control group patients. The intervention was cost neutral in the first two years and showed a cost savings in year three.
- Target Population: Older adults, 65 years and older, who had income less than 200% of the federal poverty level.
- Staffing: An APN and social worker (SW) in collaboration with the patient's PCP and a geriatric interdisciplinary team led by a geriatrician. Each RN/SW team has a caseload of 100-125 patients.
- Duration: Ongoing.
- Focus: In-home assessment and individualized care plan; proactive monitoring; use of specific care protocols for evaluation and management of common geriatric conditions, use of an electronic medical record and web-based care management tool; integration with affiliated pharmacy, mental health, home health and community-based and inpatient geriatric services.22

Guided Care: A model of comprehensive health care provided by nurse-physician teams for individuals with multiple chronic conditions.
- Evidence: Improves quality of care, reduces caregiver strain, and suggests a reduction in the use and cost of expensive services, especially in integrated health care delivery systems.
- Target Population: Older adults, 65 years and older, who are at high risk of using health services during the following year.
- Staffing: RN based in primary care practice working with 3-5 physicians. Each RN has a caseload of 50 to 60 patients.
- Duration: Ongoing.
- Focus: In-home assessment and individualized evidence-based comprehensive care guide and action plan; monthly monitoring; patient education and self-management; transitional care; coordinate access to community resources.23

Home Based Primary Care (HBPC): The HBPC program was created in 1972 by the Department of Veterans Affairs to serve veterans with chronic conditions by focusing on providing a home-based approach to healthcare. The HBPC mission is to provide comprehensive, interdisciplinary, primary care in the homes of veterans with complex medical, social, and behavioral conditions for whom routine clinic-based care is not effective.
- Evidence: Since its creation, among high-cost individuals, hospital days have been reduced by 62%, nursing home days by 88% and costs by 24%.
- Target Population: HBPC targets primarily the following three types of patients in need of home care:
  (1) Longitudinal care patients with chronic complex medical, social, and behavioral conditions, particularly those at high risk of hospital, nursing home, or recurrent emergency care.
  (2) Longitudinal care patients who require palliative care for an advanced disease that is life limiting and refractory to disease-modifying treatment.
  (3) Patients whose home care needs are expected to be of short duration or for a focused problem, when such services best help the interdisciplinary team meet the needs of this population.
- Staffing/Services: In home services include primary care visits at home by a physician, APN or PA; care management through a APN, PA, or RN; coordination of services by a SW; therapy visits from a physical,
Program of All-Inclusive Care for the Elderly (PACE): A fully-integrated, provider-sponsored model of care designed to meet the specific health care needs of Medicare and/or Medicaid beneficiaries with both chronic medical conditions and functional and/or cognitive impairments.

- **Evidence:** PACE was evaluated in 1 cross-sectional time series and 3 cohort studies, each of which compared PACE participants with control participants who were receiving different packages of medical and supportive services in their local communities.
  - In the cross-sectional time series PACE had fewer hospital admissions and preventable hospital admissions, as well as fewer total and preventable emergency department visits, compared with a community-based comparison group in which medical care was provided by independent primary care physicians.
  - A 6-year cohort study compared PACE participants with similarly disabled Medicaid enrollees who were receiving community-based supportive services. PACE participants had less pain and fewer unmet needs for assistance in bathing, dressing, and getting around. PACE participants had more nursing home admissions, probably reflecting PACE’s use of nursing homes for subacute, postacute, and respite care.
  - A 12-month cohort study compared PACE participants and those in a Medicaid-sponsored, managed long-term care plan. PACE had fewer hospitalizations, more nursing home stays, and shorter median lengths of stay than participants receiving nurse-provided case management in the managed care plan.
  - A 5-year cohort study found longer median survival among individuals enrolled in PACE than in those who received case management and community services.
- **Target Population:** Most individuals are medically complex, low income, are “dual eligibles” (enrolled in both Medicare and Medicaid), and have disabilities that are that make them dependent on others to assist them with their ADL/IADL limitations. They must be over 55 years old, need a nursing home level of care, and be able to live safely in the community.
- **Staffing/Services:** Each PACE site provides a comprehensive set of services, including: primary and specialty interdisciplinary team services; emergency, hospital, home, palliative, and long term care; case management, prescription drugs, dentistry, laboratory testing, radiology, adult day care, transportation, prosthetics, DME, meals; and respite and education and support for family caregivers.
- **Duration:** Ongoing.
• Focus: Interdisciplinary team care that is responsible for assessments, care planning, and coordination of 24-hour delivery of care, every day of the year.26

Transitional Care

Better Outcomes for Older Adults Through Safe Transitions (Project BOOST): A person-centered intervention that focuses on identifying the needs, abilities, and desires of patients, their immediate caregivers and their outpatient patients for the safe transition out of the hospital during the discharge process.

• Evidence: Not Reported. Goal is to improve the care of patients as they transition from the hospital to home.
• Target Patients: Older adults hospitalized for any of the following: cancer, stroke, diabetes/glycemic complication, COPD, heart failure, depression, risky medications, 5 or more medications, poor health literacy, absence of a formal or informal caregiver, an unplanned hospitalization in the prior 6 months, or need for palliative care.
• Staffing: BOOST is implemented in combination with other care-transitions models such as CTI or TCM.
• Duration: One phone call to high-risk patients within 3 days of hospital discharge, not contact for low-risk patients.
• Focus: BOOST specifies components to be included in the intervention (risk assessment, teach-back process, written discharge instructions communicated to patient and PCP), and provides implementation tools (risk-assessment tool with specific recommended interventions for each identified risk). The BOOST program also includes training and one year of technical assistance to participating hospitals.27

The Bridge Model: A social work-led, person-centered, interdisciplinary model of transitional care. Bridge Care Coordinators conduct a comprehensive pre- and post-discharge assessment and intervene until all identified needs are resolved and stabilized. Bridge is designed to reduce preventable re-hospitalizations and ED visits, improve satisfaction, and improve quality of life for both clients and caregivers.

• Evidence: Improved communication with providers and improved attendance at follow-up medical appointments; ongoing evaluation of a randomized control trial, Administration on Aging care transitions grant data, and Community-based Care Transitions Program data.
• Target Population: Older adults, 60 years or older, with at least 1 chronic condition and a previous hospitalization within the last 6 months. In addition, eligible participants must have at least one of the following: discharged with home health, living alone, or discharged to a skilled nursing facility.
• Staffing: Masters-level clinical Social Worker with experience in aging and community resources.
• Duration: Length varies on need; the average intervention during a randomized control trial was 5.5 days.
• Focus: Ecosystem-based, comprehensive social work assessment; Social Worker leads and facilitates post-discharge care (Aging network, primary care physician, home health, pharmacy, durable medical equipment, other community-based service providers); Motivational Interviewing to improve patient activation and health literacy; support caregivers to reduce stress/burden.28

Care Transitions Intervention (CTI): A person-centered intervention designed to improve the quality and contain costs for patients with complex care needs as they transition across care settings.

• Evidence: Intervention patients had lower 90 day re-hospitalization rates and lower hospital costs at 180 days post discharge.
• Target Patients: Individuals being discharged from the hospital with a diagnosis of: stroke, heart failure, coronary artery disease, cardiac arrhythmias, COPD, diabetes, spinal stenosis, hip fracture, peripheral vascular disease, deep venous thrombosis, and pulmonary embolism.
• Staffing: A transition coach, which can be an APN, RN, SW or occupational therapist. Each transition coach has a caseload of approximately 40 patients.
• Duration: 30 days post hospital discharge.
• Focus: Continuity of care by helping family maintain a personal health record, understand how and when to obtain timely follow-up care, coach patients to ask the right questions of their care providers, help patients increase self-care skills (medication management, increased awareness of chronic illness symptoms, recognizing “red flags” and warning signs and how to respond); initial home visit (48 to 72 hours post hospital discharge), and three follow-up calls 30 days post discharge home.29

Interventions to Reduce Acute Care Transfers (INTERACT II): A quality improvement program designed to improve the early identification, assessment, documentation, and communication about changes in the status of residents in skilled nursing facilities. The goal of INTERACT is to improve care and reduce the frequency of potentially avoidable transfers to the acute hospital.

• Evidence: INTERACT II was evaluated in 25 nursing homes (NHs) in 3 states in a 6 month quality improvement initiative. The 25 NHs experienced a 17% reduction in hospitalization rates compared with the same 6 month period in the previous year. It was estimated that this reduction in hospitalization resulted in Medicare savings in a
100 bed NH of about $125,000 per year.

- **Target Patients:** All residents of a skilled nursing facility.
- **Staffing:** All NH staff, especially certified nursing assistants (CNAs), RNs and LPNs, NPs, PAs, and physicians.
- **Duration:** Ongoing, quality improvement initiative.
- **Focus:** The intervention addresses 3 strategies: identifying, assessing, and managing conditions to prevent them from becoming severe enough to require hospitalization; managing selected conditions, such as respiratory and urinary tract infections in the NH; and, improving advance care planning and developing palliative care plans as an alternative to acute hospitalization for residents at the end of life. INTERACT II has a diverse set of tools and resources available to NHs that implement the initiative.\(^3\)

Re-Engineered Discharge (Project Red): Project RED at Boston Medical Center standardizes the hospital discharge process through the use of 11 separate but mutually reinforcing steps that health care professionals follow from patient admission to post discharge. The steps incorporate the provision of patient education, care coordination with PCPs, and postdischarge follow-up with a pharmacist.

- **Evidence:** Intervention patients had 30 day readmission rates that were 30% lower compared to control group patients and 30 day ED visits were 33% lower in the intervention group compared to the control group. The revised discharge planning process enhanced patient’s understanding of post discharge roles and responsibilities; increased patient's perception of preparedness for discharge; and, increased the likelihood of follow-up appointments with their PCP after discharge.
- **Target Patients:** Adult, non-acute, non-surgical patients, who are discharged to the community (home).
- **Staffing:** Hospital discharge advocate (RN) and a pharmacist.
- **Duration:** 2 days following discharge. RN discharge advocate meets with the patients at least once in the hospital and a clinical pharmacist calls the patients 2 to 4 days after discharge to reinforce the discharge plan, review medications, and problem solve.
- **Focus:** Within the first 24 hours of admission, the RN discharge advocate provides a number of services to and for the patient, including: general patient education, medication reconciliation, communicating with hospital physicians, locating a PCP (if needed), arranging follow-up PCP appointments, connecting patients to pharmacies, explaining discharge information, creating and explaining the post discharge plan, and telling patients who to contact if they have any questions or if a problem arises. The pharmacist calls patients 2 to 4 days after discharge and as necessary thereafter.\(^3\)

Transitional Care Model (TCM): A person-centered intervention designed to improve quality of life, patient satisfaction, and reduce hospital readmissions and costs for elderly patients.

- **Evidence:** Results demonstrate significant improvements in patient safety and health care outcomes, enhancements in quality of life and satisfaction with care, and reductions in overall health care costs. Intervention elderly patients discharged from the hospital to home with Heart Failure had few re-hospitalizations and lower total health care costs.
- **Target Patients:** The initial studies were elderly patients, 65 years and older, discharged to home from the hospital with HF. Currently, patients are eligible for TCM if they have multiple chronic conditions and complex therapeutic regimes.
- **Staffing:** APNs as Transitional Care Nurses (TCN) with a caseload of approximately 40 patients.
- **Duration:** Three months following hospital discharge (index hospitalization).
- **Focus:** The TCN, as part of a nurse-led, multidisciplinary intervention, follows patients from the hospital to their homes, using an evidence-based care coordination approach, provides services targeted to prevent medication and other medical errors, and helps patients and their caregivers with early symptom recognition, management of chronic conditions, and recommendations for future care.\(^3\)


Brown R. The Promise of Care Coordination: Models that Decrease Hospitalizations and Improve Outcomes for Medicare Beneficiaries with Chronic Illness. March 2009, p. 12


3Brown, R. The Promise of Care Coordination: Models that Decrease Hospitalizations and Improve Outcomes for Medicare Beneficiaries with Chronic Illness. March 2009, p. 12


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22The Bridge Model was developed using evidence from the Enhanced Discharge Planning Program (EDPP).


INTERACT II. Tools and resources available at: http://interact2.net.


Additional contact information can be found at: www.eldercareworkforce.org

The Eldercare Workforce Alliance is a project of The Advocacy Fund.