



**National
Priorities
Partnership**

*Convened by the
National Quality Forum*

**CARE COORDINATION CONVENING MEETING
SYNTHESIS REPORT**

SEPTEMBER 2010

NATIONAL PRIORITIES PARTNERSHIP

Convened by the National Quality Forum

CARE COORDINATION CONVENING MEETING SYNTHESIS REPORT

This report summarizes the proceedings of a meeting held as part of the efforts of the National Priorities Partnership workgroups. The purpose of this meeting was to identify actions that achieve reductions in 30-day readmissions, which is a goal of the Care Coordination Priority.

I. Introduction

In its 2008 report, *National Priorities and Goals—Aligning Our Efforts to Transform America’s Healthcare*,¹ the National Priorities Partnership (NPP) identified six National Priorities that if addressed would significantly improve the quality of care delivered to Americans. The Care Coordination Priority aims to ensure that patients receive well-coordinated care within and across all healthcare organizations, settings, and levels of care. More specifically, NPP established four goals associated with this priority that focus on using patient and family feedback to improve care transitions, improving medication reconciliation, and reducing both preventable emergency department visits and 30-day readmission rates.

Identifying priority areas is only the first step toward achieving improvement in the care experience. For change to occur, effective action steps must be identified, shared, and implemented widely. NPP charged individual workgroups to guide the development of comprehensive action plans that address the goals of each priority area. In response to this charge, the Care Coordination workgroup convened a meeting of key stakeholders on September 1-2, 2010, in Washington, DC. (see Appendix A for meeting participants). The purpose of the workshop was to identify specific actions for NPP Partners and others to consider—actions that if implemented would have the greatest potential to address the following Care Coordination Goal:

- **All healthcare organizations and their staff will work collaboratively with patients to reduce 30-day readmission rates.**

While developing the action plan, workshop participants followed a three-part strategy that included:

- Identifying the environmental barriers to achieving the Care Coordination goal of reducing readmissions and developing a plan to address these barriers, which includes specific actions that Partners and other stakeholders can take to address the identified drivers;
- Identifying gaps in measurement and developing a plan for filling high-priority gaps; and
- Addressing implications for health information technology (HIT) and system capacity.

In preparation for this workshop, the National Quality Forum (NQF) commissioned a background paper co-authored by Mary D. Naylor, PHD, RN, FAAN, and Ellen T. Kurtzman, MPH, RN, FAAN, titled *Aligning Our Efforts to Achieve Care Coordination* (Appendix B). The paper offers an overview of the current state of care coordination activities and recommends high-leverage drivers of change toward which collective action can be directed. The authors also highlight components of the Affordable Care Act (ACA) that offer opportunities for furthering care coordination efforts, including pilots, demonstration programs, and other initiatives that would leverage payment systems and improve performance. Key provisions of the law—particularly those related to the pilots of accountable care organizations (ACOs), bundled payment programs, and healthcare homes—create opportunities to better address care coordination through new care delivery structures. The background paper was provided to participants prior to the workshop to generate ideas for discussion and to lay out an evidence-based approach upon which workshop participants could build an action plan.

This report summarizes the workshop proceedings and highlights key drivers and the high-leverage action steps that NPP and other stakeholders must take to promote shared accountability and stimulate change.

II. Key Meeting Themes

Patient and Family Experience Is the Ultimate Measure of Success

Throughout the meeting, there was resounding agreement that the most important and accurate assessment of the care coordination quality comes from patients and their families. Many patients experience a succession of handoffs during the course of an illness, and it is important to recognize that patients and their caregivers are the *only* common thread as they move from setting to setting, as they seek to manage post-hospitalization care (e.g., by making and keeping follow-up appointments, getting prescriptions filled), and ultimately as they attempt to regain control of their lives. Care coordination is the set of activities performed by healthcare professionals that are designed to lead patients and their families from one level or setting of care to another. But what healthcare practitioners consider to be well-executed care coordination may differ from what patients and families consider to be “coordinated care.” Coordinated care reflects the experience of patients and their caregivers and therefore can only be measured through their eyes: Were they prepared for continuing their recovery post discharge? Did they feel well informed about their options? Were their preferences respected? Did they access needed resources? Was follow-up care timely? To fully gauge patient and caregiver experience in this area, there must be widespread understanding as to what ultimately constitutes good care. Without that understanding, care may be perceived as high-quality but may in fact miss the mark.

Providers across the care continuum must focus on patients and their families as *the* primary sources of information regarding the achievement of coordinated care. From the start, a healthcare professional should work with a patient to identify his or her specific needs and, through shared decisionmaking, establish a plan that supports the patient’s transition to the next level of care or to home. On a routine and ongoing basis, patient and family feedback must be captured, disseminated, and acted upon. In addition to established measures of care coordination, such as the 3-item Care Transition Measure (CTM-3), new, valid, and reliable measures and tools are needed to assess health-related quality of life, functional status, and family/caregiver capacity as they relate to achieving transitions that minimize the risk of readmissions. Additionally, the varying needs of patients and families

may necessitate different strategies: a family placing an elderly relative with Alzheimer's disease into a nursing home and a single working parent taking a disabled child home will require very different support.

To achieve success in care coordination, there must be an overall shift from solely relying on provider-centric care processes to assessing how transition efforts and activities affect patient experiences and outcomes. Providers must be held accountable for core elements of a transition plan, but they also must have the flexibility to tailor transition plans to the individual needs of patients according to cultural, psychosocial, and/or socioeconomic factors. Only by addressing these needs in a patient-centered way (e.g., through attention to values and preferences, health literacy) can disparities in health and healthcare be remedied. Significant improvement in care transitions will only occur when patients and their families are embraced as members of the team, when they are included in *all* conversations related to discharge and post-hospitalization needs, and when their care plans address individual needs and achieve patient- and family-centeredness.

Care Coordination Requires Community Engagement and Collaboration

Achieving optimal health will require bridging the gap between the healthcare delivery system and public/community health systems, because psychosocial and environmental factors contribute roughly 80 percent to an individual's overall health in ways that the healthcare system is not designed to address. To this end, effective care coordination must integrate the efforts of healthcare organizations with those of the communities in which patients live and work. Although the healthcare system can and should provide appropriate and necessary medical care, maximizing the use of community resources can offer critical support to individuals and families in the prevention and management of disease.

Workshop participants provided excellent examples to highlight the importance of community-level solutions that are not typically considered to be medical or healthcare interventions, including one of a pediatric patient with asthma exacerbations. The child's symptoms were not sufficiently alleviated by visits to the emergency department and physician's office or by medication. However, the child's caregiver was advised to make basic environmental changes in the home, that is, to use a vacuum cleaner with a HEPA-

filter, a hypoallergenic mattress cover for the child's bed, and pest-management services. These environmental changes coupled with continued medication regimens and monitoring led to improved health status for the patient and a much-improved quality of life for both the child and family, which provides evidence that treating disease using a strictly medical model may not be sufficient.

Longitudinal Care Planning must Replace the Traditional Discharge Summary

Traditionally, the discharge summary has been the primary source of information for patients and their families after an encounter with the healthcare system. However, as a primary mechanism to support optimal care coordination, the discharge summary's usefulness to patients and their caregivers—particularly during complex transitions—is limited. Workshop participants strongly supported building on the traditional discharge plan to evolve it into a longitudinal care plan. Such a plan would originate prior to the onset of any illness, and certainly well in advance of a hospitalization or major medical intervention whenever possible. The plan would remain with patients as they cycle between the health system and the community in which they live, and would be routinely updated during any interaction with a healthcare provider or a community resource. The value of such a plan would be determined in part by whether the provider “receiving” the patient found the care plan to include the information necessary to seamlessly continue the patient's care. Establishing such a feedback loop with measures to assess how well the discharging provider met the receiving provider's information needs would allow for ongoing continuous quality improvement between providers to improve handoffs and patient outcomes.

Participants recommended the development of standard elements for a continuous care plan, including key components and a common language or taxonomy across providers and settings. Eliminating the need to recapture patient information will allow for the provision of optimal care from the start. This care plan would extend beyond medical data to also include patient self-reported information, particularly regarding quality of life and functional status. In addition, it would allow for the tracking of important environmental

and psychosocial factors that could trigger the identification of necessary community resources.

III. Drivers of Change and Moving Toward Action

Informed by workshop presentations and the background and guided by the key themes, participants identified a set of action steps to be taken by stakeholder groups with the overarching goal of improving care coordination and reducing 30-day readmissions. Participants emphasized action steps that would instill in providers a new sense that their responsibility extends beyond completion of hospitalization or office visits and includes working collaboratively with all team members to ensure that patients safely achieve the next step and the best possible outcomes. Participants also stressed the importance of assessing patient outcomes over the short and long term and the need to build provider capacity to use performance information to continuously improve the care that is delivered. Participants focused on NPP's key drivers of change and through a facilitated, iterative group process identified drivers and associated actions with the maximum potential to move toward desired outcomes. The following is a synopsis of the action plan formulated by the group. Appendix C provides a snapshot of the recommended action steps.

Driver: Accreditation, Certification, and Professional Development

Workshop participants recognized that all healthcare professionals, regardless of discipline, have an impact on care coordination and should recognize their important role as team members working to improve their patients' health. They identified the development of core competencies and workforce education around patient-focused care and care transitions as a primary driver of change to improve care coordination broadly. Professional societies can explore the role that their disciplines play in the coordination of patient care and subsequently establish core competencies for their constituents, building on earlier work conducted by the Institute of Medicine (IOM).² Core competencies can then be integrated into education and training programs for individuals entering healthcare professions, and can be embedded into existing certification programs, professional development activities, and performance evaluations for those already practicing.

Given the nursing community's contributions to this area through research and practice, the current emphasis on improving care coordination presents an important opportunity for nurse leadership. As noted in a 2010 report titled *Nursing and the National Priorities Partnership: Aligning Efforts to Transform America's Healthcare*,³ nurses have been champions of care coordination, and the link between nursing expertise and effective care coordination is evident. Allied health professionals and social workers, among others, also offer significant knowledge and expertise in this area, and along with physicians should be integrated into interdisciplinary care teams to more effectively manage patients with multiple or complex conditions.

Driver: Performance Measurement

Workshop participants stressed the need for standard terminology and a common set of care coordination measures that spans the settings and providers through which the effectiveness of care coordination activities can be measured. Additionally, participants recognized the importance of consistently collecting and sharing among providers patient-derived data, but acknowledged that this is a complicated undertaking, particularly for smaller organizations without sufficient data analysis capacity.

Integration of patient-reported outcomes measures is essential because it supports the principle that only patients and their families can provide the purest assessment of care coordination. Valid and reliable instruments for assessing patient-reported functional status and quality of life currently exist, but there is no mechanism that allows for routine collection of this information. As previously discussed, a longitudinal care plan could serve to integrate care processes and important patient information into one record. The establishment of a standard set of measures will be an important and necessary first step in this endeavor. Participants identified specific gaps in measuring care coordination, self-care and caregiver ability, health-related quality of life, patient activation, social determinants correlated with readmissions, and end-of-life care planning and preferences.

Despite gains in care coordination, including a recent NQF Consensus Development Project considering care coordination performance measures and preferred practices, large

gaps remain in understanding the core processes of care coordination. In particular, the ways by which effective, coordinated care is measured are unclear. The NQF-endorsed[®] *Definition and Framework for Measuring Care Coordination*⁴ offers important guidance, because it details domains to which measurement can be mapped—the healthcare home, a proactive plan of care and follow-up, communication, information systems, and transitions or “hand-offs”—all of which were explicitly discussed during this meeting. Additionally, NQF’s *Preferred Practices and Performance Measures for Measuring and Reporting Care Coordination*⁵ report offers a starting point from which to further develop measures.

Workshop participants also discussed methodological issues around measurement, particularly risk-adjustment, which may deemphasize a need to focus on disparities in outcomes in the care coordination area. Additionally, measurement needs may vary based on the population being measured. As an example, there are limitations to focusing on readmissions within the pediatric population. Any hospital admission is seen as a failure resulting from gaps in care, and addressing only readmissions deemphasizes the importance of primary care and keeping children healthy and out of the hospital. An additional challenge to care coordination occurs as the pediatric population transitions from childhood to adolescence to adulthood, particularly for those patients with an existing medical history. Furthermore, multiple timeframes for measuring readmission rates may be necessary to offer a broader perspective as to whether the best possible outcome was achieved.

Driver: Infrastructure Supports

The discussion of infrastructure supports focused primarily on the use of health information technology (HIT) as an essential enabler of effective care coordination. Participants noted different types of HIT that if capitalized on could significantly improve the quality of care experienced by patients, specifically electronic/personal health records (EHRs/PHRs), health information exchanges (HIEs), and various telehealth capabilities. Utilizing HIT for clinical decision support, remote patient and caregiver education, medication management support, and gathering patient experience data also were

emphasized as potential contributors to improved care coordination. Participants identified specific areas of research to be targeted.

EHRs/PHRs—Care coordination was identified as a top priority for inclusion in meaningful use criteria for providers who aim to qualify for Medicare and Medicaid incentive payments for the use of EHRs. Although the initial care coordination criteria emphasized the effective exchange of meaningful clinical information among the professional healthcare team members, the HIT Policy Committee Quality Measures Workgroup is exploring future measurement needs and is considering how to integrate care plans, care transitions, appropriate and timely follow-up, and intervention coordination into meaningful use criteria. To facilitate and ensure that key elements and processes are captured, workshop participants recommended the consideration of elements identified in the Transitions of Care Consensus Policy Statement⁶ and NQF-endorsed preferred practices.

Integrating data captured in PHRs (which offer individuals and patients the autonomy to track and share their personal health information) with EHRs and other healthcare data will be critical to achieving seamless care coordination and a longitudinal care plan. This will ensure that all parties have timely access to accurate, up-to-date information. HIEs also offer a solution for bridging the data gap and integrating patient information between provider organizations with disparate health information systems. Although HIT is not the sole solution to effectively coordinating care, it is a critical tool that must be incorporated into any strategy to improve patient outcomes. Workshop participants recommended further exploring emerging technologies—such as mobile health (m-health) applications—to track personal health information, including healthcare needs and preferences, particularly for minority populations, many of whom increasingly have cell phones but may not have personal computers.

Telehealth—Participants emphasized the need to expand the utilization of telehealth for improving care coordination. Advances in telehealth have pushed its use beyond basic remote monitoring and communication to more complex patient management functions,

including alerts and decision support for providers, patients, and caregivers. Studies of patients with congestive heart failure have demonstrated reductions in hospitalizations for heart failure exacerbations and other cardiac-related issues when telehealth is used.⁷ Telehealth interventions may include the use of interactive weight scales and blood pressure cuffs along with interactive devices that relay responses to a series of questions about clinical status and medication compliance to the care manager. Participants agreed that the broader proliferation and use of telehealth offer a significant opportunity for improving care, particularly for rural populations and for patients with chronic conditions who may need significant and frontloaded post-hospitalization monitoring. Telehealth has the potential to address unreliable information transfer and to aide in patient engagement and activation.

As a “disruptive technology” that could fundamentally change practice patterns and delivery models, HIT shows promise for addressing issues of poor coordination and information exchange. It also has the potential to mitigate workforce and productivity issues by fostering new models of care that enable more professionals to practice to the full extent of their licenses through the use of these advanced technological supports. Use of innovative technologies, however, will require a specially trained workforce, which also necessitates innovations in workforce education and training.

Research—Workshop participants discussed the issues related to gaps in knowledge regarding what constitutes high-quality care coordination, that is, the core components that ensure smooth transitions and prevent readmissions. To spread successful programs, these core elements must be identified and followed by translational research and the development of tools and resources to assist providers and health professionals in implementation. Additional research must focus specifically on vulnerable populations and on the social determinants that can be barriers to keeping populations healthy and out of the hospital.

Driver: Performance-Based Payment and Public Reporting

With the passing of the Affordable Care Act (ACA), even greater attention is being paid to measuring performance, and reporting data and reimbursing providers based on that performance. Many provisions in the legislation speak to approaches to improve care coordination through various pilots, demonstration programs, or new initiatives that leverage payment systems and performance.

The Hospital Readmissions Reduction Program, for example, would adjust payments for hospitals paid under the Inpatient Prospective Payment System (IPPS) based on a hospital's percentage of potentially preventable Medicare readmissions, initially for acute myocardial infarction, heart failure, and pneumonia, and would report this information publicly. Another provision directs the Department of Health and Human Services (HHS) to establish a Community-Based Care Transitions Program to provide funds to community-based organizations to improve care transition services across a continuum of care for high-risk Medicare beneficiaries (including individuals with multiple readmissions). The Centers for Medicare & Medicaid Services (CMS) will enhance its existing Hospital Compare, Home Health Compare, Nursing Home Compare, and Dialysis Facility Compare websites and will create a new Physician Compare website. If well-aligned, these various payment and public reporting programs could offer incentives to improve care coordination for patients across the healthcare delivery system and beyond.

Finally, ACA sets forth various demonstration and pilot programs to combine payment reform with the development of innovative patient care models, which will focus on the responsibilities of accountable care organizations (ACOs). These could include group practice arrangements, networks of individual practices, partnerships or joint ventures between hospitals and ACO professionals, and other arrangements. ACOs would be accountable for clinical processes and outcomes, patient and caregiver experience of care, and utilization (such as hospital admission rates for ambulatory care-sensitive conditions), and would accrue a portion of savings in return for meeting or exceeding benchmarks on per-capita Medicare expenditures. Clearly, the incorporation and reimbursement of evidence-based care coordination interventions will be critical to the success of these new

care delivery models, whether they involve ACOs, patient-centered medical homes, bundled payment, or other programs.

IV. Path Forward

To achieve successful care coordination and a significant reduction in readmissions, attention must be shifted from emphasizing provider-centric care processes to emphasizing patient and caregiver needs and supports, as well as their experiences and personal health outcomes. The key drivers and associated actions presented in this report are offered as a starting point to address readmissions and to improve overall care coordination. NPP encourages all stakeholder groups to consider how they might contribute or collaborate with others—particularly between the public and private sectors—to achieve these goals, and where feasible, to take specific and immediate action.

NOTES

1. National Priorities Partnership, *National Priorities and Goals: Aligning Our Efforts to Transform America's Healthcare*, Washington, DC: National Quality Forum; 2008.
2. IOM, *Health Professions Education: A Bridge to Quality*, Washington, DC: The National Academies Press; 2003.
3. National Quality Forum (NQF), *Nursing and the National Priorities Partnership: Aligning Efforts to Transform America's Healthcare*, Washington, DC: National Quality Forum; 2010.
4. NQF, *NQF-Endorsed Definition and Framework for Measuring Care Coordination*, Washington, DC: National Quality Forum; 2006.
5. NQF, *Preferred Practices and Performance Measures for Measuring and Reporting Care Coordination*, Washington, DC: National Quality Forum; 2010.
6. Snow V, Beck D, et al., Transitions of Care Consensus Policy Statement, American College of Physicians-Society, *J Gen Intern Med*, 2009; 24(8):971–976.
7. SPAN-CHF II: Tufts-New England Medical Center; Lahey Clinic; Beth Israel-Deaconess Medical Center; Rhode Island Hospital. Weintraub, et al. AHA 2005.

**APPENDIX A
NATIONAL PRIORITIES PARTNERSHIP
CARE COORDINATION CONVENING MEETING ATTENDEES
SEPTEMBER 2010**

NATIONAL PRIORITIES PARTNERSHIP
Convened by the National Quality Forum

CARE COORDINATION CONVENING MEETING

INVITED PARTICIPANTS

Nancy Foster (Co-Chair)

American Hospital Association, Washington, DC

Rita Munley Gallagher (Co-Chair)

American Nurses Association, Silver Spring, MD

Tanya Alteras

National Partnership for Women & Families, Washington, DC

Richard Antonelli

Children's Hospital Integrated Care Organization, Children's Hospital, Boston, MA

Traci Archibald

Centers for Medicare & Medicaid Services, Baltimore, MD

Jane Brock

Colorado Foundation for Medical Care, Denver, CO

Donald Casey, Jr.

Atlantic Health, Morristown, NJ

Marilyn Chow

Kaiser Permanente, Oakland, CA

Eric Coleman

University of Colorado Health Sciences Center, Aurora, CO

Steven Counsell

Indiana University School of Medicine, Indianapolis, IN

Molly J. Coye

Public Health Institute, Oakland, CA

Martin Crane

Federation of State Medical Boards, Boston, MA

L. Greg Cunningham

American Case Management Association, Little Rock, AK

Adam Darkins

Veterans Health Administration, Washington, DC

NATIONAL PRIORITIES PARTNERSHIP
Convened by the National Quality Forum

Andrew Duncan

National Hospice and Palliative Care Organization, Alexandria, VA

Lynn Feinberg

National Partnership for Women and Families, Washington, DC

Penny Feldman

Visiting Nurse Service of New York, New York, NY

Catherine Follmer

Catholic Healthcare Partners, Cincinnati, OH

Lillee Gelinas

VHA, Inc., Dallas, TX

Heidi Gil

Planetree, Derby, CT

Donald Goldmann

Institute for Healthcare Improvement, Cambridge, MA

Kathleen Grady

Northwestern University Feinberg School of Medicine, Chicago, IL

Sheila Haas

Loyola University Chicago, Niehoff School of Nursing, Chicago, IL

Stephanie Hammonds

Health Resources and Services Administration, Rockville, MD

James Holly

SETMA, LLP, Beaumont, TX

Eric Howell

Johns Hopkins University School of Medicine, Baltimore, MD

Gail Hunt

National Alliance for Caregiving, Bethesda, MD

Stephen Jencks

Independent Consultant in Healthcare Safety and Quality/IHI, Baltimore, MD

Susan Kosman

Aetna, Hartford, CT

Gerri Lamb

Arizona State University College of Nursing and Health Innovation/Emory University, Atlanta, GA

NATIONAL PRIORITIES PARTNERSHIP
Convened by the National Quality Forum

Michael Lardiere

National Association of Community Health Centers, Bethesda, MD

Christine Leyden

URAC, Washington, DC

Marie Mann

Health Resources and Services Administration, Rockville, MD

Mary Naylor

University of Pennsylvania School of Nursing, Philadelphia, PA

Eugene Nelson

Dartmouth Hitchcock Medical Center, Lebanon, NH

Ileana Pina

Case Western Reserve University, Cleveland, OH

Robert Saunders

National Committee for Quality Assurance, Washington, DC

Ellen Schwalenstocker

National Association of Children's Hospitals and Related Institutions, Alexandria, VA

Gerald Shea

AFL-CIO, Washington, DC

David Stevens

National Association of Community Health Centers, Bethesda, MD

Thomas Tsang

Office of the National Coordinator, Washington, DC

James Walton

Baylor Health Care System, Dallas, TX

Larry Westfall

Ortho-McNeil-Janssen Pharmaceuticals, Inc., Downingtown, PA

Marla Weston

American Nurses Association, Silver Spring, MD

Janet Wright

American College of Cardiology, Washington, DC

NATIONAL PRIORITIES PARTNERSHIP
Convened by the National Quality Forum

PROJECT STAFF

Tom Valuck

Senior Vice President, Strategic Partnerships

Karen Adams

Vice President, National Priorities Partnership

Rosemary Kennedy

Senior Director, Nursing and Healthcare Informatics

Wendy Vernon

Senior Director, National Priorities Partnership

Anisha Dharshi

Senior Program Director, National Priorities Partnership

Nicole Williams McElveen

Senior Program Director, Performance Measures

Christy Olenik

Evaluation Methodologist

Lindsay Lang

Program Director, Strategic Partnerships

Nadine Allen

Research Analyst, Strategic Partnerships

Laura Zaichkin

Intern, Strategic Partnerships

APPENDIX B
NATIONAL PRIORITIES PARTNERSHIP

ALIGNING OUR EFFORTS TO ACHIEVE CARE COORDINATION

MARY D. NAYLOR, PHD, RN, FAAN
ELLEN T. KURTZMAN, MPH, RN, FAAN

Aligning Our Efforts to Achieve Care Coordination

A White Paper Commissioned by the National Quality Forum (NQF)

Mary D. Naylor, PHD, RN, FAAN** & Ellen T. Kurtzman, MPH, RN, FAAN

** *corresponding author*

It is widely acknowledged that the U.S. health care system is fragmented, suboptimal, and excessively costly.^{1,2} Early reports published by the Institute of Medicine (IOM) placed a spotlight on significant lapses in health care quality, safety, and efficiency.³ More recent evidence substantiates that which has been known for years—in addition to significant disparities common among racial and ethnic minorities,⁴ the system is characterized by widespread variation in health care outcomes resulting from underuse, overuse, and misuse of services.^{5,6,7}

Earlier responses to these problems included the 1998 President’s Advisory Commission on Consumer Protection and Quality in the Health Care Industry report, *Quality First: Better Health Care for All Americans*.⁸ The Commission proposed more than 50 recommendations aimed at “reducing the impact and burden of illness, injury, and disability and improving the health and functioning of the people of the United States.”^(p. 2) As a first step toward improving the quality of health care, the Commission urged then President Clinton to demonstrate leadership by overseeing the creation a concise set of national aims for quality improvement.

In the dozen years since the Commission’s report was released, significant progress has been made on identifying and achieving consensus on health care quality improvement aims. In 2003, the IOM identified 20 priority areas for action.⁹ In 2008, the National Priorities Partnership (NPP), a group of more than two dozen leading health care, consumer, employer, and public and private payer groups, enhanced that which the IOM proposed with its identification of six national priorities selected for their potential to eliminate waste, harm, and disparities and achieve high value health care.¹⁰

A common theme in each of the independent IOM and NPP priority setting efforts has been the need to achieve rapid and sustainable improvements in care for patients and their families as

they navigate an increasingly fragmented and complex health care system. This thread is commonly referred to as *care coordination*.

What is Care Coordination?

Care coordination is terminology that typically refers to the timely and effective communication and delivery of integrated and seamless services to patients and their families and their informal caregivers^{††} as they transfer from one provider or practitioner of care to another. While national interest has grown in the organization and delivery of such care, until recently, there has been no uniform definition of care coordination. An evidence review funded by the Agency for Healthcare Research and Quality (AHRQ), for example, identified more than three dozen unique definitions of care coordination from which five common elements were apparent:

1. involvement of numerous participants;
2. interdependence of participants to carry out disparate activities;
3. necessity of participants to know about their own and others' roles, and available resources;
4. reliance on information exchange; and
5. integration.^(11, p. 41)

In 2006, the National Quality Forum (NQF) endorsed, through consensus, a definition of care coordination along with five supporting domains (i.e., health care home^{‡‡}, proactive plan of care and follow-up, communication, information systems, transitions or “hand offs”) and four principles which reflect these common elements. As defined by NQF:

Care coordination is a function that helps ensure that the patient's needs and preferences for health services and information sharing across people, functions, and sites are met over time. Coordination maximizes the value of services delivered to patients by facilitating beneficial, efficient, safe, and high-quality patient experiences and improved healthcare outcomes.^{12(p. 1)}

^{‡‡} also referred to as patient-centered medical home

While care coordination is a broad set of functions aimed at achieving integration, transitional care specifically targets care at highly vulnerable health care exchange points. As defined, transitional care is a range of *time limited* services and environments that complement primary care and are designed to ensure health care continuity and avoid preventable poor outcomes among at risk populations as they move from one level of care to another, among multiple providers, and across settings.^{13,14} Transitional care services optimally bridge the gap among a diverse range of providers, services, and settings by the systematic application of evidence-based interventions that have typically incorporated strategies intended to improve communication and transfer of information within and across hospital and post-acute care services, enhance post-acute care follow-up, and decrease gaps in care through the use of a single, consistent provider.¹⁵ Evidence has demonstrated the effectiveness of transitional care to interrupt a chronic illness trajectory characterized by frequent episodes of acute care and impact long-term outcomes.¹⁶

This paper seeks to examine the current state of care coordination, identify national ‘assets’ most likely to stimulate rapid improvements in this cross-cutting dimension of health service delivery, and propose specific recommendations that, if implemented, would accelerate achievement of the NPP’s priority statement, vision, and goals for care coordination (box 1).

Box 1: NPP Care Coordination Priority

Priority Statement: Patients receive well-coordinated care within and across all healthcare organizations, settings, and levels of care.

Vision: We envision a healthcare system that guides patients and families through their healthcare experience, while respecting patient choice, offering physical and psychological supports, and encouraging strong relationships between patients and the healthcare professionals accountable for their care.

Goals°:

- Healthcare organizations and their staff will continually strive to improve care by soliciting and carefully considering feedback from all patients (and their families, when appropriate) regarding coordination of their care during transitions.
- Medication information will be clearly communicated to patients, family members, and the next healthcare professional and/or organization of care, and medications will be reconfirmed each time a patient experiences a transition in care.
- All healthcare organizations and their staff will work collaboratively with patients to reduce 30-day readmission rates. To get there, all healthcare organizations and their staff will implement evidence-based models, such as the TCM, beginning with patients diagnosed with heart failure, acute myocardial infarction, and pneumonia. This will include a process for discharge planning, a focus on self-care, and plans for a postdischarge visit with the healthcare professional.
- All healthcare organizations and their staff will work collaboratively with patients to reduce preventable emergency department visits.

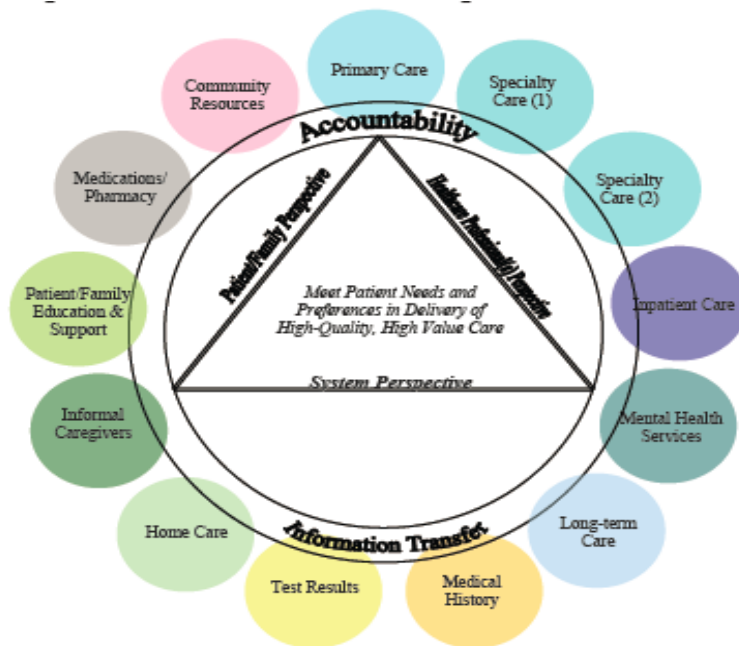
°NOTE: To achieve the NPP’s vision, four specific goals have been identified. This white paper focuses the goal of reducing hospital readmissions because of the NPP’s initial emphasis on it.

In support of the paper’s objectives, NQF’s definition, domains, and principles have been adopted as the foundation. Furthermore, because of the NPP’s initial emphasis on reducing avoidable hospital readmissions, accelerating the nation’s attainment of this goal through the adoption of transitional care strategies has been highlighted.

Organizing Framework

As defined, care coordination and transitional care are stakeholder-dependent, preference-based, and reliant on exchanges between people and settings of care. The highly individual, interrelated, and complex functions that comprise care coordination are well illustrated in a draft framework generated by the Battelle Memorial Institute for AHRQ (figure 1).

Figure 1: Organizing Framework[§]



[§] From McDonald KM, Albin L, Schultz E, Sundaram V, Smith-Spangler C, Brustrom J, Malcolm E. Care coordination measures atlas, version 2. (Prepared by the Battelle Memorial Institute under contract 290-04-0020). Rockville, MD: Agency for Healthcare Research and Quality. Unpublished.

As this model illustrates, two concepts bridge the gaps along the care pathway ensuring that patients and family caregivers’ needs are met and services are maximized. These concepts

include the (1) *timely flow of information* and (2) *smooth transfer of accountability*. For purposes of this paper, these two concepts will serve as the lens through which the evidence and formulation of recommendations will be viewed. In contemplating the most critical levers in the use and adoption of care coordination and transitional care strategies, for example, a critical examination of their likely impact on these organizing constructs will be presented.

Methodology

Four steps were taken to inform the paper's aims:

1. A structured search of the evidence was conducted, which is described in greater detail in appendix A.
2. Key legislative initiatives including the Affordable Care Act¹⁷ and Health Information Technology for Economic and Clinical Health Act (HITECH and referred to as the "Meaningful Use" regulation) were examined to identify potential opportunities to build on that which has been mandated (appendix B).
3. A review of the NPP transformational drivers (i.e., performance measurement, public reporting, payment systems, research/knowledge dissemination, and professional development) and their specific relevance to advancing the vision and goals for care coordination was conducted.
4. Data gathered from these efforts were organized and synthesized to generate a roadmap to accelerate improvements in care coordination and transitional care.

Key Findings

Based on this methodology and the supporting data which are detailed in the accompanying appendices, several findings emerge. It is notable that several of these findings, highlighted for emphasis below, converge with those acknowledged to be critical in achieving one or more of the other NPP priorities and goals:

1. **Limited Progress to Date.** Despite widespread recognition that care coordination is antecedent to attaining higher performance, little progress has been made on achieving significant or sustained improvements. Among the interventions and demonstrations examined in this review, significant improvements in quality indicators are infrequent and economic improvements uncommon.
2. **Highly Tailored Strategies.** The complexity of managing the vast majority of people requiring care coordination, including at-risk children or adults with one or more serious health problems and/ or with multiple chronic conditions, coupled with the range of primary and specialty medical services and accompanying social and support services (e.g., transportation, meal service, respite) required by these patients and their family caregivers generally necessitate the use of highly tailored strategies and interventions that match services to preferences and goals rather than simple, off-the-shelf solutions. This results in a level of customization that is not easily translated or standardized.
3. **Application Beyond Chronically Ill, Older Adults.** While many of the care coordination initiatives and interventions that have been pursued to date have focused on chronically ill older adults, published evidence of effective interventions targeting pediatric populations—especially children with special needs—also exists.
4. **Some Impact on Outcomes.** The limited, available evidence suggests that select care coordination interventions have demonstrated some improvements in selected outcomes including improvements in patient and family caregiver satisfaction, quality of life, functional status, treatment/guideline adherence, and utilization (e.g., hospital readmissions, emergency department visits). However, these effects have not been consistent across studies or interventions.
5. **Effectiveness of Transitional Care.** While the evidence-base substantiating care coordination is limited and observed effects are mixed, a more consistent and robust body of evidence demonstrates the positive effects of transitional care. Select

interventions have been found to improve patients' functional status and satisfaction with care among patients, family caregivers, and physicians as well as reduce all-cause rehospitalization rates and total health care costs.

6. ***Presence of Core Elements.*** A pattern of core elements emerges from among the more effective care coordination and transitional care strategies:
 - appropriately targeting populations likely to respond to improvements through comprehensive patient assessment and risk profiling;
 - actively engaging patients and family caregivers in the design and implementation of the plan of care—a component which was also acknowledged to be critical in achieving the NPP's vision for improvements in patient safety;
 - employing evidence-based, multidimensional interventions that are matched to the population's needs and include: patient education and activation in self-care/management; practitioners with clinical knowledge and experience in addressing individualized patients' and family caregivers' needs; in-person contact; early identification of problems and prompt responses; access and appropriate referral to community services; and, use of appropriate technologies to support patients, family caregivers, and health care practitioners through prompts, reminders, and information integration.

7. ***Reliance on Inter-professional Teams with Clinicians as Coordinators.*** It should be noted that the majority of effective care coordination and transitional care interventions rely on inter-professional teams with nurses typically serving as the “hub” (i.e., assuming responsibility for organizing and delivering the care and strengthening the relationships among patients, caregivers, and practitioners). This finding is consistent with those identified as essential in achieving the NPP's vision for improvements in patient safety.

8. **Legislative Stimuli.** Several recent legislative initiatives are likely to create opportunities to introduce and strengthen care coordination and transitional care practices. Provisions that require the measurement and reporting hospital readmissions and patient experience with care, payment policies or benefit redesign that promotes accountability between and among providers (e.g., payment bundling, community-based care transitions), and programs that enhance the timeliness, flow, and reliability of information between providers (e.g., HITECH objectives) are among the most promising.

Transformational Drivers to Accelerate Care Coordination and Transitional Care

Recognizing that progress on improving care coordination has been slow, how might the transformational drivers identified by the NPP be relied on to foster rapid progress in the near term? A scan of the environment reveals the application of four of these drivers to midcourse and longer term strategies for accelerating care coordination and transitional care. An overview of each driver is provided along with additional detail (appendix C).

Nationally endorsed performance measures for care coordination and transitional care. In the years since its establishment, NQF has endorsed a substantial number of measures as national voluntary consensus standards (NVCS) that address care coordination and transitional care including hospital readmissions. Until recently, these measures were identified and endorsed as part of projects seeking to address gaps in quality that are unrelated to care coordination. In 2008, however, NQF undertook a dedicated project that sought to “endorse a set of preferred practices and performance measures in care coordination that...evaluate access, continuity, communication, and tracking of patients across providers and settings.”¹⁸ These measures reflect a diverse set of structures, processes, and outcomes that address, at least in part, care coordination’s five supporting domains (i.e., health care home, proactive plan of care

and follow-up, communication, information systems, transitions or “hand offs”) and conceptual elements of the organizing framework (i.e., timely flow of information, smooth transfer of accountability). Appendix C lists each measure and its fidelity to these domains and concepts.

Nationally endorsed preferred practices for care coordination and transitional care. In addition to the measures that have been endorsed as NVCS, 25 preferred practices were recently considered by NQF’s Board for endorsement based on these practices’ evidence of effectiveness, generalizability, benefit, and readiness. Practices that have been recommended for endorsement reflect a variety of care settings, diversity of patient populations inclusive of their family caregivers, broad spectrum of health care practitioners, range of clinical and nonclinical services, and address each of the domains and conceptual elements (appendix C).

Public reporting platforms. As interest in and demand for publically reported performance data have grown, so, too, have the number and variety of quality reporting vehicles. The Centers for Medicare & Medicaid Services (CMS) along with other stakeholder organizations (e.g., accreditors, employer coalitions, proprietary entities), have made significant investments in establishing platforms on which performance data can be publicly portrayed. Hospital Compare, Home Health Compare, Nursing Home Compare, and Dialysis Facility Compare currently represent CMS’ portfolio of websites in this arena. Under the Affordable Care Act significant, additional investments will be made in the enhancement and expansion of these existing sites as well as the development of new sites (e.g., Physician Compare).

Federally-sponsored performance-based payment programs. Although there has been a growth in value-based purchasing in the last decade, the number of performance-based payment programs will expand rapidly under the Affordable Care Act and HITECH (appendix B). An assortment of initiatives that blend, in varying degrees,

payment reform with novel delivery models have been enacted and include bundled payments, accountable care organizations, patient-centered medical homes, and independence at home and hospital readmissions reduction programs. Each of these programs proposes an incentive payment to a provider or health care practitioner in exchange for the attainment of specific, measurable objectives. While the evidence-base is equivocal about the effects of such programs,^{19,20,21,22} value-based purchasing has been recognized as a credible vehicle for drawing providers' attention to quality improvement targets.²³

While these four drivers do not represent the full array of levers that exist and might serve as stimulants for transformation, they serve as foundations on which to quickly advance quality improvement in care coordination and transitional care.

Recommendations

To accelerate achievement of NPP's goals and vision for care coordination and take advantage of that which currently exists, four recommendations are proposed. Each recommendation has been specified with objectives along with their supporting rationale and near-term action steps (table 1). Additionally, the objectives have been assessed for their relevance to care coordination's underlying conceptual elements—timely flow of information and the smooth transfer of accountability.

1. Enhance the sufficiency of performance measures that address care coordination and transitional care.

Objective 1.1. Achieve consensus on what constitutes an avoidable, preventable, or unplanned readmission.

Rationale: Under the Affordable Care Act, emphasis has been placed on reducing avoidable hospital readmissions. However, a standard definition of that which is avoidable, preventable, and/or unplanned does not yet exist and the law actually uses each of these terms in different provisions. By achieving consensus on a definition, agreement will be reached by diverse stakeholders on that which constitutes a hospital readmission that is preventable and potentially inform regulations being promulgated under the law.

Objective 1.2. Identify and consider for endorsement additional measures that reflect high value care coordination and transitional care.

Rationale: Despite the availability of more than three dozen NQF-endorsed measures for use, the list of measures that addresses care coordination fails to comprehensively address all of the domains. For example, only one measure addresses the health care home domain, and in other domains for which multiple measures have already been endorsed, diagnosis- or condition-specific denominators often significantly limit the populations to which they apply. Additionally, few measures address family caregivers or community-based support services—factors that are essential in the delivery of high value care. For these reasons, while the inventory of existing performance measures is viewed as a vehicle for achieving the NPP’s vision for care coordination, it also represents a roadmap for future research and measure development. Measures of quality outcomes, patients’ and family caregivers’ perceptions/preferences, and other indicators that are linked to improved health/avoidance of harm or cost/benefit in each of the domains (e.g., patient activation, shared decisionmaking, quality of life, symptom status, and functional status) should be prioritized.

Objective 1.3. Applying NQF’s Composite Measure Evaluation Framework,²⁴ achieve consensus on and endorse composite measures that reflect the adequacy of care coordination and its five domains.

Rationale: Development of composite care coordination measures takes advantage of the existing, endorsed measures. Notably, several measures appear consistent with and representative of meta-level constructs for quality and could serve as a natural starting point for composite development:

- plan of care (dialysis, home management, hypertension, oncology, glaucoma, incontinence, psychiatric);
- follow up (weight, HIV, transient ischemic event, mental illness);
- communication (adequacy of documentation including medication, nursing, patient, physician, and transition elements);
- readmissions (30-day-HF, AMI, and pneumonia, PICU, 30-day all cause);
- patient perceptions of care transitions (HCAHPS and CTM-3); and
- medication reconciliation (reconciliation, reconciliation post-discharge, reconciled medication list received by patient).

2. Promote accountability for care coordination and transitional care among clinical and nonclinical providers and health care practitioners.

Objective 2.1. Publicly report at the provider-and/or practitioner-levels comparative performance results for NQF-endorsed measures that reflect care coordination and transitional care outcomes including hospital readmissions and patients' and family caregivers' perceptions of the care experience.

Rationale: Despite the availability of health care performance information on federally-sponsored public websites, only Hospital and Home Health Compare display results for measures that could be classified as care coordination. Hospital Compare, for example, reports 30-day readmission rates (health failure, acute myocardial infarction, and pneumonia), HCAHPS® (nurse/physician communication, adequacy of discharge information), imaging follow up after screening (mammogram), and various process

measures reflecting care at hospital arrival or discharge (e.g., medications, discharge instructions). Home Health Compare includes performance results for measures including discharge to the community, acute care hospitalization, emergent care, and emergent care for new, infected, or deteriorating wound/lesion.

Under the Affordable Care Act, the existing Compare websites will be expanded, additional Compare websites will be added, and certain provisions will mandate the collection, analysis, public disclosure of specific measures such as hospital readmissions and patient perception of care. Endorsed measures currently exist for both hospital readmission (e.g., 30-day condition-specific) and perception of transition from hospital to home (e.g., CTM-3) making those obvious priorities for inclusion.

3. Redesign payment policies to drive improvements in care coordination and transitional care.

Objective 3.1. Better align eligibility criteria under Medicare and Medicaid and, where possible, the Children's Health Insurance Plan (CHIP).

Rationale: Discontinuities in care result from mismatched and misaligned eligibility criteria and benefits for patients who must navigate between federally- and state-sponsored health programs that have different requirements. Under the Accountable Care Act, a Federal Coordinated Health Care Office will be established which is charged with integrating benefits for dual eligibles under Medicare and Medicaid. Procedural simplification, elimination of regulatory conflicts and cost shifting, and improvements in care continuity through effective care transitions represent specific aims of this integration and a first step in reducing the administrative misalignments presented by these federal insurance programs.

Objective 3.2. Link payment to performance related to care coordination and transitional care.

Rationale: A natural extension of payers' ongoing reliance on value-based purchasing is to extend planned incentives to performance that includes care coordination and transitional care. Emphasis should be placed on incorporating measures of performance that will be required under Accountable Care Act including, but not limited to, hospital readmission rates and patients' and family caregivers' experience with care.

4. Expand system capacity to improve clinical and nonclinical providers' and practitioners' abilities to deliver care that is highly coordinated.

Objective 4.1. Accelerate the testing and application of effective care coordination and transitional care interventions to high-risk, vulnerable populations most likely to benefit from them including, but not limited to, children and children special needs, dual eligibles, persons with mental health or substance abuse disorders, and those receiving developmental disability services.

Rationale: Despite the current evidence-base which has emphasized chronically ill older adult populations, other at-risk and high-risk populations who experience frequent transfers between levels of care and/or practitioners/providers and exhibit vulnerabilities due to complexity, multimorbidity, and disability are likely to benefit from care coordination and transitional care interventions. Efforts should be made to identify these populations, appropriately tailor existing approaches or design novel interventions to meet their needs and the needs of their caregivers, develop the supporting evidence-base, and rapidly translate that which is shown to be effective.

Objective 4.2. Develop specific tools and resources (e.g., standardized patient assessment, screening, and care planning instruments, clinical protocols, decision support tools, patient and family caregiver education materials, standardized job descriptions and performance evaluation templates, and standardized training and instructional materials)

to ease providers' implementation of NQF-endorsed transitional care preferred practices and other evidence-based transitional care approaches.

Rationale: Initially, strategies that will promote the adoption of effective, evidence-based transitional care strategies should be prioritized.

Objective 4.3. Under HITECH, support providers' and health care practitioners' implementation of meaningful use objectives and measures that address care coordination or transitional care and develop consensus on and endorsement of a set of expanded 'meaningful use' objectives and measures that reflect all the domains of care coordination.

Rationale: HITECH contains several objectives and measures on which care coordination relies (e.g., medication reconciliation between care settings) that will drive providers' attention to electronic collection and transmission of these data. Adoption by providers of these objectives/measures under the regulation should be encouraged. Furthermore, in recognition of the limited number of objectives/measures that address care coordination and transitional care and the absence of objectives/measures that reflect all domains, the concept of 'meaningful use' should be expanded under this regulatory framework to address all five domains.

Objective 4.4. Enhance the content and delivery of health professions education and the underlying certification and licensure systems that will reinforce the provision of care that is well coordinated.

Rationale: While effective care coordination strategies can be designed and tested, the educational system must reinforce that which will ensure the continuous delivery and sustainability of these interventions by a well prepared workforce. Investments in curricular materials, instructional content, and clinical practica will need to be made. State and federal programs that strengthen care coordination and transitional care

competencies including scope of practice laws, licensure, and certification requirements will need to be retooled to reflect these interests.

Table 4: Recommendations, Objectives, and Action Steps (by transformational driver and conceptual element addressed)

Recommendations, Objectives, and Action Steps	Conceptual Element Addressed	
	(1) <i>timely flow of information</i>	(2) <i>smooth transfer of accountability</i>
Transformational Driver: Performance Measurement		
1. Enhance the sufficiency of performance measures that address care coordination and transitional care.		
1.1 Achieve consensus on what constitutes avoidable, preventable, or unplanned readmissions.	No	Yes
Proposed Actions: <ul style="list-style-type: none"> • Pending resources, undertake consensus or consensus-like process to achieve objective • Identify and inventory various definitions • Evaluate sufficiency of each candidate definition • Solicit feedback from stakeholders and refine, as needed • Recommend definition for approval 		
1.2 Identify and consider for endorsement additional measures that reflect high value care coordination and transitional care.	No	Yes
Proposed Actions: <ul style="list-style-type: none"> • Pending resources, undertake consensus or consensus-like process to achieve objective • Identify and inventory candidate measures in high priority, gap areas • Evaluate sufficiency of each candidate measure • Solicit feedback from stakeholders and refine, as needed • Recommend candidate measures for approval 		
1.3. Applying NQF's Composite Measure Evaluation Framework, achieve consensus on and endorse composite measures that reflect the adequacy of care coordination and its five domains.	No	Yes
Proposed Actions: <ul style="list-style-type: none"> • Pending resources, undertake consensus or consensus-like process to achieve objective • Identify and inventory candidate measures that are most 'ready' for composite development • Evaluate sufficiency of each composite based on newly endorsed NQF Framework • Solicit feedback from stakeholders and refine, as needed • Recommend candidate measures for approval 		
Transformational Driver: Public Reporting		
2. Promote accountability for care coordination and transitional care among clinical and nonclinical providers and health care practitioners.		
2.1. Publicly report at the provider-and/or practitioner-levels comparative performance results for NQF-endorsed measures that reflect care coordination and transitional care outcomes including hospital readmissions and patients' and family caregivers' perceptions of the care experience.	No	Yes
Proposed Actions: <ul style="list-style-type: none"> • Support the design of electronic health records that produce data elements that enable construction of measures • Advocate at the state and/or federal levels for the voluntary or mandatory public reporting of NQF-endorsed care coordination measures • Rely on rulemaking processes to vet those intended for use by federal partners • Promote the integrate of measures into existing accreditation and recognition programs • Support the adoption of measures into public and private quality reporting standards 		
Transformational Driver: Payment Systems		
3. Redesign payment policies to drive improvements in care coordination and transitional care.		
3.1. Better align eligibility criteria under Medicare and Medicaid and, where possible, the Children's Health Insurance Plan (CHIP).	No	Yes
Proposed Actions: <ul style="list-style-type: none"> • Explore feasibility for and role of Federal Coordinated Health Care Office in achieving objective and/or need for statutory changes • Examine criteria and identify areas of misalignment and potential convergence • Analyze impact of eligibility changes 		

Recommendations, Objectives, and Action Steps	Conceptual Element Addressed	
	(1) <i>timely flow of information</i>	(2) <i>smooth transfer of accountability</i>
3.2. Link payment to performance related to care coordination and transitional care.	No	Yes
Proposed Actions: <ul style="list-style-type: none"> Identify existing demonstrations and/or legislative vehicles for achieving objective (e.g., bundled payments, ACOs, value-based purchasing programs) Examine measurement and reporting requirements for each demonstration/program Determine feasibility of incorporating existing measures into demonstrations/programs Rely on rulemaking processes to vet those intended for use by federal partners 		
Transformational Driver: System Capacity—i.e., Research, Knowledge Dissemination, Professional Development		
4. Expand system capacity to improve clinical and nonclinical providers' and practitioners' abilities to deliver care that is highly coordinated.		
4.1. Accelerate the testing and application of effective care coordination and transitional care interventions to high-risk, vulnerable populations most likely to benefit from them including, but not limited to, children and children special needs, dual eligibles, persons with mental health or substance abuse disorders, and those receiving developmental disability services.	Yes	Yes
Proposed Actions: <ul style="list-style-type: none"> Identify populations most likely to benefit from interventions (e.g., children and children special needs, dual eligibles, persons with mental health or substance abuse disorders, and those receiving developmental disability services) Tailor existing approaches or design novel interventions to meet needs of these population(s) Test effectiveness of interventions on achieving higher value Develop tools of translation/dissemination 		
4.2. Develop specific tools and resources to ease providers' implementation of NQF-endorsed transitional care preferred practices and other evidence-based transitional care approaches.	Yes	Yes
Proposed Action Steps: <ul style="list-style-type: none"> Compare effectiveness of existing, evidence-based practices to select among those available Identify the availability of existing tools/resources to support adoption of selected practices Identify 'readiness' of tools for widespread distribution and/or need for customization Explore partnership model to maximize distribution and use 		
4.3. Under HITECH, support providers and health care practitioners' implementation of meaningful use objectives and measures that address care coordination and transitional care and developing consensus on and endorsement of a set of expanded 'meaningful use' objectives and measures that reflect all the domains of care coordination.	Yes	Yes
Proposed Actions: <ul style="list-style-type: none"> Examine sufficiency of meaningful use objectives/measures in addressing care coordination and transitional care Encourage implementation of EHR and specifically for adoption of meaningful use objectives/measures that address care coordination and transitional care Identify/develop additional objectives/measures to address care coordination and its domains Rely on rulemaking process to vet those required by federal partners 		
4.4 Enhance the content and delivery of health professions education and the underlying certification and licensure systems that will reinforce the provision of care that is well coordinated.	Yes	Yes
Proposed Actions: <ul style="list-style-type: none"> Identify core competencies of care coordination and transitional care among various health care practitioners and patients and family caregivers Ensure various academic programs' curriculum essentials reflect core competencies Retool classroom and clinical experiences to reflect competencies Develop instructional materials that prepare patients, families, and health care practitioners to assume expanded roles in care coordination and transitional care Evaluate and revise existing standards (accreditation, certification, scope of practice) to determine the degree that they reinforce care coordination and transitional care practices Work with consumer groups and employers to prepare patients and their family caregivers to assume participation in care coordination and transitional care 		

Conclusion

Far too often patients experience the U.S. health care system as fragmented and unable to respond to their basic health care needs. As is describes by the NPP,

As...patients attempt to navigate our complex healthcare system and transition from one care setting to another, they are often unprepared or unable to manage their care. Incomplete or inaccurate transfer of information, poor communication, and a lack of appropriate follow-up care lead to confusion and poor outcomes, including medication errors and preventable hospital readmissions and emergency department visits.^{25(p. 32)}

This report chronicles accomplishments to date in improving care coordination and transitional care, describes emerging opportunities derived from recent federal policy making, and outlines a roadmap for near-term priorities to advance the NPP's vision. While it is not intended to be a comprehensive strategic plan, these steps, if implemented, would accelerate the delivery of high value care coordination and transitional care.

Appendix A: Detailed Description of the Evidence Review

A structured search of the evidence was conducted to examine that which is known about care coordination and its impact on health care outcomes. The review was conducted in a strategic manner—meaning that a priority was placed on identifying critical source documents to address the paper’s aim rather than examining an exhaustive collection of the published literature.

To this end, key organizations and their web sites were identified by one of the investigators on the team (ETK) as likely sources of evidence on care coordination. The organizations identified in this manner included:

- Agency for Healthcare Research and Quality (AHRQ)
- Centers for Medicare & Medicaid Services (CMS)
- Centers for Disease Control and Prevention (CDC)
- Medicare Payment Advisory Commission (MedPAC);
- Congressional Budget Office (CBO);
- Government Accountability Office (GAO);
- Institute of Medicine (IOM);
- National Quality Forum (NQF); and
- Funding organizations including the Commonwealth Fund, Robert Wood Johnson Foundation (RWJF), California HealthCare Foundation, and Hartford Foundation.

Once identified, parallel searches of each organization’s web site were conducted to identify publications addressing care coordination, based on the definition adopted.

In addition to the web-based search, a limited search of the published evidence was conducted relying on PubMed®/Medline® as the primary electronic bibliographic database. The search focused on meta-analyses/syntheses, written in English, and published in the last 10 years (July

2000-July 2010) and excluded studies and reviews that were disease-specific. Search terms included combinations of the following: care coordination, care management, chronic care, and disease management. Two additional studies that were identified separately by the authors were also included because of their relevance to the topic (i.e., Peikes, 2009; Sochalski, 2009).

More than three dozen published documents were identified and retained through these collective efforts. To assure that no crucial document had been missed, the list of identified web sites and source documents was double checked for relevance and comprehensiveness by the team's principal investigator (MDN) and the paper's sponsor (i.e., NQF). Once agreement was achieved on the universe of documents, a standard format was created to consistently summarize each publication with emphasis on the nature and causes of the problem being addressed, populations at greatest risk for suboptimal outcomes, and impact on health care outcomes including cost. This summary is presented in the following table.

Source	Summary	At-Risk Populations	Nature/Cause of the Problem
1. Adams K, Corrigan JM, Eds. Priority Areas for National Action: Transforming Health Care Quality. Washington, DC: National Academies of Science, 2003. NOTE: See AHRQ, 2003	The report summarizes the IOM's efforts to establish criteria for screening priority areas and recommend a list of approximately 15 to 20 candidate priorities for quality improvement.	The entire spectrum of health care – not limited to a population, diagnostic category, or condition.	Ongoing lapses in health care quality and rising costs resulted in the Quality Chasm series of reports issued by the IOM which documented the causes and solutions and recommended, as a crucial first step, the systematic identification of priority areas for quality improvement.
Findings/Recommendations: Of two cross cutting (e.g., benefit a broad array of patients) priorities identified by the IOM, care coordination was recommended a national priority area for quality improvement.			
2. Agency for Health Care Research and Quality. Priority Areas for National Action: Transforming Health Care Quality. Summary of Institute of Medicine report. January 2003. Agency for Healthcare Research and Quality, Rockville, MD. Last accessed June 19, 2010 at http://www.ahrq.gov/qual/iompriorities.htm	The report summarizes the work of the Institute of Medicine (IOM) under the Department of Health and Human Services to establish criteria for screening priority areas and recommend a list of approximately 15 to 20 candidate priorities for quality improvement.	The entire spectrum of health care – not limited to a population, diagnostic category, or condition.	Ongoing lapses in health care quality and rising costs resulted in the Quality Chasm series of reports issued by the IOM which documented the causes and solutions and recommended, as a crucial first step, the systematic identification of priority areas for quality improvement.
Findings/Recommendations: Of two cross cutting (e.g., benefit a broad array of patients) priorities identified by the IOM, care coordination was recommended a national priority area for quality improvement.			
3. American Academy of Pediatrics (AAP). Committee on Children With Disabilities. Care Coordination: Integrating Health and Related Systems of Care for Children With Special Health Care Needs. Pediatrics. 1999;104(4):978-981.	This brief AAP committee report describes pediatrician's role in strengthening care coordination for children with special health care needs with an emphasis on the medical home.	Children with special health care needs	Failures in care coordination among children and the role of primary care pediatricians in the process of care coordination.
Findings/Recommendations: Report make seven recommendations: development by pediatricians and tertiary care centers of health care models that include care coordination families and children as leaders of the care coordination team which requires access to information, proper education, etc. pediatricians' role in facilitating access to community-based services via medical home flexibility in the provision of care coordination to meet needs of the child and family address barriers to care coordination which include adequate reimbursement research should prioritize the development/testing of new approach coordinating care and the outcomes and benefits of care coordination			

Source	Summary	At-Risk Populations	Nature/Cause of the Problem
expand interdisciplinary training opportunities in the medical home philosophy and care coordination			
<p>4. Antonelli RC, McAllister JW, Popp J. Making Care Coordination a Critical Component of the Pediatric Health System: a Multidisciplinary Framework. New York, NY: The Commonwealth Fund, 2009.</p>	<p>The report proposes a framework for care coordination in a high-performing pediatric health care system and summarizes findings from the literature review, 27 key informant interviews, and a 19-member expert panel that informed it.</p> <p>The framework includes a definition of care coordination; its principal characteristics, competencies, and functions; a process for its delivery; a model to implement care coordination across all health care settings and related disciplines.</p>	<p>Care provided to children and youth population (undefined)</p>	<p>The Commonwealth Fund has identified care coordination as one of seven elements needed to organize care around patients. It is recognized that care coordination for children and youth is markedly different from the scope of such services for typical adult populations.</p>
<p>Findings/Recommendations: Defines pediatric care coordination as “a patient- and family-centered, assessment-driven, team-based activity designed to meet the needs of children and youth while enhancing the caregiving capabilities of families. Care coordination addresses interrelated medical, social, developmental, behavioral, educational, and financial needs to achieve optimal health and wellness outcomes.”</p> <p>Identifies the following key characteristics: patient-/family-centered; proactive, planned, and comprehensive; promotes self-care skills and independence; emphasizes cross-organizational relationships</p> <p>Identifies care coordination competencies: develops partnerships; communicates proficiently; uses assessments for intervention; is facile in care planning skills; integrates all resource knowledge, possesses goal/outcome orientation; takes an adaptable and flexible approach; desires continuous learning; applies team-building skills; is adept with information technology</p> <p>Details its functions: provides separate visits and care coordination interactions; manages continuous communications; completes/analyzes assessments; develops care plans with families; manages/tracks tests, referrals, and outcomes; coaches patients/families; integrates critical care information; supports/facilitates care transitions; facilitates team meetings; uses health information technology</p>			

Source	Summary	At-Risk Populations	Nature/Cause of the Problem
<p>Specific recommendations are made to ensure that care coordination becomes a regular feature of the health care system: identifying promising models, tools, and best practices for care coordination based in medical homes; identifying promising community-based models to support care coordination; developing consensus standards for care coordination services; developing measures of care coordination quality; evaluating the effectiveness of various care coordination models and systems; assessing the value of care coordination for different patient populations; integrating care coordination capacity into electronic medical records and health information systems; creating a rigorous, cross-disciplinary, and family-centered curriculum for the education and preparation of care coordinators; creating training materials for referral from medical homes to community partners and care coordination collaborators; identifying policy frameworks to support the provision of care coordination services by all public and private payers; and transferring care coordination practices and policies for pediatric care to the care of other patient populations</p>			
<p>5. Brown R. The Promise of Care Coordination: Models that Decrease Hospitalizations and Improve Outcomes for Medicare Beneficiaries with Chronic Illnesses. Princeton, NJ: Mathematica Policy Research, Inc., March 2009.</p>	<p>Commissioned by the National Coalition on Care Coordination (N3C) which was established in 2008 by leading social, health care, family caregiver, and professional organizations. The paper synthesizes the evidence on cost-effective care coordination interventions and their essential components. Evidence-based recommendations for care coordination policies in health care reform are presented.</p> <p>NOTE: The report draws heavily on findings from the Medicare Coordinated Care Demonstration (See Peikes, 2009).</p>	<p>Medicare fee-for-service beneficiaries with chronic illness enrolling in one of 15 demonstration programs.</p>	<p>Prevalence, cost, and impact on quality of life of chronic ill among Medicare beneficiaries.</p>
<p>Findings/Recommendations: Three types of interventions have been demonstrated to be effective in reducing hospitalizations for Medicare beneficiaries with multiple chronic conditions: transitional care, self-management education, and coordinated care interventions. In-depth analysis of the 3 (of 15) programs in the MCCD that were effective in reducing hospitalizations and costs over the first four years of operations, found six key components: targeting, in-person</p>			

Source	Summary	At-Risk Populations	Nature/Cause of the Problem
<p>contact, access to timely information on hospital and emergency room admissions, close interaction between care coordinators and primary care physicians, provision of services that include assessing, care planning, educating, monitoring, and coaching patients on self-management, heavy reliance on rely on registered nurses to deliver the bulk of their intervention.</p> <p>Ongoing issues include: methods to identify the target population, nature of enrollment, best approach to implementing transitional care, efficiency in the delivery of care coordination, and mix of most effective interventions/services.</p> <p>Specific recommendations proposed: be prescriptive about the services and delivery of the Patient-Centered Medical Home make care coordination interventions available to physicians in small practices target beneficiaries who are at substantial risk of hospitalization in the coming year create incentives for hospitals to participate in a transitional care intervention</p>			
<p>6. Brown R, Peikes D, Chen A, Ng J, Schore J, Soli C. The Evaluation of the Medicare Coordinated Care Demonstration: Findings for the First Two Years. Princeton, NJ: Mathematica Policy Research, Inc. March 21, 2007</p>	<p>Two year findings from the Medicare Coordinated Care Demonstration (MCCD) under which 15 demonstration programs of case management and disease management programs (which varied in their organizational structures, target populations, and interventions) were tested through a random assignment study for their impact on cost, outcome, and well-being in the Medicare fee-for-service population.</p>	<p>Medicare fee-for-service beneficiaries with chronic illness enrolling in one of 15 demonstration programs.</p>	<p>Prevalence, cost, and impact on quality of life of chronic ill among Medicare beneficiaries.</p>
<p>Findings/Recommendations: While the programs varied in their approach to care coordination, mode and intensity of contacts, staff credentials, ratio of staff to patients, method of monitoring, patient education methods, and approaches to improving communications, four major strategies for improving outcomes emerged: improving patients. adherence to treatment and self-care regimens improving coordination and communication among providers improving physician practice increasing access to support services</p> <p>Findings indicate few statistically significant effects (treatment versus control):</p>			

Source	Summary	At-Risk Populations	Nature/Cause of the Problem
<p>few effects on overall satisfaction with care among beneficiaries increase in the percentage of beneficiaries reporting they received health education no clear effects on patients. adherence or self-care favorable effects for only two programs each on the quality of preventive care, the number of preventable hospitalizations, and patients. well-being a small but statistically significant reduction (about 2 percentage points) across all programs combined in the proportion of patients hospitalized during the year after enrollment reduced number of hospitalizations for only 1 of the 15 programs no reduction in expenditures for Medicare Part A and B services</p> <p>Among the single program that achieved significant reductions in hospitalizations, these positive effects are attributable to in-person contacts, early identification and response to problems, and problem identification and care planning, patient education, and improvements in communication/coordination between patients and physicians.</p> <p>Program design and structural features had a stronger association with outcomes than the nature of the interventions tested. Findings suggest that hiring excellent staff and performing certain key functions well are the most important determinants of improving outcomes or reducing costs.</p>			
<p>7. California HealthCare Foundation. Living with Chronic Illness: Californians' Perspectives on Cost and Coordination of Care. Oakland, CA: CHCF, 2008.</p>	<p>Findings from a non-randomized 20-minute online survey using the Harris Interactive public panel (HPOL) between November 2 and November 19, 2007 of 2,745 adult respondents with chronic conditions.</p>	<p>2,745 adults with chronic conditions in California</p>	<p>Prevalance of chronic illness in California (i.e., 40% live with at least one medical condition).</p>
<p>Findings/Recommendations: Data are provided on health status; provider services and ease of access; satisfaction with services, physician collaboration, and health benefits; types of insurance coverage; costs; prescription drug use and costs; relationship between cost and neglect of care.</p>			
<p>8. California HealthCare Foundation. Navigating Care Transitions in California: Two Models for Change. Oakland, CA: CHCF, September 2008.</p>	<p>Summarizes two small scale care transitions projects (Care Transitions and Transitional Care Model) in California, supported by CHCF.</p>	<p>Care Transitions: Patients representing diversity of California's communities by race, ethnicity, geographic distribution, economic profile, etc.</p> <p>Transitional Care Model: High-risk, high-volume, high cost patients</p>	<p>Adverse outcome and preventable readmissions that accompanies transitions among chronically ill patients.</p>
<p>Findings/Recommendations: The report describes the approach to transitional care under both models and defines their characteristics and strengths/weaknesses. Furthermore, the paper describes regulatory, payment, and cultural barriers that are needed to accelerate the adoption and widespread use of these models including risk sharing, incentives for the prevention of readmissions, payment bundling, and public reporting of readmission</p>			

Source	Summary	At-Risk Populations	Nature/Cause of the Problem
rates.			
<p>9. Chen A, Brown R, Archibald N, Aliotta S, Fox PD. Best Practices in Coordinated Care. Princeton, NJ: Mathematica Policy Research, Inc. March 22, 2000.</p>	<p>As a first step in designing the Medicare Coordinated Care Demonstration (MCCD), an inventory of the best practices in coordinated care was compiled.</p>	<p>Medicare fee-for-service beneficiaries with chronic illness who are “at risk” for adverse outcomes and expensive care.</p> <p>The authors identified 67 programs through published (though literature searches) and unpublished (through experts, web page, and broadcast email notices) means with evidence of reductions in hospital admissions or in total medical costs and interviewed representatives from 29 selected programs.</p>	<p>Prevalence, cost, and impact on quality of life of chronic ill among Medicare beneficiaries. Antecedent to the Medicare Coordinated Care Demonstration (MCCD).</p>
<p>Findings/Recommendations: Best practice programs typically addressed the needs of two populations of chronically ill patients: Case management—serve a smaller group of complex, medically or socially vulnerable “high-risk” patients; emphasize assessment of each patient’s distinct set of problems and goals to develop highly individualized plans of care Disease management programs—serve a larger group of patients whose main problem is a single chronic disease; programs can take a more standard approach with each patient</p> <p>The actual intervention delivered in each program varied—there were many ways of effectively coordinating care. However, five common features existed in all of the best practice programs: Three steps for all enrollees: <i>Assess and Plan</i>—including a written plan of care <i>Implement and Deliver</i>—including the establishment of a care coordinator-patient relationship and patient education <i>Reassess and Adjust</i>—including periodic reassessment of patients’ progress Oriented to prevent health problems and crises, and early problem detection and intervention Among the disease-specific programs, use of national evidence-based or consensus-based guidelines Use of nurses with at least a bachelor’s degree in nursing as care coordinators Experienced in care coordination and evidence of having reduced hospital use or total medical costs</p>			
<p>10. Ginsburg S. Colocating Health Services: A Way to Improve Coordination of Children’s Health Care? New York, NY: The Commonwealth Fund, July 9, 2008.</p>	<p>This report examines what is known about colocation of pediatric practices with providers of other services</p>	<p>Pediatric practices (undefined)</p>	<p>Acknowledgement that as pediatric practices strengthen their roles as medical homes, there is a need to either to provide expanded services or enhance their capacity to</p>

Source	Summary	At-Risk Populations	Nature/Cause of the Problem
	and its benefits and the literature and interviews used as information resources.		coordinate that care
<p>Findings/Recommendations: The authors found a lack of definitions, common characteristics, and benefits of collocation. Therefore, collocation of services was viewed not as a single strategy but rather as a complex set of relationships, organizational structures, and other features meant to help practices deliver effective care.</p>			
<p>11. Johnson K, Rosenthal J. Improving Care Coordination, Case Management, and Linkages to Service for Young Children: Opportunities for States. Portland, ME: National Academy for State Health Policy, April 22, 2009.</p>	<p>The report describes the challenging nature of transitions between primary care pediatric providers and specialists providing medical and mental health services, provides an overview of the causes/barriers, offers a framework for contemplating solutions and proposes a range of solutions.</p>	<p>Children and their families in need of follow-up medical and developmental services in their communities</p>	<p>Weak linkages and poor handoffs between pediatric providers and providers of mental health, early intervention, child welfare, and early care and education services for children and their families.</p>
<p>Findings/Recommendations: Based on the causes and barriers to more effective handoffs, these authors recommend strategies in three areas—(1) primary care practice-based strategies, (2) service provider linkage strategies, and (3) systems change and cross-system strategies. Illustrative examples of each follow: Primary care practice-based strategies—use of medical homes, onsite care coordinators, technological advancements such as electronic health records, individualized care planning Service provider linkage strategies—collocation of services with primary pediatric care, incentives for quality of care coordination including completion of referrals, telemedicine Systems change and cross-system strategies—statewide coordination networks, cross system/interprofessional training</p>			
<p>12. Krause DS. Economic effectiveness of disease management programs: a meta-analysis. Dis Manag. 2005 Apr;8(2):114-34.</p>	<p>Meta analysis of 67 publicly available empirical studies (32,041 subjects) related to the economic effectiveness of chronic disease management. 66% of the studies retained were controlled group research designs; the remainders were pre-/post- designs.</p>	<p>Chronically ill patients with asthma, diabetes, heart disease receiving disease management</p>	<p>Growth in chronically ill, promise of disease management, expansion of disease management in response to the Medicare Modernization Act and the Medicare Health Support pilot, and questions regarding the economic benefits of these programs</p>
<p>Findings/Recommendations: Three types of programs were evaluated in the included studies: self-management, nurse-management, and team-</p>			

Source	Summary	At-Risk Populations	Nature/Cause of the Problem
<p>management. The author found an equally weighted average unbiased effect size of 0.311 (95% CI = 0.272-0.350). After accounting for disease severity, there were no statistically significant differences among the studies by research design (controlled versus pre-/post-), disease type (asthma, diabetes, or heart disease), or intervention type (self-management, nurse-management, team-management). While team-managed disease management programs were the most effective intervention, the greatest overall level of effectiveness was achieved by disease management programs providing interventions to those subjects with the highest degree of disease severity. Overall, the author concludes that among the studies included, there is statistically significant evidence supporting the existence of a positive relationship (small to moderate) between chronic disease management and economic effectiveness.</p>			
<p>13. Luck J, Parkerton P, Hagigi F. What is the business case for improving care for patients with complex conditions? J Gen Intern Med. 2007 Dec;22 Suppl 3:396-402.</p>	<p>Review of publicly available, published sources (e.g., peer reviewed and 'gray literature') with data about costs and benefits of strategies to improve care for patients with complex conditions (e.g., patient self-management, care coordination, evidence-based guidelines). Because the universe of sources was sizable, the authors focused on only reviews of large numbers of studies; rigorous case study analyses; and reports on specific Medicare or Medicaid programs or VA studies.</p> <p>NOTE: The number of studies included in this review was not specified by the authors nor was a table of evidence provided.)</p>	<p>patients with complex conditions</p>	<p>Identification of strategies that are cost savings and efficient</p>
<p>Findings/Recommendations: The authors found the number of studies meeting the inclusion criteria limited and among those included there were methodological concerns. Among those reviewed, the authors conclude that there is mixed evidence that interventions to improve care for patients with complex conditions reduce costs.</p> <p>NOTE: Several of the titles included in this review are independently reviewed in this summary of evidence (i.e., Brown [2007], Krause, Weingarten, Ouwens).</p>			

Source	Summary	At-Risk Populations	Nature/Cause of the Problem
<p>14. McCall N, Cromwell J, Urato C, Rabiner C. Evaluation of Phase I of the Medicare Health Support Pilot Program Under Traditional Fee-for-Service Medicare: 18-Month Interim Analysis: Report to Congress. Washington, DC: RTI International, October 2008.</p>	<p>18-month findings from the 8 pilot Medicare Health Support Organizations (MHSO) implemented under Phase I of the “Voluntary Chronic Care Improvement Program (CCIP) Under Traditional Fee-for-Service (FFS) Medicare” pilot.</p>	<p>Approximately 240,000 chronically ill Medicare beneficiaries randomized to an intervention or a comparison group in eight geographic areas in the original populations and approximately 47,000 beneficiaries in the refresh populations.</p>	<p>The Medicare Prescription Drug, Improvement, and Modernization Act required the development, testing, evaluation, and implementation of chronic care improvement programs. Under the pilot, a pay -for-performance contracting model was employed to incentivize MHSOs toward clinical quality, beneficiary and provider satisfaction, and Medicare program savings for chronically ill Medicare fee-for-service (FFS) beneficiaries with targeted conditions of heart failure (HF) and/or diabetes.</p>
<p>Findings/Recommendations: CMS announced in January 2008 that Phase I would cease at the end of the three year pilot period as a result of failure by the 8 pilots to meet the three statutory requirements (i.e., to improve clinical quality of care and beneficiary satisfaction and achieve budget neutrality with respect to their fees).</p> <p>At the time of the evaluation, five key findings were discovered: The pilot programs’ participants were healthier, less costly, and lower utilizers of acute care services than other Medicare FFS beneficiaries. Alternative recruiting and outreach strategies are needed to reach the sicker and more costly beneficiaries as well as dual Medicare/Medicaid enrollees and beneficiaries with disabilities. The level of intervention of the participating beneficiaries—2 to 5 months of telephonic support during months 7 -18 of the pilot —did not (and is unlikely to) produce significant behavioral change and savings. There was limited effect in improving satisfaction, care experience, self-management, and physical and mental health functioning. Some gains in process of care were realized (i.e., seven of the MHSOs had a positive intervention effect on one or more process) but not on the reduction in acute care utilization or mortality. None of the 8 MHSOs achieved gross savings rates that were statistically different from zero for their original and refresh populations. Overall, fees accrued to date in the pilot far exceed savings produced.</p>			
<p>15. McDonald KM, Sundaram V, Bravata DM, Lewis R, Lin N, Kraft S, McKinnon M, Paguntalan H, Owens DK. Care Coordination. Vol 7 of: Shojania KG, McDonald KM, Wachter RM, Owens DK, editors. Closing the Quality Gap: A Critical Analysis of Quality Improvement Strategies. Technical Review 9 (Prepared by the Stanford University-UCSF Evidence-based Practice Center under contract 290-02-0017). AHRQ Publication No. 04(07)-0051-7. Rockville, MD: Agency for Healthcare</p>	<p>Assembly of illustrative background information about ongoing efforts in care coordination, definitions of care coordination and conceptual frameworks and a establish standards for a systematic review of evidence and findings systematic reviews on care coordination.</p>	<p>The report included all systematic reviews of care coordination interventions, irrespective of clinical condition, patient population, or specific outcomes. Systematic reviews of only inpatient interventions were excluded because findings would not be relevant to care across the continuum. Interventions where the only</p>	<p>Lack of a clear definition and conceptual model of care coordination Absence of evidence regarding the influence of care coordination programs on health, cost, and satisfaction outcomes; effective approaches to care coordination; measures and approaches to examine the effectiveness and quality of care coordination</p>

Source	Summary	At-Risk Populations	Nature/Cause of the Problem
Research and Quality. June 2007.		two participants were a clinician and the patient were excluded because these situations presumably have lower demands for coordination activities.	
<p>Findings/Recommendations: Identified high priorities for research: consensus definitions, conceptual models, and measures of care coordination processes efficacy and cost-effectiveness of various care coordination programs practical implementation strategies for effective and efficient care coordination</p> <p>Established working definition: “Care coordination is the deliberate organization of patient care activities between two or more participants (including the patient) involved in a patient’s care to facilitate the appropriate delivery of health care services. Organizing care involves the marshalling of personnel and other resources needed to carry out all required patient care activities, and is often managed by the exchange of information among participants responsible for different aspects of care.”</p> <p>Forty-three individual reviews that focused entirely on care coordination referred to 20 different care coordination interventions. From these, the most common strategy was use of interprofessional teams (20 reviews) followed by disease management (10 reviews) and case/care management (9 reviews). Care integration and interprofessional education were also identified.</p> <p>Measures frequently used to evaluate the effectiveness of care coordination include mortality, symptoms, unemployment, staying connected to services, and adherence to medication, cost and utilization outcomes (e.g., hospitalizations, ED visits, and clinic visits), and patient/family satisfaction.</p>			
16. MedPAC. Aligning Incentives in Medicare, Chapter 5, Coordinating the care of dual-eligible beneficiaries, Washington, DC: MedPAC, June 2010.	The report continues to report on MedPAC’s focus on moving towards payment policies that promote better value and begins to develop policies that highlight the role of Medicare beneficiaries and CMS in achieving the goal of delivery system reform. As it relates to care coordination, a chapter is devoted to the integration of care and financing for dual eligibles.	Dual eligibles – those enrolled in both Medicare and Medicaid	Cost to treat, varied care needs of the dual eligibles, and lack of responsibility in either Medicare or Medicaid to assume responsibility for coordinating their care.
<p>Findings/Recommendations: The report emphasizes the need for the financing streams and care delivery system to be more integrated. The report</p>			

Source	Summary	At-Risk Populations	Nature/Cause of the Problem
acknowledges that such integrated approaches are few in number and enrollment typically low. Furthermore, the Commission highlights the challenges that prevent expansion of such programs—lack of experience managing long-term care, stakeholder resistance (e.g., beneficiaries), the costly initial program investments and uncertain financial viability, and the separate Medicare and Medicaid administrative rules and procedures. The report highlights two integrated models: Medicare Advantage special needs plans (SNPs) that contract with the state Medicaid agencies to provide all services and PACE.			
17. MedPAC. Aligning Incentives in Medicare, Chapter 8, Improving Medicare chronic care demonstration programs: Section 150 of the Medicare Improvements for Patients and Providers Act of 2008 report, Washington, DC: MedPAC, June 2009.	The Commission has focused its work on fundamental payment and delivery system reforms to improve quality, coordinate care, and reduce cost growth. This report focuses on how incentives in the Medicare payment systems could be changed to reward value not volume.	Medicare beneficiaries	Recognized need for transformative health care reform and possible directions for increasing value.
Findings/Recommendations: While a variety of strategies are highlighted to reform the health care system, a significant portion of the report is devoted to accountable care organizations and how they could promote care coordination and delivery system organization and thereby higher quality and lower cost growth.			
18. MedPAC. Reforming the Delivery System, Washington, DC: MedPAC, June 2008.	Report focuses on priorities for health care reform and emphasizes, among other strategies, the promotion of accountability and care coordination.	Medicare beneficiaries	Recognized need for transformative health care reform and possible directions for increasing value.
Findings/Recommendations: The report highlights three strategies: medical home; bundling hospital and physician payments for a hospital admission; and accountable care organizations (ACOs). In doing so, the Commission raises challenges that need to be resolved: How incentives can be coordinated among and across providers, accommodations for small provider groups, beneficiary responsibilities. Among the Commission's recommendations are a medical home pilot in Medicare, public reporting of readmission rates and resource use around hospitalization episodes to hospitals and physicians, payment reductions for relatively high readmissions rates for select conditions and also allow shared accountability between physicians and hospitals. pilot program to test bundled payments for services around hospitalization for select conditions.			
19. MedPAC. Increasing the Value of Medicare, Chapter 2, Care coordination in fee-for-service Medicare, Washington, DC: MedPAC, June 2006.	Chapter 2 in this MedPAC report focuses on strengthening care coordination for complex Medicare beneficiaries and reports on interviews with 35 stakeholders about various approaches. Because of their relevance	Patients who most need the services based on disproportionate spending and lapses in care quality—those with multiple chronic conditions and other complex needs	MedPAC's acknowledgement of existing challenges in delivering care to the medically complex, recognition of disincentives in existing FFS payment mechanisms to strengthen care coordination, and interest in care coordination by creating incentives for providers to share clinical information with other providers, monitor patient status between visits, and fully communicate with

Source	Summary	At-Risk Populations	Nature/Cause of the Problem
	to interviewees, the Commission emphasizes integrating the use of nurse care managers and information technology.		patients about how to take care of their disease.
<p>Findings/Recommendations: The chapter highlights interviewees' view that two functions are considered essential (beyond physicians' clinical management) in care coordination: 1) a care manager (usually a nurse) to assist the patient in self-management and monitor patient progress, and 2) an information system to identify eligible patients, store and retrieve patient information, and share information with those who need it. Additionally, engaged beneficiaries (obtaining their agreement to participate in program and adherence to their care plan, and monitoring their condition) was viewed as critical. The Commission emphasized care coordination's impact on improved quality but warned of its unclear effect on cost savings.</p>			
<p>20. MedPAC. New Approaches in Medicare, Chapter 2, The Medicare Modernization Act and chronic care improvement, Washington, DC: MedPAC, June 2004.</p>	<p>A summary of the provisions of Medicare's Chronic Care Improvement Program (CCIP) and a discussion of implementation issues.</p>	<p>Medicare beneficiaries with diabetes, congestive heart failure, and chronic obstructive pulmonary disease and with a 'high-risk' score.</p>	<p>Recognizing the need for better care coordination in FFS Medicare, the Congress established the Chronic Care Improvement Program (CCIP) in the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 (MMA). The Congress established the Chronic Care Improvement Program to address these issues in the traditional Medicare fee-for-service program. The Program seeks to improve coordination of care across health care settings and among service providers, educate patients about how to care for themselves, and promote the use of evidence-based treatment guidelines. The program will test different models of care coordination and whether it reduces program spending.</p>
<p>Findings/Recommendations: Improving coordination of care for Medicare beneficiaries is central to MedPAC's quality agenda and has the potential to reduce program spending, especially since contractors will be at risk for meeting performance goals. For these reasons, MedPAC supported CCIP. However, at the time, MedPAC raised concerns about implementation. The engagement of physician groups and disease management organizations, influences of cognitive impairment and end of life, contractor incentives and accountabilities, and use of core quality measures to evaluate the program were among the challenges cited. While the Commission made no formal recommendations about care coordination for the chronically in this report, they did urge CMS to encourage a partnership approach for the CCIP.</p>			
<p>21. Mollica RL, Gillespie J. Care Coordination for People with Chronic Conditions. Portland, ME: National Academy for State Health Policy, January 2003.</p>	<p>The paper describes the components of care coordination and uses a number of state initiatives as examples of those that bridge supportive and</p>	<p>Chronically ill</p>	<p>State interest in better coordinating and integrating support and health services for the chronically ill and the providers that serve them; the need to achieve Medicaid savings.</p>

Source	Summary	At-Risk Populations	Nature/Cause of the Problem
	health services.		
<p>Findings/Recommendations: The authors found three general types of care coordination models—social models that coordinate long term care (residential, institutional, in-home) services (e.g., elderly housing), medical models that coordinate medical services (e.g., disease management), and integrated models that bridge the medical and long term care systems (e.g., Programs of All-inclusive Care for the Elderly).</p> <p>While no specific recommendations are made, these authors suggest that consensus could be achieved if key stakeholders were asked to review specific programs/initiatives and discuss/prioritize solutions.</p>			
<p>22. National Governors Association. Dual Eligibles: Making the Case for Federalization. Washington, DC: National Governors Association, February 2005.</p>	<p>This report summarizes the expansion of benefits, including pharmacy benefits, under the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 and argues for federalization to improve coverage of dual eligibles.</p>	<p>Dual eligibles</p>	<p>Passage of the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 and the establishment of a Medicare pharmacy benefit motivated interest in advocating for a single program responsible.</p>
<p>Findings/Recommendations: These authors argue for single program responsibility which will result in care that is more highly coordinated.</p>			
<p>23. National Priorities Partnership (NPP). Aligning Our Efforts to Transform America's Healthcare. Washington, DC: NPP, November 2008.</p>	<p>Consensus report on national health care priorities and goals that address four major challenges—eliminating harm, eradicating disparities, reducing disease burden, and removing waste—and that help focus the nation on high-leverage areas for performance improvement.</p>	<p>The entire spectrum of health care.</p>	<p>Failures by the U.S. health care system to provide access to safe, effective, and affordable care.</p>
<p>Findings/Recommendations: Care coordination is among the six priority areas identified. The report also identified the six most likely mechanisms for driving needed change in the healthcare system (i.e., performance measurement; public reporting; payment systems; research and knowledge dissemination; professional development, education, and certification; and system capacity).</p> <p>Priority: “Ensure patients receive well-coordinated care within and across all healthcare organizations, settings, and levels of care.”</p> <p>Vision: We envision a healthcare system that guides patients and families through their healthcare experience, while respecting patient choice, offering physical and psychological supports, and encouraging strong relationships between patients and the healthcare professionals accountable for their care.</p> <p>NPP goals are to ensure:</p> <p>Healthcare organizations and their staff continually strive to improve care by soliciting and carefully considering feedback from all patients—and their families</p>			

Source	Summary	At-Risk Populations	Nature/Cause of the Problem
<p>where applicable—regarding the care coordination during care transitions. Medication information will be clearly communicated to patients, families, and the next healthcare professional and/or organization of care; medications will be reconfirmed each time a patient experiences a transition in care. All healthcare organizations and their staff will work collaboratively with patients and their families to decrease 30-day readmission rates All healthcare organizations and their staff work collaboratively with patients and families to reduce preventable emergency department visits</p>			
<p>24. National Quality Forum (NQF). Endorsing Preferred Practices and Performance Measures for Care Coordination: A Consensus Report (voting version). Washington, DC: NQF, December 17, 2009.</p>	<p>This report (voting version) candidate preferred practices and performance measures of care coordination following NQF's endorsement of a definition and framework for measuring care coordination (2006) and NPP's identification of care coordination as a national priority (2008).</p>	<p>The entire spectrum of health care.</p>	<p>Increased need for systematic approach and measurement evaluation structure to care coordination resulting from demographic, economic, and social trends.</p>
<p>Findings/Recommendations: This voting version of the report reports on its project and recommends 25 preferred practices and 10 performance measures for measuring and reporting care coordination. As is consistent with the previously endorsed framework, practices and measures have been recommended for endorsement in 5 domains: healthcare home, proactive plan of care and follow-up, communication, information systems, and transitions.</p>			
<p>25. National Quality Forum (NQF). NQF-Endorsed Definition and Framework for Measuring Care Coordination, Washington, DC: NQF, May 2006.</p>	<p>As part of a broader effort to endorse performance measures of ambulatory care, there was an emphasis on care coordination; however, sufficiently developed, existing measures of coordination of care could not be identified for endorsement at that time. As an alternative, this report provides a definition and framework for measuring care coordination.</p>	<p>The entire spectrum of health care.</p>	<p>Increased need for systematic approach and measurement evaluation structure to care coordination resulting from demographic, economic, and social trends.</p>
<p>Findings/Recommendations: The following definition of care coordination was endorsed: “Care coordination is a function that helps ensure that the patient’s needs and preferences for health services and information sharing across people, functions, and sites are met over time. Coordination maximizes the value of services delivered to patients by facilitating beneficial, efficient, safe, and high-quality patient</p>			

Source	Summary	At-Risk Populations	Nature/Cause of the Problem
<p>experiences and improved healthcare outcomes.”</p> <p>A framework with 5 domains (i.e., healthcare home, proactive plan of care and follow-up, communication, information systems, and transitions) and 4 principles (i.e., importance of care coordination for everyone; vulnerability of certain populations; level of measurement at physician-, practice-, group-, or organizational-level; importance of patient and/or family surveys of experience) was endorsed.</p>			
<p>26. Naylor MD, Aiken L, Kurtzman ET. Nursing's contributions to care coordination and transitional care: state of the science. RWJF Nursing Research Network Working Paper. Unpublished, 2009.</p>	<p>Review of 23 RCTs examining care coordination and transitional care interventions in which a nurse has an explicit role in its delivery.</p>	<p>Chronically ill adults receiving transitional care or care coordination that includes an explicit nursing role</p>	<p>Burden and cost of care for the chronically ill</p>
<p>Findings/Recommendations: Both types of interventions (transitional care and care coordination) were found to positively affect selected outcomes—patient adherence, clinical indicators, emotional and social domains of quality of life. However, little effect on other outcomes was discovered (e.g., physical domains of quality of life, mortality, cost savings). Little information regarding the contributions of nurses to these interventions or the intervention effects could be discerned. Nurses' preparation, role in the intervention or the intervention's dose were too diverse to draw any conclusions.</p>			
<p>27. O'Malley AS, Tynan A, Cohen GR, Kempber NM, Davis, MM. Coordination of Care by Primary Care Practices: Strategies, Lessons and Implications, Research Brief No. 12, Washington, DC: Center to Study Health System Change, April 2009.</p>	<p>An account of real-world care coordination strategies used in primary care from 62 interviews of physician and national experts.</p>	<p>Patients served in 62 outpatient medical practices (otherwise unspecified)</p>	<p>Lack of few real-world accounts of how care coordination is implemented in primary care practices</p>
<p>Findings/Recommendations: The authors found no single strategy for care coordination which resulted from the variety of patient, physician, practice and market factors. However, several cross cutting themes could be identified:</p> <ul style="list-style-type: none"> commitment of interpersonal continuity of care delegation, role definition, and training flexibility in that strategies may vary practice-by-practice physician support as a key facilitator standardization of office processes is important relationships between primary care practitioners and specialists is a key to successful coordination strategies balancing patient care access with continuity and coordination chart preparation, pre- and post-visit planning, and planned-care visits facilitate coordination. patients and families as partners financial support for care coordination is necessary <p>Policy implications include examining the medical home and its relevance to these issues, ensuring flexibility in any standard to allow novel solutions to be designed/implemented, measuring performance across settings/providers, technical support to practices, and the provision of performance data to primary care physicians to improve referrals.</p>			
<p>28. Ouwens M, Wollersheim H, Hermens R,</p>	<p>Examination of components</p>	<p>Chronically ill patients</p>	<p>Recognition that high quality care requires the</p>

Source	Summary	At-Risk Populations	Nature/Cause of the Problem
Hulscher M, Grol R. Integrated care programmes for chronically ill patients: a review of systematic reviews. <i>Int J Qual Health Care</i> . 2005 Apr;17(2):141-6.	and effectiveness of integrated care and disease management programs for chronically ill patients in 13 systematic reviews		coordination and integration of care between professionals but limited evidence of effectiveness regarding specific components or implementation
<p>Findings/Recommendations: Of the 13 systematic reviews included, significant heterogeneity was found regarding the interventions used, patient populations, provider populations, and processes and outcomes of care. However, some positive effects were reported—most frequently in hospital utilization, quality of life, functional health, patient satisfaction, and process outcomes (e.g., guideline adherence). Effects on mortality and cost were more unclear. Only 15% of the effects reported in the reviews were significant. While the programs had similar aims (i.e., reduce fragmentation and improve coordination) the interventions themselves varied. The most commonly mentioned were patient self-management, support, and education; structured clinical follow-up and case management; and use of multidisciplinary care teams.</p> <p>NOTE: One title in this review is also independently reviewed in this summary of evidence (i.e., Weingarten).</p>			
29. Peikes D, Chen A, Schore J, Brown R. Effects of care coordination on hospitalization, quality of care, and health care expenditures among Medicare beneficiaries: 15 Randomized Trials. <i>JAMA</i> . 2009;301(6):603-618.	Final findings from the Medicare Coordinated Care Demonstration (MCCD) under which 15 demonstration programs of case management and disease management programs were tested through a random assignment study for their impact on cost, outcome, and well-being in the Medicare fee-for-service population. NOTE: See Brown, 2007 for interim, 2-year findings	Medicare fee-for-service beneficiaries with chronic illness (primarily congestive heart failure, coronary artery disease, and diabetes)	Prevalence, cost, and impact on quality of life of chronic ill among Medicare beneficiaries.
<p>Findings/Recommendations: Thirteen of the 15 programs showed no significant ($P<.05$) differences in hospitalizations; one had 17% fewer and one had 19% more than the control group. None of the 15 programs generated net savings. Treatment group members in 3 programs had monthly Medicare expenditures less than the control group by 9% to 14%. These, however, were not statistically significant differences. The authors contend that “Viable care coordination programs without a strong transitional care component are unlikely to yield net Medicare savings. Programs with substantial in-person contact that target moderate to severe patients can be cost-neutral and improve some aspects of care.”</p>			
30. Rosenbach M, Young CG. Care Coordination in Medicaid Managed Care: Emerging Issues for States and Managed Care Organizations. Princeton, NJ:	The report summarizes an interview-based study of care coordination in five states, conducted by	Medicaid beneficiaries with special health care needs in risk-based managed care environment	The emergence of state regulation and managed care organization policies prompted the development of care coordination services to ensure that medical and social needs.

Source	Summary	At-Risk Populations	Nature/Cause of the Problem
Mathmatica Policy Research, Inc., 2000.	Mathematica Policy Research for the Center for Health Care Strategies		
<p>Findings/Recommendations: The study makes the following points: (1) care coordination programs are not identical and can be slow to develop; (2) For the Medicaid managed care population, care coordination must be broader than simply expanding case management to include referrals for social services; (3) creative problem-solving, through advocacy, is emerging as an important new role for care coordinators.</p> <p>Three models were could be identified: A centralized team model, generally comprised of nurses and social workers, in which all care coordination staff are located at the MCO central office A regionalized model, in which staff may be assigned to serve specific geographic areas A provider-based model, in which staff are assigned to support specific provider groups</p> <p>Six areas were identified as ongoing barriers to the provision of care coordination: bridging the confidentiality barriers experienced by MCOs addressing boundary issues between MCOs and other agencies increasing knowledge about the availability of care coordination services developing standardized tools for assessment and care planning setting appropriate rates to cover the cost of care coordination services evaluating the effectiveness of care coordination services</p>			
31. Smith SM, Allwright S, O'Dowd T. Effectiveness of shared care across the interface between primary and specialty care in chronic disease management. Cochrane Database Syst Rev. 2007 Jul 18;(3):CD004910.	A Cochrane Review of 20 studies (19 RCTs) on the effectiveness of shared-care health service interventions designed to improve the management of chronic disease across the primary-specialty care interface. Shared care us defined as “the joint participation of primary care physicians and specialty care physicians in the planned delivery of care, informed by an enhanced information exchange over and above routine discharge and referral notices.”	Chronically ill	Need to improve chronic disease management and the promise of shared care which has theoretical benefits with a focus on continuity of care among the chronically ill.
<p>Findings/Recommendations: Among the 20 heterogeneous studies examined, the majority examined complex multifaceted interventions of a relatively short duration. Overall results were mixed—no consistent improvements in process or outcome measures among those studies (e.g., physical and mental health outcomes, measures of disability and functioning, hospital admissions, recording of risk factors, satisfaction with treatment). Improvements in prescribing were, however, discovered.</p>			

Source	Summary	At-Risk Populations	Nature/Cause of the Problem
32. Sochalski J, Jaarsma T, Krumholz HM, Laramie A, McMurray JJ, Naylor MD, Rich MW, Riegel B, Stewart S. What works in chronic care management: the case of heart failure. <i>Health Affairs</i> . 2009; 28(1): 179–189.	An analysis of pooled data from 10 RCTs of care management programs for heart failure programs to examine different combinations of their delivery methods on patient outcomes.	Patients with heart failure	While CMS demonstrations of chronic care (i.e., Medicare Coordinated Care and Medicare Health Support Demonstrations) have not achieved significant effects on cost/quality, this paper re-examines additional RCTs to determine the effect of different delivery methods on outcomes.
Findings/Recommendations: These authors found significant reductions in readmissions and readmission days per month from in-person, multidisciplinary team-based interventions.			
33. Tsai AC, Morton SC, Mangione CM, Keeler EB. A meta-analysis of interventions to improve care for chronic illnesses. <i>Am J Manag Care</i> . 2005 Aug;11(8):478-88.	A meta-analysis of 112 randomized and nonrandomized studies to determine the effectiveness of interventions based on elements of the Chronic Care Model (CCM) on clinical outcomes, quality of life, and processes of care.	Patients with asthma, congestive heart failure (CHF), depression, and diabetes	Evidence that supports CCM has been based on self-reported, uncontrolled studies. This study reanalyzes previous, published studies to examine CCM's individual components.
<p>Findings/Recommendations: These authors found that interventions that contain at least 1 CCM element improve clinical outcomes and processes of care. Improvements in quality of life—but to a lesser extent—were also observed. Additionally, four CCM elements (i.e., delivery system design, self-management support, decision support, and clinical information systems) were associated with better outcomes and processes, after adjusting for the presence of other elements if the intervention contained more than one element. Results were consistent across the conditions studied.</p> <p>In post hoc analyses, the authors examined whether there was any advantage in effectiveness to having more CCM components and found that that advantage was never statistically significant and does not appear to be more than additive.</p>			
34. U.S. Government Accountability Office (GAO). Medicare Physician Payment: Care Coordination Programs Used in Demonstration Show Promise, but Wider Use of Payment Approach May Be Limited. February 2008.	The report summarizes findings from the first performance year of the CMS Physician Group Practice (PGP) Demonstration which was mandated by Congress to test a hybrid payment methodology for physician groups that combines Medicare fee-for-service payments with new incentive payments. The		Fueled by increase spending and failures in the Medicare FFS payment system to incentivize physicians to make efficient use of resources, the PGP Demonstration was initiated to reverse these problems and encourage the coordination of services, promote efficiency, and reward physicians for improving health outcomes

Source	Summary	At-Risk Populations	Nature/Cause of the Problem
	report is based on CMS documents, surveys of the practices, and interviews and site visits.		
Findings/Recommendations: As it relates to the 10 PGP Demonstration practices' response to incentives and goals to increase efficiency, all of the practices implemented care coordination strategies. The practices expanded and/or initiated new programs, nearly three-quarters of which were care coordination programs to manage the care of chronically ill. The remaining one-quarter of programs focused on patient education, medication-related issues, improving administrative processes, and other initiatives. Participants aimed their programs on reducing hospitalizations based on the belief that these programs would reduce future hospitalizations and yield the most cost savings in the shortest amount of time. Case management and disease prevention were the two most common care coordination interventions. All 10 programs reported making progress in both achieving cost savings and providing broader benefits; however, GAO contends that the findings are inconclusive because of implementation delays, start up funding, and the need to educate physicians.			
35. Weingarten SR, Henning JM, Badamgarav E, Knight K, Hasselblad V, Gano A Jr, Ofman JJ. Interventions used in disease management programmes for patients with chronic illness-which ones work? Meta-analysis of published reports. BMJ. 2002 Oct 26;325(7370):925.	A meta-analysis examining the characteristics and effectiveness of 102 published titles of experimental or quasi experimental studies of disease management programs (118 unique programs).	Adult patients receiving disease management	Recognition that while disease management programs may improve quality and value for those with chronic disease, they are costly to develop, implement, and evaluate.
Findings/Recommendations: These authors found that a variety of studies that incorporated various interventions (by number and by type) were studied. Programs that incorporated interventions directed to the patient (e.g., patient education, patient reminders) and providers (e.g., provider education, incentives) were both examined. Patient education was the most common intervention followed by provider education/feedback. Most of the programs used more than one intervention. Provider education, feedback, and reminders were associated with significant improvements in provider adherence to guidelines and in patient disease control. Patient education, reminders, and financial incentives were all associated with improvements in patient disease control.			
36. Wise PH, Huffman LC, Brat G. A Critical Analysis of Care Coordination Strategies for Children With Special Health Care Needs. Technical Review No. 14. (Prepared by the Stanford University—UCSF Evidence-based Practice Center under Contract No. 290-02-0017.) AHRQ Publication No. 07-0054. Rockville, MD: Agency for Healthcare Research and Quality. June 2007.	Examine the evidence informing strategic guidance on the critical aspects of care coordination for children with special health care needs (CSHCN). Because of the nature of the problem, a special emphasis was placed on the impact of structural influences on care coordination for poor	Children with special health care needs (CSHCN) as defined by the Federal Maternal and Child Health Bureau (MCHB) and accepted by the Academy of Pediatrics: "Children with special health care needs are those who have or are at increased risk for a chronic physical, developmental, behavioral, or emotional condition and who also require health and related	The increase in childhood chronic disease, unique dependence of children on adults and regionalization of specialized services to respond to these needs adds a level of complexity to care coordination efforts. Improving care coordination for this population has focused on two strategies: specialized care coordination interventions for selected clinical populations (e.g., case managers, medical home, home care), and organizing care through managed care. Despite the added complexity, a review of the evidence regarding the actual impact of care

Source	Summary	At-Risk Populations	Nature/Cause of the Problem
	children enrolled in Medicaid managed care	<p>services of a type or amount beyond that required by children generally.”</p> <p>The review included articles that were likely to most directly relate to the definitions of CSHCN and care coordination regardless of study outcomes but limited to those that involved more than one diagnostic group. Additionally, the review included studies on the impact of managed care on CSHCNs enrolled in Medicaid.</p>	coordination efforts on outcomes for children with special health care needs is lacking.
<p>Findings/Recommendations: Evidence assessing care coordination for CSHCN is limited. Only 7 studies published in the past 15 years were identified. Of these, interventions, study designs, study quality, population served, and the outcomes varied considerably. Interventions included, but were not limited to, home-based care, discharge planning, case management, nurse practitioner care, expedited referrals, and specialty services. Outcomes included mortality, utilization, cost, patient and parent satisfaction, length of stay, and parent missed days of work.</p> <p>The authors found only small number of peer-reviewed studies (n=16) documenting the impact of Medicare managed care programs on CSHCN. They varied in quality and the measurement domains addressed (e.g., access, quality, utilization, satisfaction). In examining these, the authors found them to be highly varied and inconsistent regarding the effectiveness of Medicare managed care for CSHCN.</p> <p>Formulated recommendations to accelerate the understanding and use of care coordination strategies among CSHCN: enhance the utility of CSHCN definition to include standardized identification of CSHCN in large administrative or clinical datasets fully integrate parental and clinician roles evaluate care coordination interventions for CSHCN, particularly in managed care settings support the replication of promising approaches to care coordination for this population (i.e., Pediatric Alliance for Coordinated Care) develop performance measures of direct relevance to CSHCN</p>			

Appendix B: Key Legislative Initiatives (Affordable Care Act, HITECH)

Over the last 12 months, two significant pieces of legislation have been enacted that are likely to stimulate adoption of programs, demonstrations, and policies that address care coordination. This summary is intended to identify the manner in which both the Accountable Care Act and Health Information Technology for Economic and Clinical Health Act (HITECH) are likely to influence the delivery and payment of care coordination and inventory specific provisions that are most likely to be impactful.

Affordable Care Act

On March 23, 2010, President Barack Obama signed into law the Patient Protection and Affordable Care Act (PPACA; P.L. 111-148) and the Health Care and Education Reconciliation Act of 2010 (HCERA; P.L. 111-152), which together represent comprehensive health reform legislation. Overall, the legislation, referred to as the Affordable Care Act, is intended to expand access, improve quality, and reduce costs by introducing sweeping health insurance market reforms along with changes in policies that address payment, health care delivery, quality measurement and reporting, and workforce preparation.

The legislation is composed of ten titles that collectively address the full range of federal health care policies (e.g., insurance reform, payment, quality, prevention and public health, workforce, comparative effectiveness) and programs (e.g., acute care hospitals, physician services, outpatient prescription drug program, skilled nursing, home health, hospice):

Title I—Insurance coverage and health insurance exchanges;

Title II—Medicaid and maternal and child health;

Title III—Medicare and quality of care;

Title IV—Prevention and wellness;

Title V—Health workforce;

Title VI—Comparative effectiveness research and elder justice;

Title VII—Drugs and biologics;

Title IX—Revenues; and

Title X—Amendments to the other nine titles.

Because of demographic trends, patterns of chronic disease, lapses in health care quality, and economic factors including the disproportionate health care spending on a small, but growing, number of chronically ill elderly, a major policy theme that crosses the ten titles is that of care coordination—especially among those beneficiaries who are both elderly and chronically ill. Additionally, because of the significant substantial cost savings and improvement of Medicare beneficiaries' quality of care and quality of life, within the broad context of care coordination, the law enacts a number of specific provisions intended to expand the delivery of evidence-based transitional care and reduce preventable hospital readmissions.[§]

[§] It is notable that the law uses different terms and combinations of terms including either admissions or readmissions and avoidable or preventable.

Overview

Overall, the Accountable Care Act's provisions strengthen care coordination by financially incentivizing care that is aligned and integrated, introducing new models of care—via demonstrations, pilots, and authorized programs—that test care coordination approaches among specific populations and/or beneficiaries, and engaging patients and their families in ways that strengthen their involvement in health care decisionmaking.

Based on the provisions enacted, the following major topics are emphasized:

1. Performance Measurement and Reporting;
2. Innovation and Delivery System Reform;
3. Value-based Purchasing and Financial Incentives;
4. Strengthening the Health Care Workforce and Improving Access to Services; and
5. Improving Health Care Across Payers.

Care Coordination-Related Content

1. Performance Measurement and Reporting

Although there has been a proliferation of health care performance measurement and reporting initiatives over the past decade, the quality enterprise has been driven by a diverse array of stakeholders acting cooperatively but independently and largely lacked coordination at the national level. Under the Accountable Care Act, the Department of Health and Human Services (DHHS) will drive the development of a national strategy for quality improvement in health care including the:

- development of a strategic plan and the setting of national priorities for improvement (Sec. 3011) that specifically improves, among other things, research and dissemination of strategies and best practices that prevent hospital readmissions (Sec. 399HH);
- establishment of an interagency working group on health care quality, convened by the President, with the goal of coordinating the quality enterprise and its component parts (Sec. 3012);
- prioritization of measure development including measures of the management and coordination of health care across episodes of care and care transitions for patients across the continuum of providers, health care settings, and health plans (Sec. 3013);
- centralization and strengthening of measure development, measure endorsement, measure selection and implementation, and public reporting of quality data at a federal level (Sec. 3014, 3015);
- monitoring, tracking, and/or reporting to DHHS efforts that improve in health outcomes through effective case management, care coordination, chronic disease management and implementation of activities to prevent hospital readmissions (Sec. 2703, Sec. 2717);
- development and, in some cases, expansion of vehicles for public reporting of performance information including the evaluation of continuity and coordination of care and care transitions (Sec. 399JJ, Sec. 6103 [nursing home compare], Sec. 3001 [hospital value-based purchasing], Sec. 3008 [hospital acquired-conditions], Sec. 3025 [hospital readmissions reduction program], Sec. 10331 [physician compare]);

- establishment and reporting of quality measures to DHHS by entities participating in the national pilot on payment bundling that relate to reductions of avoidable hospital readmissions; and
- public reporting of hospital readmission rates on Hospital Compare for the conditions selected as part of the hospital readmission reduction program (Sec. 3025).

2. Innovation and Delivery System Reform

Under health reform legislation, the Department of Health and Human Services has been tasked with testing and implementing a number of delivery system reforms and innovations. Many of these are aimed at achieving ‘seamless’ and integrated care and/or coordinating services, benefits, and reimbursement for beneficiaries with chronic conditions. A variety of policies are intended to improve quality and enhance efficiency through enhanced care coordination and reduced hospital readmissions including the:

- establishment of criteria for certification of qualified health plans by DHHS that includes their implementation of strategies to improve health outcomes through effective case management, care coordination, chronic disease management and implementation of activities to prevent hospital readmissions (Sec. 1311);
- establishment of a Center for Medicare and Medicaid Innovation that will test innovative payment and service delivery models with prioritization of models that improve the coordination, quality, and efficiency of health care services (e.g., programs as those that utilize geriatric assessments and comprehensive care plans to coordinate the care of individuals with multiple chronic conditions) (Sec. 3021);
- support from patient safety organizations in a program to reduce readmission rates as part of the hospital readmissions reduction program (Sec. 3025);
- establishment a community-based care transitions program (e.g., post-discharge follow up services, patient-self support) for high-risk Medicare beneficiaries (Sec. 3026);
- support for the patient-centered health and medical home, capitated models of care delivered by interprofessional health care teams and focused on coordinating and providing access to quality-driven, cost-effective, culturally appropriate, patient- and family-centered health care and care management and support during transitions in care settings (Sec. 2703, Sec. 3502);
- implementation of, through grants or contracts, medication management services for the treatment of chronic diseases including the submission of a plan for coordinating medication management services through local community health teams (Sec. 3503);
- establishment of a patient navigator program to conduct public education, distribute information concerning enrollment in qualified health plans, facilitate enrollment in qualified health plans, provide referrals for complaints and grievances, and provide culturally and linguistically appropriate information (Sec. 3510, Sec. 1311);
- support for community-based collaborative care networks—a consortium of health care providers that delivers comprehensive, coordinated, and integrated health care services to low-income populations (Sec. 10333); and
- establishment of national centers of excellence for depression to develop, implement, and disseminate evidence-based interventions, foster among mental health professionals engagement in and dissemination of research that meets the needs of

individuals with depressive disorders, develop improved treatment standards, clinical guidelines, diagnostic protocols, and care coordination practices and expand translational research through collaboration (Sec. 10410).

3. Value-based Purchasing and Financial Incentives

While the federal government has been transitioning from a passive payer of services into an active purchaser of higher quality over the last several years, the Accountable Care Act establishes a number of programs that tie payment to performance through value-based purchasing programs. In general, these programs go beyond those already established which are typically penalty-based and based on performance reporting to strengthen performance-based financial payments. Specific provisions include those that:

- support for a Medicare shared savings program, through an accountable care organization, that promotes accountability for a patient population, coordinates services, and encourages investment in infrastructure and redesigned care processes for high quality and efficient service delivery (Sec. 3022);
- pilot test a national payment bundling program that furnishes episode-based payments built around a hospitalization and including such services as care coordination, medication reconciliation, discharge planning, and transitional care (Sec. 3023);
- establishment of an independence at home demonstration program—a payment incentive and service delivery model utilizing physician- and nurse practitioner-directed home-based primary care teams in the provision of comprehensive, coordinated, continuous, and accessible care to high-need populations at home—with examination of its impact on, among other outcomes, the prevention of hospital readmissions (Sec. 3024); and
- establishment of a hospital readmissions reduction program which would reduce Medicare reimbursement to hospitals exhibiting excessive readmissions rates (i.e., actual versus estimated) for patients with selected conditions (Sec. 3025).

4. Strengthening the Health Care Workforce and Improving Access to Services

It is widely acknowledged that in order to transform U.S. health care delivery, changes in the education and training of the health care workforce are necessary. There are significant threats to the size, specialty mix, and geographic distribution of the workforce with anticipated shortages within settings (e.g., primary/specialty care, rural and underserved areas, community-based, public health) and among providers (e.g., physicians, nurses). There are specific concerns with regard to the workforce's ability to address the needs of the growing chronically ill and geriatric populations and underserved communities. To address the pressing workforce demands, the Accountable Care Act includes provisions that increase the size and quality of and access to the health care workforce. Specific provisions are intended to strengthen the workforce's ability to coordinate care and provide transitional care services including the

- support through grants for the establishment, maintenance, or improvement of primary care training programs (e.g., family medicine, general internal medicine, or general pediatrics for medical students, interns, residents, or practicing physicians) with priority given to entities that propose innovative approaches to clinical teaching using models of primary care, such as the patient centered medical home, team management of chronic disease, and interprofessional integrated models of health care that incorporate transitions in health care settings and integration physical and mental health provision (Sec. 5301);

- promotion of positive health behaviors and outcomes for populations in medically underserved communities through the use of community health workers who serve as a liaison between communities and health care agencies and support coordination of care (Sec. 5313);
- development of an integrated longitudinal plan for health professions continuing education throughout the continuum which emphasizes patient-centered, interdisciplinary, and care coordination skills (Sec. 5315);
- establishment of a graduate nurse education demonstration that provides hospitals with payments for their reasonable costs for clinical training to advance practice nurses with the clinical skills necessary to provide primary care, preventive care, transitional care, chronic care management (Sec. 5509);
- demonstration programs through awards and cooperative agreements that provide coordinated and integrated services to special populations through the co-location of primary and specialty care services in community-based mental and behavioral health settings (Sec. 520K).

5. Improving Health Care Across Payers

U.S. health care is funded through a combination of public and private sources that are not coordinated or aligned. Because of different eligibility requirements, quality monitoring systems, and reimbursement policies beneficiaries receiving both Medicare and Medicaid are particularly vulnerable to lapses, inconsistencies, and inefficiencies. In response, a number of the Accountable Care Act's provisions are aimed at improving health care across payers and

- requirements of states to develop service systems that are designed to strengthen home and community based services and provide strategies for beneficiaries receiving such services that maximize their independence (Sec. 2402);
- establishment of a Federal Coordinated Health Care Office aimed at improving care continuity and ensuring safe and effective care transitions for dual eligible individuals by supporting state efforts to coordinate and align acute care and long-term care services for dual eligibles and producing an annual report containing recommendations for legislation that would improve care coordination and benefits for dual eligibles (Sec. 2602); and establishment of maternal, infant, and early childhood home visiting programs to improve coordination of services for at-risk communities to promote improvements in maternal and prenatal health, infant health, child health and development, parenting related to child development outcomes, school readiness, and the socioeconomic status of such families, and reductions in child abuse, neglect, and injuries (Sec. 2951).

Health Information Technology for Economic and Clinical Health Act (HITECH; H.R. 1)

On February 17, 2009, President Barack Obama signed into law the American Recovery and Reinvestment Act of 2009 (ARRA; P.L. 111-5). The Health Information Technology for Economic and Clinical Health Act (HITECH) was incorporated into ARRA. Overall, HITECH is intended to advance the use of health information technology by:

- requiring the government to take a leadership role in developing standards that enable the nationwide electronic exchange and use of health information to improve quality and coordinate care;
- investing over \$20 billion in health information technology infrastructure and incentives to encourage hospitals and health practitioners to use health information technology;
- generating savings through improvements in quality and safety and care coordination; and
- strengthening laws to protect identifiable health information from misuse as the use of such technology increases.

Although the Congressional Budget Office (CBO) estimates that spending under HITECH will exceed \$32 billion over the 2009-2010 period,²⁶ it also anticipates that the adoption of health information technology will offset some of that spending through savings in duplicative tests and procedures, paperwork and administrative overhead, and medical errors—\$12.5 billion through 2019. Furthermore, CBO estimates that use of health information technology will rise to approximately 70% among hospitals and 90% among physicians which represents increases of 25-35% that would not be realized in the absence of HITECH.

Under HITECH, incentive payments made by Medicare and Medicaid are tied to ‘meaningful use’ of electronic health records (EHR) by hospitals and eligible practitioners. On July 13, 2010, the Centers for Medicare & Medicaid Services and the Office of the National Coordinator for Health Information Technology (ONC) released its final rules to implement this EHR program including the 2011-2012 criteria that must be met to demonstrate meaningful use and qualify for HITECH incentive payments. These criteria include 15 “core” objectives—which must be met—and an additional 10 “menu” objectives—from which five must be met—to qualify for payments. Notably, a number of these objectives relate to providers’ achievement of the NPP vision for care coordination including transitional care. These have been summarized below.

Summary of Key Provisions from the “Meaningful Use” Regulation that Address Care Coordination:**

Core Set		Menu Set	
Objectives	Incentive Threshold	Objectives	Incentive Threshold
Maintain up-to-date problem list of current and active diagnoses	> 80% of patients have ≥1 entry recorded as structured data	Incorporate clinical laboratory test results into EHRs as structured data	> 40% of clinical laboratory test results whose results are in positive/negative or numerical format are incorporated into EHRs as structured data
Maintain active medication list	> 80% of patients have ≥1 entry recorded as structured data	Identify patient-specific education resources and provide those to the patient	> 10% of patients are provided patient-specific education resources
Provide clinical summaries for each office visit/hospital discharge instructions on request	Clinical summaries provided to patients > 50% of all office visits within 3 business days; > 50% of all patients who are discharged and make request	Perform medication reconciliation between care settings	> 50% of transitions of care
Provide electronic copy of health information on request	> 50% within 3 business days	Provide summary of care record for patients referred or transitioned to another provider or setting	> 50% of transitions or referrals
Generate and transmit permissible prescriptions electronically (does not apply to hospitals)	> 40% using certified HER technology	Record advance directives for patients 65 years of age or older (hospitals only)	More than 50% of patients 65 years of age or older have an indication of an advance directive status recorded
Implement capability to electronically exchange key clinical information among providers and patient-authorized entities	Perform at least one test of EHR’s capacity to electronically exchange information	Send reminders to patients for preventive and follow-up care (eligible professionals only)	> 20% or patients ≥ 65 yoa or ≤ 5 yoa
		Provide patients with timely electronic access to their health information	> 10% of patients within 4 days of its being updated in the EHR

** Adapted from Blumenthal D, Tavenner M. The “meaningful use” regulation for electronic health records. N Engl J Med. 2010 Jul 13. [Epub ahead of print].

Appendix C: NQF-Endorsed™ Performance Measures and Practices

The following tables list each of the NQF performance measures or preferred practices that relate to care coordination arrayed by domain.

Performance Measures for Care Coordination (by domain and conceptual element)^{††}

Measure	Domains					Conceptual Elements		Other
	Health Care Home	POC and F/U	Communication	Info Systems	Transitions	Flow of Info	Transfer of Accountability	Re-admissions
1. Medical Home System Survey (0494)	X		X			X		
2. hemodialysis adequacy/plan of care (0323)		X				X	X	
3. home management plan of care document given to patient/caregiver (0338)		X	X			X	X	
4. hypertension plan of care (0017)		X				X	X	
5. oncology: plan of care for pain – medical oncology and radiation oncology (0383 paired with 0384)		X				X	X	
6. peritoneal dialysis adequacy/plan of care (0321)		X				X	X	
7. pressure ulcer prevention included in plan of care (0538)		X				X	X	
8. pressure ulcer prevention plans implemented (0539)		X				X	X	
9. primary open-angle glaucoma: reduction of intraocular pressure by 15% or documentation of a plan of care (0563)		X				X	X	
10. urinary incontinence: plan of care for urinary incontinence in women (0100)		X				X	X	
11. adult weight screening and follow-up (0421)		X					X	
12. appropriate follow up for patients with HIV (0568)		X					X	
13. melanoma continuity of care – recall system (0650)		X					X	
14. patients with a transient ischemic event ER visit that had a follow up office visit (0644)		X					X	
15. the ability for providers with HIT to receive laboratory data electronically directly into their qualified/certified EHR system as						X	X	

^{††} Adapted from: National Quality Forum. NQF-Endorsed® Standards. Available at http://www.qualityforum.org/Measures_List.aspx.

Measure	Domains					Conceptual Elements		Other
	Health Care Home	POC and F/U	Communication	Info Systems	Transitions	Flow of Info	Transfer of Accountability	Re-admissions
discrete searchable data elements (0489)								
16. diabetic retinopathy: communication with the physician managing ongoing diabetes care (0089)			X			X	X	
17. HCAHPS (0166)			X					
18. administrative communication (0291)			X			X	X	
19. cardiac rehabilitation patient referral from an inpatient setting (0642)					X		X	
20. cardiac rehabilitation patient referral from an outpatient setting (0643)					X		X	
21. biopsy follow-up (0645)		X			X		X	
22. HBIPS-6 post discharge continuing care plan created (hospital-based inpatient psych setting) (0557)		X				X	X	
23. HBIPS-7 post discharge continuing care plan transmitted to next level of care provider upon discharge (0558)						X	X	
24. medication Information (0293)			X			X	X	
25. nursing Information (0296)			X			X	X	
26. patient Information (0294)			X			X	X	
27. physician Information (0295)			X			X	X	
28. procedures and tests (0297)			X			X	X	
29. reminder system for mammograms (0509)			X			X	X	
30. the ability to use health information technology to perform care management at the point of care (0490)				X		X		
31. melanoma coordination of care (0561)		X			X	X	X	
32. follow-up after hospitalization for mental illness (0576)		X			X		X	
33. medication reconciliation (0097)					X			
34. medication reconciliation post-discharge (0554)					X	X	X	
35. reconciled medication list received by discharged patients (inpatient to home/self care or any other site of care) (0646)					X	X	X	
36. timely transition of transition record (inpatient discharges to home/self care or any other site of care) (0648)					X	X	X	
37. transition record with specified elements received by discharged			X		X			

Measure	Domains					Conceptual Elements		Other
	Health Care Home	POC and F/U	Communication	Info Systems	Transitions	Flow of Info	Transfer of Accountability	Re-admissions
patients (emergency department discharges to ambulatory care [home/self care]) (0649)								
38. transition record with specified elements received by discharged patients (inpatient discharges to home/self care or any other site of care) (0647)			X		X			
39. 3-Item Care Transition Measure (CTM-3) (0228)					X	X	X	
40. timely initiation of care (CMS) for home care patients (0526)							X	
41. 30-day all-cause risk standardized readmission rate following acute myocardial infarction hospitalization (0505)					X			X
42. 30-day all-cause risk standardized readmission rate following heart failure hospitalization (0330)					X			X
43. 30-day all-cause risk standardized readmission rate following pneumonia hospitalization (0506)					X			X
44. all-cause, risk adjusted readmission index (0329)					X			X
45. pediatric intensive care unit (PICU) unplanned readmission rates (0335)					X			X
46. review of unplanned PICU readmissions (0336)					X			X

POC = plan of care

F/U = follow up

PICU = pediatric intensive care unit

Preferred Practices for Care Coordination (by domain)^{‡‡}

Domain	Practice Statement
Health Care Home	1. The patient shall be provided the opportunity to select the healthcare home that provides the best and most appropriate opportunities to the patient to develop and maintain a relationship with healthcare providers.
	2. Healthcare home or sponsoring organizations shall be the central point for incorporating strategies for continuity of care.
	3. The healthcare home shall develop infrastructure for managing plans of care that incorporate systems for registering, tracking, measuring, reporting, and improving essential coordinated services.
	4. The healthcare home should have policies, procedures, and accountabilities to support effective collaborations between primary care and specialist providers, including evidence-based referrals and consultations that clearly define the roles and responsibilities.
	5. The healthcare home will provide or arrange to provide care coordination services for patients at high risk for adverse health outcomes, high service use, and high costs.
Proactive Plan of Care and Follow-Up	6. Healthcare providers and entities should have structured and effective systems, policies, procedures, and practices to create, document, execute, and update a plan of care with every patient.
	7. A systematic process of follow-up tests, treatments, or services should be established and be informed by the plan of care.
	8. The joint plan of care should be developed and include patient education and support for self-management and resources.
	9. The plan of care should include community and nonclinical services as well as healthcare services that respond to a patient's needs and preferences and contributes to achieving the patient's goals.
	10. Healthcare organizations should use cardiac rehabilitation services to coordinate care for patients with a recent cardiovascular event, where available, appropriate, and accessible.
Communication	11. The patient's plan of care should always be made available to the healthcare home team, the patient, and their designees.
	12. All healthcare home team members, including patients and their designees, should work within the same plan of care and share responsibility for their contributions to the plan of care and achieving the patient's goals.
	13. A program should be used that incorporates a care partner to support family and friends when caring for a hospitalized patient.
	14. Assess and document the provider's perspective of care coordination activities.
Information Systems	15. Standardized, integrated, interoperable and electronic information systems that have with functionalities essential to care coordination functions, decision support, and quality measurement and practice improvement should be used.
	16. An electronic record system should allow the patient's health information to be accessible to caregivers at all

^{‡‡} From: National Quality Forum. Endorsing preferred practices and performance measures for care coordination: A consensus report (voting version). Washington, DC: Author, December 17, 2009.

Domain	Practice Statement
	points of care.
	17. Regional health information systems governed by public/private partnerships should enable healthcare home teams and to access all patient information.
Transitions	18. Decisionmaking and planning for transitions of care should involve the patient, and, according to patient preferences, family and caregivers (including the healthcare home team). Appropriate follow-up protocols should be used to assure timely understanding and endorsement of the plan for patient and their designees.
	19. Patient and their designees should participate directly in determining and preparing for ongoing care during and after transitions.
	20. Systematic care transitions programs that engage patients and families in self-management after being transferred home should be used whenever available.
	21. For high-risk chronically ill older adults, an evidence-based multidisciplinary, transitional care practice that provides comprehensive in-hospital planning, home-based visits and telephone follow-up, such as the Transitional Care Model, should be deployed.
	22. Healthcare organizations should develop and implement a standardized communication template for the transitions of care process, including a minimal set of core data elements that are accessible to the patient and their designee during care.
	23. Healthcare providers and healthcare organizations should implement protocols/policies for a standardized approach to all transitions of care. Policies and procedures related to transitions and the critical aspects should be included in the standardized approach.
	24. Healthcare providers and healthcare organizations should have systems in place to clarify, identify, and enhance mutual accountability (complete/confirmed communication loop) of each party involved in a transition of care.
	25. Healthcare organizations should evaluate the effectiveness of transition protocols and policies, as well as evaluate transition outcomes.

References

- ¹ Institute of Medicine. *Crossing the Quality Chasm: A New Health System for the 21st Century*. Washington, DC: National Academies Press, 2001.
- ² Hartman M, Martin A, Nunccio O, Catlin A, and the National Health Expenditures Account Team. Health spending growth at a low in 2008. *Health Affairs*. 2010; 29(1):147–155.
- ³ Institute of Medicine. *America's Health in Transition: Protecting and Improving Quality*. Washington, DC: National Academies Press, 1994.
- ⁴ Smedley BD, Stith AY, Nelson AR, Eds. *Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care*. Washington, DC: National Academies Press, 2003.
- ⁵ McGlynn EA, Asch SM, Adams J, Keesey J, Hicks J, DeCristofaro A, Kerr EA. The quality of health care delivered to adults in the United States. *NEJM*. 2003;348(26), 2635–2645.
- ⁶ Asch SM, Kerr EA, Joan K, Adams J, Setodji CM, Malik S, McGlynn EA. Who is at greatest risk for receiving poor-quality health care? *NEJM*. 2006; 354(11), 1147-1156.
- ⁷ Mangione-Smith R, DiCristofaro AH, Setodji CM, Keesey J, Klein DJ, Adams JL, Schuster MA, McGlynn EA. The quality of ambulatory care delivered to children in the United States. *N Engl J Med*. 2007; 357, 1515-23.
- ⁸ President's Advisory Commission Consumer Protection and Quality in the Health Care Industry. *Quality First: Better Health Care for All Americans*. Final report to the President of the United States. Washington, DC: Author, 1998.
- ⁹ Institute of Medicine. *Priority Areas for National Action: Transforming Health Care Quality*. Washington, DC: National Academies Press, 2003.
- ¹⁰ National Priorities Partnership (NPP). *National Priorities and Goals*. Washington, DC: Author, November 2008. Retrieved October 20, 2009, from <http://www.nationalprioritiespartnership.org/Home.aspx>
- ¹¹ McDonald KM, Sundaram V, Bravata DM, Lewis R, Lin N, Kraft S, McKinnon M, Paguntalan H, Owens DK. Care Coordination. Vol 7 of: Shojania KG, McDonald KM, Wachter RM, Owens DK, editors. *Closing the Quality Gap: A Critical Analysis of Quality Improvement Strategies*. Technical Review 9 (Prepared by the Stanford University-UCSF Evidence-based Practice Center under contract 290-02-0017). AHRQ Publication No. 04(07)-0051-7. Rockville, MD: Agency for Healthcare Research and Quality. June 2007.
- ¹² NQF. NQF-Endorsed Definition and Framework for Measuring Care Coordination, Washington, DC: NQF, May 2006.
- ¹³ Naylor MD. Transitional care of older adults. *Annu Rev Nurs Res*. 2003;20:127-147.
- ¹⁴ Coleman EA, Boulton C. Improving the quality of transitional care for persons with complex needs. *JAGS*. 2003;51:556-557.
- ¹⁵ Naylor MD, Aiken L, Kurtzman ET. *Nursing's Contributions to Care Coordination and Transitional Care: State of the Science*. RWJF Nursing Research Network Working Paper. Unpublished, 2009.
- ¹⁶ Naylor MD, Brooten DA, Campell RL, Maislin G, McCauley KM, Schwartz JS. Transitional care of older adults hospitalized with heart failure: a randomized, controlled trial. *JAGS*. 2004;52:675-684.
- ¹⁷ Affordable Care Act, Pub. L. No. 111-148, § Sec. 10303 (2010).
- ¹⁸ National Quality Forum. *Endorsing Preferred Practices and Performance Measures for Measuring and Reporting Care Coordination*. Washington, DC: Author. Last accessed August 3, 2010 at http://www.qualityforum.org/projects/care_coordination.aspx.
- ¹⁹ Dudley RA, Frolich A, Robinowitz D, Talavera J, Broadhead P, Luft H. Strategies to support quality-based purchasing: a review of the evidence. Rockville (MD): Agency for Healthcare Research and Quality; 2004.

²⁰ Christianson JB, Leatherman S, Sutherland K. Lessons from evaluations of purchaser pay-for-performance programs: a review of the evidence. *Med Care Res Rev.* 2008;65(6 Suppl):5S-35S.

²¹ Rosenthal MB, Frank RG. What is the empirical basis for paying for quality in health care? *Med Care Res Rev.* 2006;63:135-157.

²² Mehrotra A, Damberg CL, Sorbero MES, Teleki SS. Pay for performance in the hospital setting: what is the state of evidence? *Am J Med Qual.* 2009;24:19-28.

²³ Institute of Medicine. *Rewarding Provider Performance.* Washington, DC: National Academies Press, 2007.

²⁴ National Quality Forum (NQF). Composite Measure Evaluation Framework and National Voluntary Consensus Standards for Mortality and Safety—Composite Measures: A Consensus Report. Washington, DC: NQF; 2009.

²⁵ National Priorities Partnership (NPP). *National Priorities and Goals.* Washington, DC: Author, November 2008.

²⁶ Redhead CS. Health Information Technology for Economic and Clinical Health Act. Washington, DC: Congressional Research Service, February 23, 2009.

APPENDIX C
NATIONAL PRIORITIES PARTNERSHIP
CARE COORDINATION
ACTION PLAN

National Priorities Partnership Care Coordination Action Plan

Drivers of Change					
	Accreditation, Certification, & Professional Development	Performance Measurement	Health Information Technology	Research and Quality Improvement	Performance-Based Payment & Public Reporting
Purpose	<p>Improve workforce competencies to ensure that healthcare professionals have the expertise to coordinate care for complex patients.</p>	<p>Enhance the sufficiency of performance measures that address care coordination and transitional care.</p>	<p>Expand system capacity, including research, quality improvement, and health information technology, to improve providers' and practitioners' abilities to deliver care that is highly coordinated.</p>		<p>Redesign payment policies to drive improvement in care coordination and transitional care and promote accountability for care coordination and transitional care.</p>
Workshop Recommended Actions	<ul style="list-style-type: none"> ● Enhance the content and delivery of health professionals' education and the underlying certification and licensure systems that will reinforce the provision of care that is well coordinated.* ● Develop competencies for the use and interpretation of data, person-centered and team-based care. ● Examine roles and competencies of key staff involved in coordination to allow health professionals to practice to the full extent of their education and training across providers and states. 	<ul style="list-style-type: none"> ● Achieve consensus on what constitutes avoidable, preventable, or unplanned readmissions.* ● Develop population-based readmission measures, e.g., unadjusted community measures to assess how communities are doing in improving the health of their population. ● Prioritize and operationalize core elements of care coordination structures, i.e., key elements across preferred practice structures. ● Applying NQF's Composite Measure Evaluation Framework, achieve consensus on and endorse composite measures that reflect the adequacy of care coordination and its five domains.* ● Identify and consider for endorsement additional measures that reflect high-value care coordination and transitional care.* ● Develop measures that reflect the care coordination experienced by patients and families. 	<ul style="list-style-type: none"> ● Under HITECH, support providers' and healthcare practitioners' implementation of meaningful use objectives and measures that address care coordination and transitional care and develop consensus on and endorsement of a set of expanded "meaningful use" objectives and measures that reflect all the domains of care coordination.* ● Identify and track high-risk patients via a "virtual registry" that connects to health information exchanges (HIEs) to measure health status over time and prompt appropriate interventions. ● Promote widespread adoption of innovative telehealth interventions. ● Ensure standard data elements for transferring information and linking data systems. ● Establish systems for feed-forward and feedback of data, e.g., embedding patient-reported data with diagnostic data to create personalized care plans and to link microsystem, health system, and community-level data. 	<ul style="list-style-type: none"> ● Accelerate the testing and application of effective care coordination and transitional care interventions directed toward high-risk, vulnerable populations most likely to benefit from them.* ● Conduct translational research on the application of interventions in different settings—including healthcare delivery and community settings. ● Develop specific tools and resources to ease providers' implementation of NQF-endorsed transitional care preferred practices and other evidence-based transitional care approaches.* ● Identify key components of good care coordination, and of a longitudinal care plan that transcends settings, travels with the patient, and is patient- not provider-centric. ● Promote the spread of successful tools, models, and interventions between the public and private sector, e.g., VHA software that allows nurse case managers to track high-risk patients. ● Identify and map national care coordination activities and areas of convergence to avoid duplication of effort. 	<ul style="list-style-type: none"> ● Better align eligibility criteria under Medicare and Medicaid and, where possible, the Children's Health Insurance Plan (CHIP).* ● Align payment among payers to reinforce the value of transitional care and link to high-quality care coordination and transitional care.* ● Establish incentives for nonclinical care coordination services, team-based care, and population management. ● Establish differential reimbursement for completing core components of transition/discharge, and for health professionals demonstrating core competencies. ● Reimburse longitudinal care planning that begins upon entry into the health system (shift away from discharge planning). ● Publicly report comparative performance results for hospital readmissions and patients' and family caregivers' perceptions of the care experience at the provider- and practitioner-level.* ● Include CTM-3 in CAHPS tool and require public reporting.
Implementers	<ul style="list-style-type: none"> ● Government (national, state, local) ● Healthcare systems ● Employers ● Universities ● Accreditation and certification bodies 	<ul style="list-style-type: none"> ● Government (national, state, local) ● Healthcare systems ● Public health organizations ● Individuals ● Measure developers 	<ul style="list-style-type: none"> ● Government (national, state, local) ● Healthcare system ● Employers ● Professional societies ● HIT Community 	<ul style="list-style-type: none"> ● Government agencies ● Healthcare providers ● Professional societies ● Quality Improvement Organizations ● Employers ● Research Community 	<ul style="list-style-type: none"> ● Government (national, state, local) ● Healthcare system ● Employers ● Health plans

*Naylor/Kurtzman White Paper Recommendation