

Care Coordination Measures Atlas

Updated June 2014



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Quality Indicators

Care Coordination Measures Atlas

Updated June 2014

Prepared for:

Agency for Healthcare Research and Quality
U.S. Department of Health and Human Services
540 Gaither Road
Rockville, MD 20850
www.ahrq.gov

Contract No. HHS A290-2010-00005I

Prism/Task Order No. HHS A29032002T; Task Order #2

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Suggested Citation:

McDonald KM, Schultz E, Albin L, Pineda N, Lonhart J, Sundaram V, Smith-Spangler C, Brustrom J, Malcolm E, Rohn, L. and Davies, S. Care Coordination Atlas Version 4 (Prepared by Stanford University under subcontract to American Institutes for Research on Contract No. HHS A290-2010-00005I). AHRQ Publication No. 14-0037- EF. Rockville, MD: Agency for Healthcare Research and Quality. June 2014.

No investigators have any affiliations or financial involvement (e.g., employment, consultancies, honoraria, stock options, expert testimony, grants or patents received or pending, or royalties) that conflict with the material presented in this report.
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Acknowledgments

For their contributions to the original *Atlas* development, we thank Janice Genevro, David Meyers and Mamatha Pancholi of the Agency for Healthcare Research and Quality (AHRQ) for their support, insightful comments, and enthusiasm. We thank Chris Stave for his expert guidance on literature and measures searches. We also thank Kathan Volrath for her thoughtful feedback on the framework development and Tammy Chapman for her assistance in preparing the *Atlas*. We thank members of our advisory panels for sharing their time and expertise to improve this work: Karen Adams, Melissa Affronti, Richard Antonelli, Anne-Marie Audet, Helen Burstin, Carol Cain, Eric Coleman, Susan Edgman-Levitan, Jinnet Fowles, Mark Friedberg, Adele Gorges, Tom Jewell, Sally Kraft, Gerri Lamb, Denise Love, Dana Safran, Sarah Scholle, Sara Singer, Vincenza Snow, Shoshana Sofaer, Scott Stumbo, Bert Vrijhoef, Eric Weil, Jonathan Weiner, and Daniel Wolfson. We also thank users who reviewed the *Atlas* and provided feedback: Steve Clauser, Bruce Finke, David Haggstrom, Paul Han, Diana Ordin, Sharon Pilus, and Kim Thompson. While their input guided and improved the *Atlas*, they are not responsible for the contents of the final product. We thank Joanne Abed and Marcía Treece, both of Battelle, for their editorial, design, and production assistance.

For their contributions to the *Atlas* update, we again thank Janice Genevro and David Meyers of AHRQ for their continued support, insight, and enthusiasm. We thank Jodie Ha for her assistance in updating the *Atlas* and Sarah Scholle, Aldo Tinoco and Susan Heil for their review of drafts of the updated *Atlas*. We also thank Alexandra Sharnoff Slade and the publishing team at the American Institutes for Research for their editorial, design, and production assistance. Finally, we thank all those who contributed to the original *Atlas*, upon which this update builds, and the many measure developers who cooperated with us in preparing information about their measurement tools.

Jumpstart Guide

Follow these steps to identify existing measures of care coordination that may meet your needs.

Step 1: Review [Care Coordination Measurement Framework](#)

We organized all measures contained within this *Atlas* according to domains of this framework. A description of the framework follows the figure. Use the § symbol to quickly return to this page and continue with Step 2.

Step 2: Read [Framework Domain Definitions](#)

We categorized measures by linking them to framework domains. Pay particular attention to domains that pertain to your areas of interest.

Step 3: Examine [Care Coordination Measure Mapping Table](#)

The measure mapping table is used to link measures to framework domains. A quick review of the table structure will help you during Step 4.

Step 4: Follow [Measure Selection Guide](#)

This guide will walk you through the steps of identifying the domains pertinent to your interests and identifying relevant measures.

Step 5: Review [Profiles of Identified Measures](#)

Once you have identified measures that may meet your needs, review details of measure development, testing, and application in the Detailed Measure Profiles section.

For additional background information about the Care Coordination Measures *Atlas*, please refer to [Chapter 1: Background](#).

For additional context and definitions related to care coordination, please refer to [Chapter 2: What Is Care Coordination?](#)

For additional discussion of emerging trends in care coordination measurement, please refer to [Chapter 4](#), newly added to the updated *Atlas*.

To quickly return to this page and continue with the next step in the Jumpstart Guide, click on the § symbol. It will appear on the last page of each section, in the bottom left corner.

For users viewing the PDF version of the *Atlas* with Adobe reader software, you can also navigate through the document by clicking on any title found in the Bookmarks Pane to the left of your screen. Another option is to use the Page Pane to the left of your screen and click on the page to which you would like to navigate.

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Chapter 1. Background

Investigation into care coordination definitions, practices, and interventions has recently been sponsored by several national organizations including the Agency for Healthcare Research and Quality (AHRQ), the Institute of Medicine, and the American College of Physicians, among others. While evidence is starting to build about the mechanisms by which care coordination contributes to patient-centered high-value, high-quality care, the health care community is currently struggling to determine how to measure the extent to which this vital activity is or is not occurring.

An AHRQ Evidence Report¹ published in 2007 demonstrated that systematic reviews of interventions to improve care coordination used a broad range of measures, with almost none that focused specifically on the structures, processes, or intermediate outcomes related to coordination. Most reports synthesized clinical and utilization measures. While these are the ultimate critical endpoints, the paucity of care-coordination-specific measurement results in limited insight about the exact mechanisms that produce better outcomes.

In response, AHRQ launched a research project with the following aim:

- To develop an atlas to help evaluators identify appropriate measures for assessing care coordination interventions in research studies and demonstration projects, particularly those measures focusing on care coordination in ambulatory care.

In developing this *Care Coordination Measures Atlas* (henceforth, the *Atlas*), we investigated currently available care coordination measurement approaches based on multiple data sources (e.g., electronic health record systems, consumer surveys, and databases of administrative claims), review of AHRQ Health Information Technology portfolio projects, information from national organizations on their care coordination measurement activities, input from expert and stakeholder/informant panels, and a comprehensive literature search.

The *Atlas* includes measures of patient and caregiver experiences with care coordination, as well as experiences of health care professionals and health system managers. To provide context to *Atlas* users and facilitate presentation of care coordination measurement approaches, we developed a [care coordination measurement framework](#).

¹ McDonald KM, Sundaram V, Bravata DM, et al. Care coordination. In: Shojania KG, McDonald KM, Wachter RM, and Owens DK, eds. Closing the quality gap: A critical analysis of quality improvement strategies. Technical Review 9 (Prepared by Stanford-UCSF Evidence-Based Practice Center under contract No. 290-02-0017). Vol. 7. Rockville, MD: Agency for Healthcare Research and Quality, June 2007. AHRQ Publication No. 04(07)-0051-7.

Purpose

The *Atlas* aims to support the field of care coordination measurement by:

- Providing a list of existing measures of care coordination.
- Organizing those measures along two dimensions (domain and perspective) in order to facilitate selection of care coordination measures by *Atlas* users.
- Developing a framework for understanding care coordination measurement, incorporating elements from other proposed care coordination frameworks whenever possible. The framework is designed to support current and future development of this field, while remaining flexible so that it may be adapted as the field matures.

Intended Audiences

The *Atlas* is designed with several key audiences in mind:

- Evaluators of interventions or demonstration projects that aim to improve care coordination (either as a primary or secondary goal).
- Anyone wishing to evaluate the practice of care coordination or its effects outside the context of interventions or demonstration projects, including quality improvement practitioners, recognizing a likely need for this audience to have some technical support from measurement experts or researchers in using the material presented in the *Atlas*.
- Researchers studying care coordination.

Scope

Selection of care coordination measures focused on:

- Those that could reasonably apply to the ambulatory care setting (e.g., a measure of care coordination focused on the transition from inpatient to outpatient care would be eligible for the *Atlas* but not one focused on care processes only applicable to a single hospital stay). The *Atlas* focuses on environments where patients already have access to health care.
- Structural measures hypothesized to reflect better coordination (e.g., presence of a patient registry with an algorithm that identifies complex patients with significant coordination needs).
- Process measures hypothesized to reflect better coordination (e.g., percent of patients asked to review their medication list during a primary care office visit).
- Intermediate outcomes of coordination (e.g., percent of test results communicated to patients within a specific timeframe).
- Those that have been tested with evidence of some valid measurement properties using National Quality Forum (NQF) standards and AHRQ Quality Indicators (QI) program methods.
- Those that at a minimum were developed in association with a logic model that has evidence of causal linkages between the activities measured and outcomes desired.
- Those that have been field tested and have shown feasibility or have had structured expert panel face validity testing. Some measures may be more helpful for research or quality improvement purposes, even if not feasible for performance measurement.
- Measures within the public domain.

The *Atlas* does not include commonly known endpoints, which evaluators are likely to identify easily without the aid of the *Atlas*. These endpoints reflect the Institute of Medicine goals for quality of care—safety, timeliness, effectiveness, efficiency, equity, and patient-centeredness. Specific examples of endpoints used in care coordination studies to date include:

- Emergency room visits
- Hospital readmissions
- Disease-specific hospital admissions
- Mortality
- Disease-specific mortality
- Short-term clinical outcomes (e.g., glycated hemoglobin levels for diabetic patients)
- Functional status (e.g., for congestive heart failure patients)
- Quality of life
- Other patient outcomes (e.g., missed school days for children due to illness)
- Treatment adherence
- Service adherence (e.g., remain in contact with services for mentally ill patients)

***Atlas* Update**

Since the original *Atlas* was published in December 2010, interest in care coordination has continued to grow, and many new coordination measures have been developed and published. This updated version of the *Atlas* contains some of those new measures, with a particular focus on those that reflect coordination efforts within the primary care setting. Primary care was selected as a focus given its often central role in coordinating care across settings, particularly as accountable care organization and patient-centered medical home delivery models are more widely implemented. Furthermore, this focus aligns with the original scope of the *Atlas* that centered on measures that might reasonably be applied in the ambulatory care setting. Measures selected for this update are also applicable to broad groups of patients, such as the general population or patients with any chronic condition, rather than measures tailored to individuals with a single disease or condition.

This update also contains a new section on emerging trends in care coordination measurement. It focuses, in particular, on measures that utilize data from electronic health records (EHR), in addition to a brief discussion of approaches based on social network analysis. Use of EHRs both to carry out and to measure care coordination is central to the Centers for Medicare and Medicaid Services' (CMS) EHR incentive programs. The Medicaid EHR Incentive Program and the Medicare EHR Incentive Program offer additional payments to eligible professionals and hospitals that can attest to and implement Meaningful Use of EHRs through reporting of measures established by the Office of the National Coordinator (ONC). Implementation of that program was just beginning at the time the original *Atlas* was published; many new EHR-based measures of care coordination have been developed in the intervening years. This update reviews and discusses those measures, including those used for Meaningful Use.

An Evolving Field

At the time it was published, the original *Atlas* represented the emerging field of care coordination and care coordination measures. This updated version of the *Atlas* reflects the tremendous growth that has occurred in this field in the intervening three years, and its continuing rapid evolution. Much of the ambiguity in definitions of care coordination and lack of consensus around a single conceptual model that framed the original *Atlas* work still exists today. Indeed, the proliferation of measure development, improvement initiatives, and discussion around care coordination may have heightened, rather than clarified, this ambiguity. But this growth in interest also represents important progress.

The *Atlas* aims to systematically map the particular aspects of care coordination measured by each of its included measures, distinguishing evaluations of coordination processes from other processes of care, to the extent that logistical versus clinical processes can actually be disentangled. The scope of the *Atlas* is purposefully broad in an attempt not to limit, but instead to stimulate, further thinking about which measures are most salient and useful to those working to improve the coordination of care. By adopting an initially broad definition of care coordination to identify measures and then mapping measures at the level of specific coordination activities (the framework domains) and individual instrument items (i.e., survey questions), the *Atlas* provides users an opportunity for flexibility in how narrowly or broadly to assess coordination.

The *Atlas* conceptual framework is designed to evolve with the field. However, given the lack of a broader consensus and the continued rapid expansion of the care coordination field, for this update we did not see a rationale for any modifications to the *Atlas* framework or the way in which its domains were mapped onto measures. Rather, in this section we discuss several challenges highlighted by the experience of developing and updating the *Atlas*, and in so doing hope to stimulate further advances in useful tools for evaluating care coordination.

Care vs. Coordination

One challenge encountered throughout the care coordination field is the difficulty in distinguishing care coordination from other aspects or processes of care. Care coordination is a complex concept, intertwined with many other concepts relating to quality, delivery, and organization of care. In its broadest sense, almost all aspects of health care and its delivery can be understood as part of care coordination. A very narrow definition, on the other hand, might encompass only a few of the domains included in the measurement framework presented in this report.

Throughout development of the *Atlas*, conceptualization of its framework of coordination domains, and application of the framework while mapping measures, we have recognized the lack of a bright line between coordination and other aspects of care. Particularly challenging were decisions about whether to include within the scope of care coordination concepts such as access to care (availability of after-hours care, access to medical insurance, transportation to locations of care, ability to understand and navigate the health care system), continuity of care (a continuous relationship with a single provider over time, on-going familiarity and trust), and shared decisionmaking (engaging patients in discussions of treatment options, matching

communication style to patient preferences). Each of these aspects of care has a well-established literature of its own, thereby interpreted often as distinct from coordination. But each can also involve some coordination-like processes in certain situations. Also challenging were decisions about how to map measures of communication and care planning, activities involved in many other aspects of care beyond just coordination. When these were considered coordination and when they were viewed as activities employed in the execution of other care processes depended primarily on the context of the measure.

Ultimately, this *Atlas* reflects an understanding of care coordination as a process that occurs most often during and in response to care transitions (e.g., transitions across settings, within care teams, among care participants, between encounters or care episodes, as patient needs change) and that involves activities or approaches that bridge gaps arising from those transitions. Applying this understanding required judgment, consideration of measure context, and often discussions among measure reviewers to debate grey areas, but was ultimately a useful lens through which to view and categorize the measures identified through this review.

While in some situations the distinction between care and care coordination may seem semantic, it becomes important when trying to understand how care coordination as a process relates to outcomes. Achieving the goal of delivering high-quality, high-value, patient-centered care to all patients requires a multifaceted approach. Each aspect of care that contributes to this ultimate goal must be understood in its own right, as well as how the many different processes of care interact synergistically to impact quality, cost, and patient satisfaction. Care coordination has been suggested as one such aspect of care, but its role and impact cannot be understood without first distinguishing it from other aspects of high-quality care, such as access, continuity and shared decisionmaking. Such an understanding is crucial for establishing an evidence base around care coordination and ultimately gaining insight about particular coordination activities that can improve outcomes. Distinguishing care coordination from other processes of care is also important in order to keep the scope of evaluations manageable, whether they are undertaken for quality improvement, accountability or research purposes. For example, undertaking an evaluation of all aspects of communication within a particular organization would likely be a daunting task, and one of questionable utility given the lack of focus. In contrast, an evaluation of all communication related to patient referrals would be far more manageable in scope (although potentially still quite ambitious) and likely to yield more actionable results in terms of useful ongoing measurement and intervention opportunities.

The *Atlas* framework represents just one stage in an evolving understanding of care coordination. It reflects decisions made at the time the *Atlas* was initially developed, decisions oriented to measurement applications, and decisions informed by discussions among experts, stakeholders, team members and collaborators. These discussions have continued as the *Atlas* and its framework have been applied to other activities, including this update. We hope that the *Atlas* continues to stimulate discussion, and that additional voices join in the process of defining, measuring, and improving care coordination, and ultimately the quality of care delivered to all patients.

§

Chapter 2. What Is Care Coordination?

Care coordination means different things to different people; no consensus definition has fully evolved. A recent systematic review identified over 40 definitions of the term ‘care coordination.’² The systematic review authors combined the common elements from many definitions to develop one working definition for use in identifying reviews of interventions in the vicinity of care coordination and, as a result, developed a purposely broad 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.*” For some purposes, they noted that other definitions may be more appropriate. This lack of consensus is perhaps not surprising given the many different participants involved in coordinating care.

In this section we provide a visual definition (see [Figure 1](#)) and scenarios to help illustrate care coordination in the absence of a consensus definition. This visual definition may be helpful to some *Atlas* users, and less so to others. Several additional illustrations of care coordination are presented in a recent monograph on quality of cancer care.³

The *central goal* of care coordination is shown in the middle of the diagram. The *colored circles* represent some of the possible participants, settings, and information important to care pathways and workflow. The *blue ring* that connects the *colored circles* is **CARE COORDINATION**—namely, anything that bridges gaps (white spaces) along the care pathway (i.e., care coordination activities or broad approaches hypothesized to improve coordination of care). For a given patient at a given point in time, the bridges or *ring* need to form across the applicable *circles*, and through any *gaps* within a given circle, to deliver coordinated care.

Perspectives on Care Coordination

Successes and failures in care coordination will be perceived (and may be measured) in different ways depending on the perspective: patient/family, health care professional(s), or system representative(s). Consideration of views from these three potentially different perspectives is likely to be important for measuring care coordination comprehensively.

Patient/Family Perspective. Care coordination is any activity 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.⁴

² McDonald KM, Sundaram V, Bravata DM, et al. Care coordination. In: Shojania KG, McDonald KM, Wachter RM, and Owens DK, eds. Closing the quality gap: A critical analysis of quality improvement strategies. Technical Review 9 (Prepared by Stanford-UCSF Evidence-Based Practice Center under contract No. 290-02-0017). Vol. 7. Rockville, MD: Agency for Healthcare Research and Quality, June 2007. AHRQ Publication No. 04(07)-0051-7.

³ Taplin SH, Rodgers AB. Toward improving the quality of cancer care: Addressing the interfaces of primary and oncology-related subspecialty care. *J Natl Cancer Inst Monogr* 2010;40:3-10.

⁴ Adapted from information published by the National Quality Forum.

Patients, their families, and other informal caregivers experience failures in coordination particularly at points of transition. Transitions may occur between health care entities (see definition under “additional terms”) and over time and are characterized by shifts in responsibility and information flow. Patients perceive failures in terms of unreasonable levels of effort required on the part of themselves or their informal caregivers in order to meet care needs during transitions among health care entities.

Health Care Professional(s) Perspective. Care coordination is a patient- and family-centered, team-based activity designed to assess and meet the needs of patients, while helping them navigate effectively and efficiently through the health care system. Clinical coordination involves determining where to send the patient next (e.g., sequencing among specialists), what information about the patient is necessary to transfer among health care entities, and how accountability and responsibility is managed among all health care professionals (doctors, nurses, social workers, care managers, supporting staff, etc.). Care coordination addresses potential gaps in meeting patients’ interrelated medical, social, developmental, behavioral, educational, informal support system, and financial needs in order to achieve optimal health, wellness, or end-of-life outcomes, according to patient preferences.⁵

Health care professionals notice failures in coordination particularly when the patient is directed to the “wrong” place in the health care system or has a poor health outcome as a result of poor handoffs or inadequate information exchanges. They also perceive failures in terms of unreasonable levels of effort required on their part in order to accomplish necessary levels of coordination during transitions among health care entities.

System Representative(s) Perspective. Care coordination is the responsibility of any system of care (e.g., “accountable care organization [ACO]”) to deliberately integrate personnel, information, and other resources needed to carry out all required patient care activities between and among care participants (including the patient and informal caregivers). The goal of care coordination is to facilitate the appropriate and efficient delivery of health care services both within and across systems.

Failures in coordination that affect the financial performance of the system will likely motivate corrective interventions. System representatives will also perceive a failure in coordination when a patient experiences a clinically significant mishap that results from fragmentation of care.⁶

⁵ Adapted from information published in: Antonelli RC, McAllister JW, Popp J. Making care coordination a critical component of the pediatric healthcare system: A multidisciplinary framework. New York: The Commonwealth Fund; 2009.

⁶ Adapted from information published in: McDonald KM, Sundaram V, Bravata DM, et al. Care coordination. In: Shojania KG, McDonald KM, Wachter RM, and Owens DK, eds. Closing the quality gap: A critical analysis of quality improvement strategies. Technical Review 9 (Prepared by Stanford-UCSF Evidence-Based Practice Center under contract No. 290-02-0017). Rockville, MD: Agency for Healthcare Research and Quality, June 2007. AHRQ Publication No. 04(07)-0051-7.

Additional Terms. Definitions for additional terms relating to care coordination are presented below.

Health care entities. Health care entities are discrete units of the health care system that play distinct roles in delivery of care. The context and perspective will determine who precisely those units are. For example:

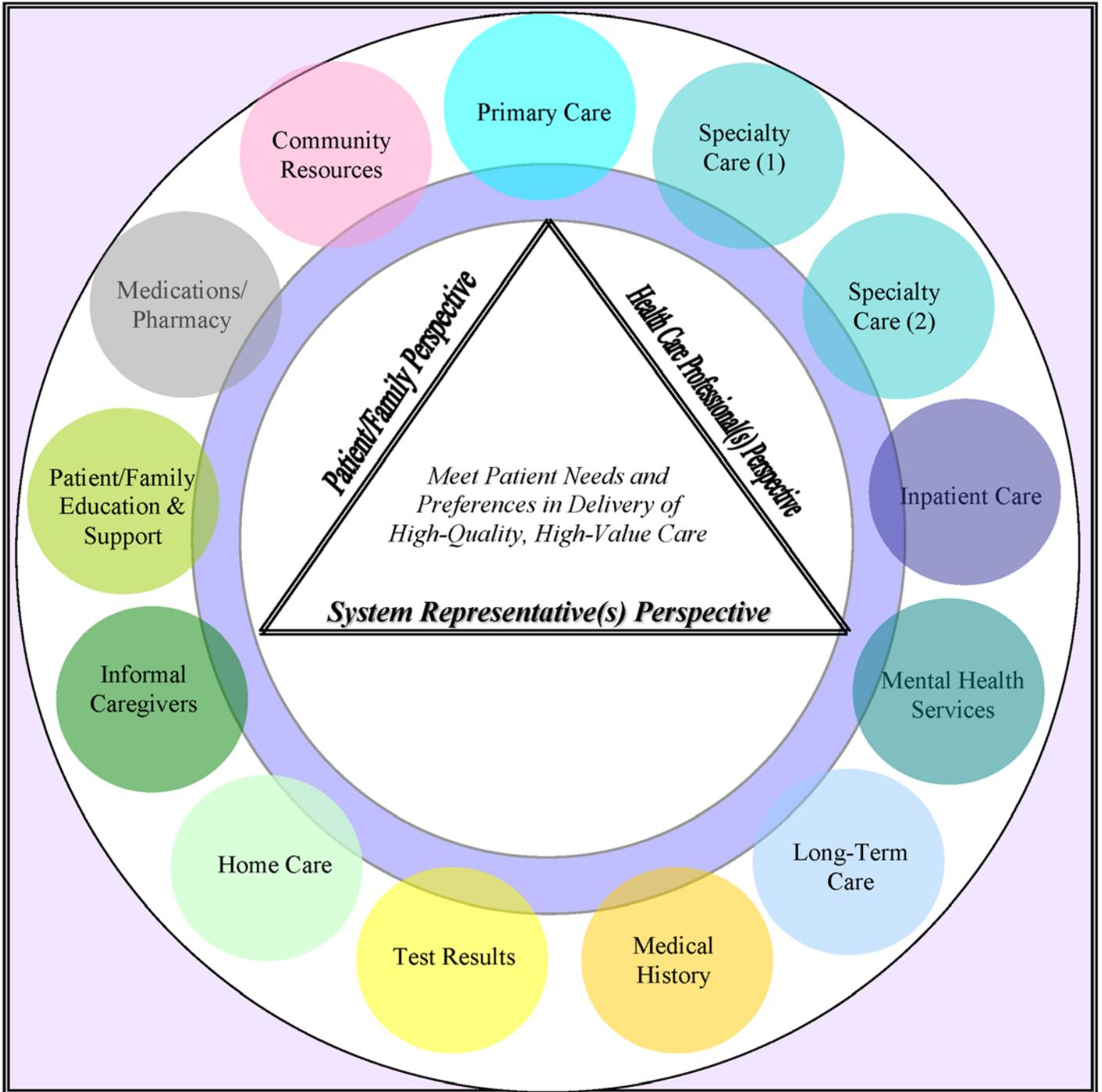
- From a patient and family perspective, entities are likely to be individual health care providers with whom the patient and family interact, such as nurses, physicians, and support staff.
- From a health care professional perspective, entities may be individual members of a work group, such as nurses, physicians, and support staff in a particular clinic. Or they may be provider groups, such as a primary care practice, specialty practice, or urgent care clinic.
- From a system representative(s) perspective, entities will likely be groups of providers acting together as a unit, such as medical units in a hospital, hospitals as a whole, specialty clinics within an integrated system, or different clinical settings within the health care system overall (i.e., ambulatory care, inpatient care, emergency care).

Points of transition. Transitions occur when information about or accountability/responsibility for some aspect of a patient's care is transferred between two or more health care entities, or is maintained over time by one entity. Often information and responsibility are (or should be) transferred together.

It may be useful to think about two broad categories of transitions:

1. *Transitions between entities of health care system.* Information transfer and/or responsibility shifts:
 - Among members of one care team (receptionist, nurse, physician)
 - Between patient care teams
 - Between patients/informal caregivers and professional caregivers
 - Across settings (primary care, specialty care, inpatient, emergency department)
 - Between health care organizations
2. *Transitions over time.* Information transfer and/or responsibility shifts:
 - Between episodes of care (i.e., initial visit and followup visit)
 - Across lifespan (e.g., pediatric developmental stages, women's changing reproductive cycle, geriatric care needs)
 - Across trajectory of illness and changing levels of coordination need

Figure 1. Care Coordination Ring



The *central goal* of care coordination is shown in the middle of the diagram. The *colored circles* represent some of the possible participants, settings, and information important to the care pathway and workflow. The *blue ring* connecting the *colored circles* is **CARE COORDINATION**—namely, anything that bridges gaps (white spaces) along the care pathway (i.e., care coordination activities or broad approaches hypothesized to improve coordination of care. [See Figure 2.](#)) Successes and failures

in care coordination will be perceived (and may be measured) in different ways depending on the perspective: *patient/family*, *health care professional(s)*, or *system representative(s)*.

Example Scenarios

The level of care coordination need will increase with greater system fragmentation (e.g., wider gaps between circles), greater clinical complexity (e.g., greater number of circles on ring), and decreased patient capacity for participating effectively in coordinating one's own care, as illustrated by the following scenarios. The level of need is not fixed in time, nor by patient. Assessment of level of care coordination is likely important to tailor interventions appropriately and to evaluate their effectiveness.

Scenario 1. Mrs. Jones is a healthy 55-year-old woman. She visits her primary care provider, Dr. I. Care, once a year for a routine physical. Dr. Care practices in a primary care clinic with an electronic medical record (EMR) system and on-site laboratory and radiology services. At Mrs. Jones' annual physical, Dr. Care ordered several blood tests to evaluate her cholesterol and triglyceride levels. Mrs. Jones also mentioned that she is having lingering pain in her ankle after a previous sprain. Dr. Care ordered an x-ray. After receiving the blood test results via the electronic medical record system, Dr. Care sees that Mrs. Jones' cholesterol is high and prescribes a medication. She submits the prescription directly to the pharmacy via a link from the EMR. She receives electronic notification that the x-ray does not show any fracture. She calls Mrs. Jones to refer her to a nearby physical therapy practice. Mrs. Jones picks up her medication from the pharmacy and calls the physical therapist to schedule an appointment.

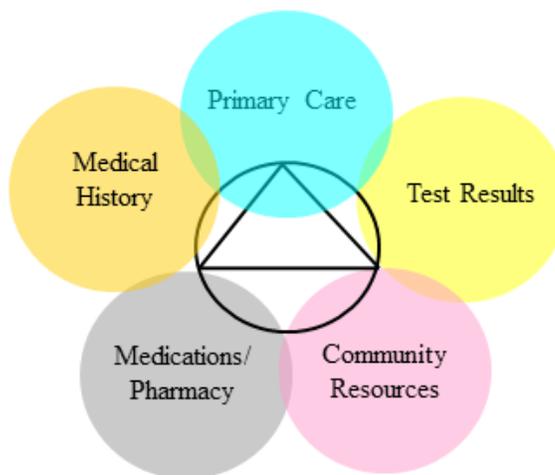
SCENARIO 1. VISUAL

Complexity: Low

Fragmentation: Low

Patient Capacity: High

Care Coordination Need: Minimal



Scenario 2. Mr. Andrews is a 70-year-old man with congestive heart failure and diabetes. He uses a cane when walking and recently has had some mild memory problems. His primary care physician, Dr. Busy, is part of a small group physician practice focused on primary care. The primary care clinic includes a laboratory, but they refer their radiology tests to a nearby radiology center. Mr. Andrews also sees Dr. Kidney, a nephrologist, and Dr. Love, a cardiologist. Both specialists are part of a specialty group practice that is not affiliated with Dr. Busy's clinic. Their specialty practice includes an on-site laboratory, radiology clinic, and pharmacy. Mr. Andrews has prescriptions filled at the specialty clinic pharmacy after his appointments with Drs. Kidney and Love and picks up medications prescribed by Dr. Busy at a pharmacy near his home. Mr. Andrews has a daughter who lives nearby but works full time. Because he has trouble getting to the grocery store to do his shopping, he receives meals at his home 5 days a week through a meals-on-wheels senior support service. His daughter has hired a caregiver to help Mr. Andrews with household tasks for two hours three days a week.

During a recent meal delivery, the program staffer noticed that Mr. Andrews seemed very ill. He called an ambulance, and Mr. Andrews was taken to the emergency department. There he was diagnosed with a congestive heart failure exacerbation and was admitted. During his initial evaluation, the admitting physician asked Mr. Andrews about which medications he was taking, but the patient could not recall what they were or the doses. The physician on the hospital team contacted Dr. Busy, who provided a medical history and general list of medications. Dr. Busy noted that Mr. Andrews may have had dosing changes after a recent appointment with Dr. Love. In addition, Dr. Busy noted that Mr. Andrews may be missing medication doses because of his forgetfulness. He provided the hospital team with contact information for Drs. Love and Kidney. He also asked that a record of Mr. Andrews' hospital stay be sent to his office upon his discharge.

Mr. Andrews was discharged from the hospital one week later. Before going home, the nurse reviewed important information with him and his daughter, who was taking him home. They went over several new prescriptions and details of a low-salt diet. She told him to schedule a followup appointment with his primary care physician within 2 days and to see his cardiologist in the next 2 weeks. Mr. Andrews was very tired so his daughter picked up the prescriptions from a pharmacy near the hospital, rather than the one Mr. Andrews usually uses.

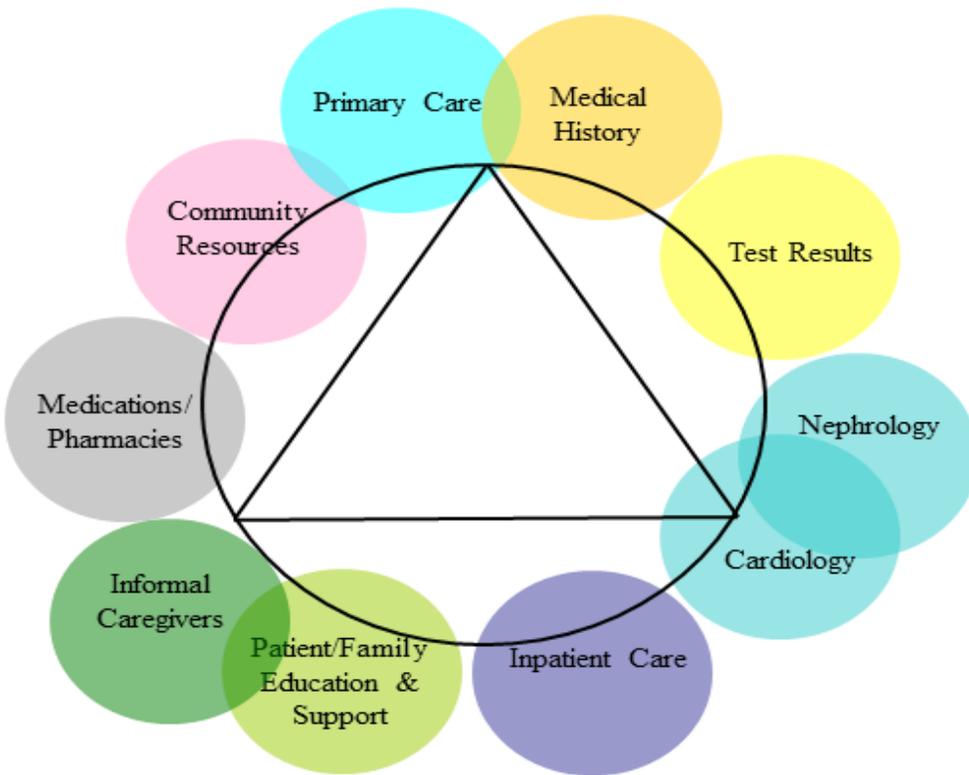
SCENARIO 2: VISUAL

Complexity: High

Fragmentation: Moderate

Patient Capacity: Low

Care Coordination Need: Extensive

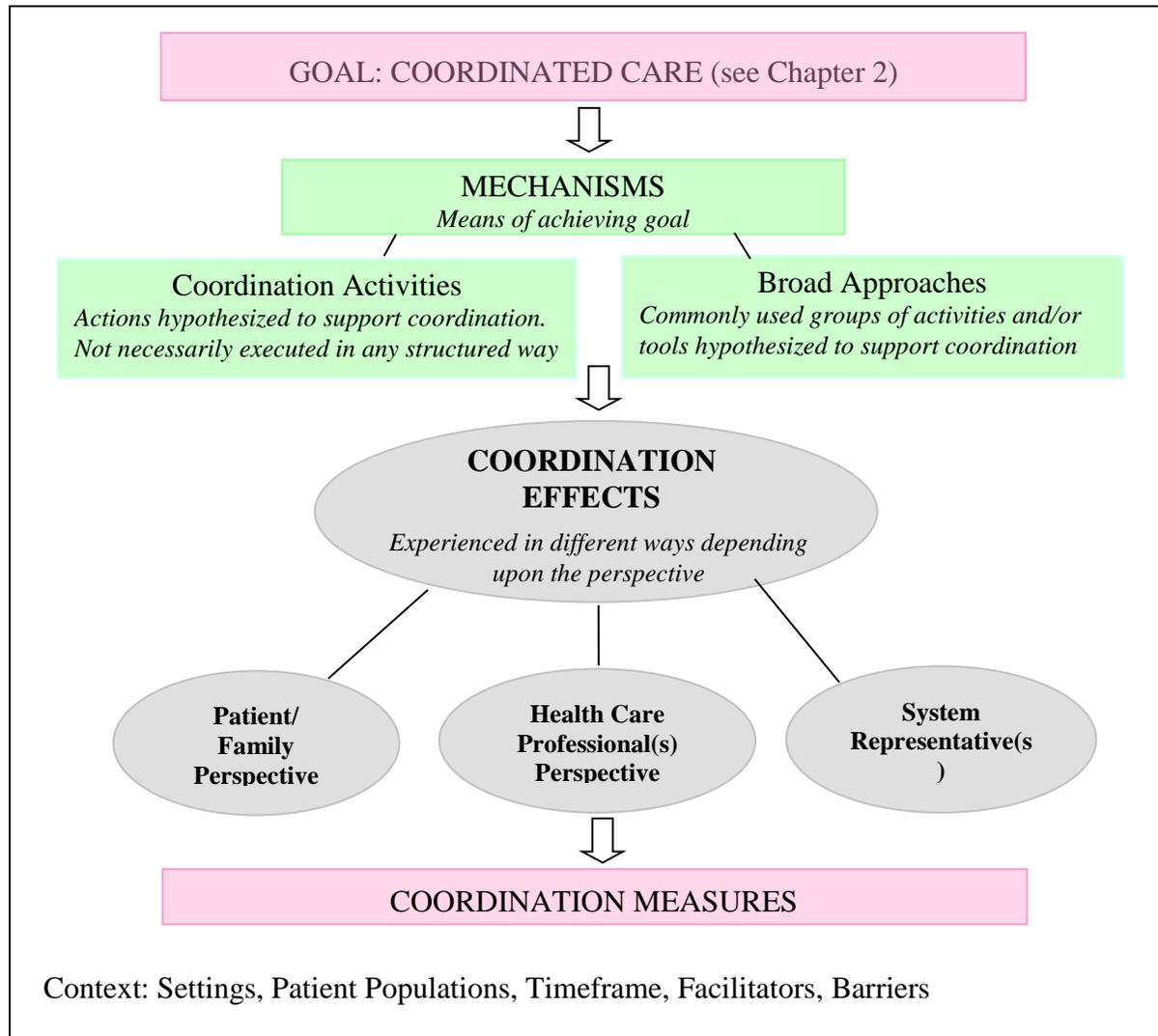


Chapter 3. Care Coordination Measurement Framework

Elements of the Framework

To help organize measures of care coordination, we developed a framework diagramming key domains that are important for measuring care coordination and their relationship to potentially measurable effects (see Figure 2). When laid out in the Measure Mapping Table (see Chapter 5), this serves as an indexing system to map the landscape of available measures and measurement gaps for care coordination. Because the care coordination topic is potentially quite broad, it is vital to have a way to see where measurement work has and has not been done. This indexing approach may help guide future measurement work by showing what regions of the measurement landscape are as yet unexplored or underdeveloped.

Figure 2. Care Coordination Measurement Framework Diagram



Goal. The framework starts at the top with the goal of achieving coordinated care. [Chapter 2](#) describes through definitions, [visual means](#), and [patient scenarios](#) ways to think about this goal. In short, care coordination is a means to help achieve *care goals*: it aims to meet patient needs and preferences and to facilitate delivery of high-quality, high-value care.

Mechanisms. Various *mechanisms* may be employed to facilitate this goal of care coordination. *Coordination activities* are actions that help achieve coordination, whether employed in an improvised or systematic way. *Broad approaches* aimed at improving the delivery of health care, including improving or facilitating coordination, often incorporate a number of coordination activities. Such approaches are often complex in intent and design. The specific activities employed when implementing the broad approaches often vary, are not always well described, and have coordination-related components that are not necessarily clearly delineated.

Table 1 lists *coordination activities* that have been hypothesized or demonstrated to facilitate care coordination and *broad approaches* commonly used to improve the delivery of health care, including improving care coordination. These *mechanisms* make up the *domains* of our care coordination measurement framework. As the knowledge base around care coordination grows, we expect this list to change. [See domain definitions](#).

Table 1. Mechanisms for Achieving Care Coordination (Domains)

COORDINATION ACTIVITIES
Establish Accountability or Negotiate Responsibility
Communicate
Facilitate Transitions
Assess Needs and Goals
Create a Proactive Plan of Care
Monitor, Follow Up, and Respond to Change
Support Self-Management Goals
Link to Community Resources
Align Resources with Patient and Population Needs
BROAD APPROACHES
Teamwork Focused on Coordination
Health Care Home
Care Management
Medication Management
Health IT-Enabled Coordination

Effects. The effects of care coordination mechanisms—whether specific activities or broad approaches—will be perceived differently depending upon who is asked: patient and/or family, health care professional(s), or system representative(s).

The *measurement perspective* reflects the source of data used to understand the effect or experience. The data source is a function of who is asked or assessed. Table 2 shows some examples related to care coordination.

Table 2. Examples of Effects or Experiences From Three Perspectives

PATIENT/FAMILY PERSPECTIVE
Patient report of satisfaction with coordination of care Family report of confusion or hassle (e.g., number of contacts needed to schedule a clinic visit) Patient report of unnecessary care (e.g., unnecessary tests, procedures, emergency room visits, or hospitalizations)
HEALTH CARE PROFESSIONAL(S) PERSPECTIVE
Nurses reports of confusion or hassle (e.g., time spent coordinating referrals) Physician survey on effectiveness of medication management process at averting drug interaction complications
SYSTEM REPRESENTATIVE(S) PERSPECTIVE
Quality of care (safe, effective, efficient, timely, equitable, patient-centered) measured through analysis of medical chart data, electronic health record, or administrative data Health care utilization by a group of patients (e.g., hospital readmissions, emergency room visits) Costs

Participants. Care coordination necessarily involves multiple participants. [Chapter 2: What is Care Coordination?](#) outlines some of the groups of participants typically involved in patient care and provides examples of gaps between participants and how they may be bridged by coordination activities. When selecting care coordination measures, it may be helpful to consider which participants are interacting in the activities of interest to be measured and from which perspectives you wish to measure those interactions. For example, measures that assess communication may focus on communication between patients/family and health care professionals, communication within teams of health care professionals, or communication across health care teams or settings. (When detailing specific measures, we provide information on types of participant interactions for items related to the Communicate domain or its subdomains).

Note that a single interaction may be measured from multiple perspectives. For example, communication between patients and physicians during office visits might be measured from the patient perspective by asking patients how much they agree that their doctor listens to their concerns about conflicting advice from different health care professionals. It might be measured from the health care professional(s) perspective by asking physicians whether they believe they have adequate time during visits to convey information about referrals and followup plans. The interaction also might be measured from a system representative(s) perspective by examining the percent of office visits where discussion of a plan of care was documented in the electronic medical record. All three measures evaluate communication between patients and health care professionals but provide different views on the effect or experience of that activity.

While participant interactions are important to consider for many coordination activities, they may be particularly important to consider for several additional framework domains, including Teamwork Focused on Coordination (Which teams? Coordination of which participants?), Establish Accountability or Negotiate Responsibility (Whose responsibility? Accountability for

whom?), and Facilitate Transitions (Transitions between which participants? Across which settings?). For further discussion of types of transitions, see [Points of Transition](#) in Chapter 2.

Coordination Measures in the *Atlas*. The effects noted in Chapter 1 are the ultimate endpoints of interest (e.g., clinical outcomes, utilization-related outcomes, quality of life, etc.). However, the *Atlas* focuses on perspectives as they relate to whether specific activities or approaches were carried out, or what intermediate outcome these mechanisms produced, as gateways to potentially achieving the ultimate endpoint experiences desired by the different stakeholders. The *Atlas* scope targets measures proximal to coordinating successes or failures, even though distal measures are the ultimate endpoints of interest. Proximal measures allow the “black box” of coordination to be studied more closely, and in ways that reveal potential action points for system improvement.

Context. Care coordination measurement must also consider the context: which patient population(s), which setting(s), what timeframe. In addition, care coordination effects may be magnified or muted by facilitators and barriers of care coordination (e.g., effect modifiers). Therefore, it may be advisable, in addition to using measures from the *Atlas*, to examine potential facilitators and barriers to successful implementation of an intervention. Examples of factors that may facilitate or impede care coordination, depending upon the specific circumstances, include the availability of resources, payment structure, patient complexity and capacity (e.g., Chapter 2 [patient scenarios](#)), and local culture.

Harmonizing Across Frameworks

The goal in creating a care coordination framework was to develop a list of domains that are important to care coordination. Existing measures of care coordination were mapped to these domains to help users identify measures that might be of interest in relation to their measurement objectives.

To create this framework, several other proposed frameworks for care coordination were reviewed. We drew heavily on these past works and, when possible, tried to be consistent in use of terminology. However, core domains also were organized differently from other frameworks because of our goal to identify potentially measurable aspects of care coordination. Therefore, some conceptual domains were grouped that were separate in other works and some provided more granularity. Table 3 outlines key sources and their relation to our framework domains.

Care coordination is an emerging field with a rapidly growing evidence base. This framework is intended to grow with the field. Elements of the framework that define each box, and that are noted in bold in Figure 2, are core components that we do not expect to undergo much change. However it is defined, care coordination will always have goals, it will be achieved through some combination of mechanisms, and it will be experienced through effects. Those effects will likely be perceived differently from three key perspectives: that of patients and family, of health care professionals, and of system representatives. Coordination measures can be categorized using these perspectives and domains related to mechanisms. Thus, as currently presented, this framework provides a starting place for understanding care coordination and, in particular, for indexing measures of care coordination.

For an explanation of how our Care Coordination Measurement Framework might be envisioned as a subset of broader models, see the box below and continuing on the following page. The box shows two examples of the relationship between this framework and other conceptual models, the Donabedian Model and the Organizational Design Model, discussed in Chapter 5 of the AHRQ Care Coordination Evidence Report, “Conceptual Frameworks and Their Application to Assessing Care Coordination.”⁷

Relation to Other Conceptual Models

Our care coordination measurement framework may be understood in relation to other commonly used conceptual models. In particular, we find the **Donabedian** and **Organizational Design** models to be valuable, somewhat contrasting, lenses through which to view the flexibility of our framework. To help link our framework to these models, we **SMALL CAP** elements of our framework and *italicize* elements of the models.

Donabedian Model



Many of the **BROAD APPROACHES** included in our framework are *structures of care*, such as establishment of a health care home, use of a health IT system to improve coordination, or designation of a case manager. These are structures of a system (whether a clinic, hospital, or integrated network) that will influence processes of care. The **COORDINATION ACTIVITIES** in our framework are *processes of care*. These are specific actions taken in the delivery of care, such as transferring information and assessing needs and goals. The **EFFECTS**, or *outcomes*, of care coordination mechanisms—both **BROAD APPROACHES** and **COORDINATION ACTIVITIES**—are perceived in different ways from different **PERSPECTIVES**.

For our purposes, strengths of the Donabedian model include its familiarity to the health care quality research community and its basis for different types of measures (structure, process, and outcome measures). However, in its original simplified form above, it does not reflect the complexities of health care delivery or acknowledge the need for tailoring interventions to fit a particular context.

⁷ McDonald KM, Sundaram V, Bravata DM, et al. Conceptual frameworks and their application to assessing care coordination. In: Shojania KG, McDonald KM, Wachter RM, and Owens DK, eds. Closing the quality gap: A critical analysis of quality improvement strategies. Technical Review 9 (Prepared by Stanford-UCSF Evidence-Based Practice Center under contract No. 290-02-0017). Vol 7, Chapter 5. Rockville, MD: Agency for Healthcare Research and Quality, June 2007. AHRQ Publication No. 04(07)-0051-7.

Organizational Design Model

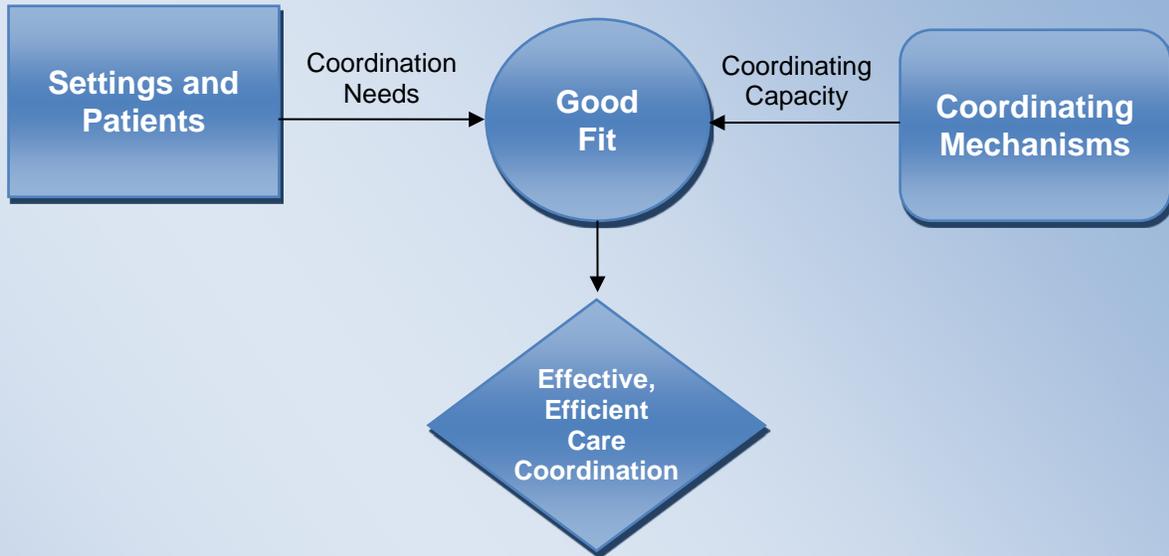


Table 3. Relation Between the Care Coordination Measurement Framework and Other Key Sources

FRAMEWORK DOMAINS	KEY SOURCES
COORDINATION ACTIVITIES	
Establish Accountability or Negotiate Responsibility	<i>NQF</i> : Communication domain includes – all medical home team members work within the same plan of care and are measurably coaccountable for their contributions to the shared plan and achieving the patient’s goals.
Communicate	<i>Antonelli</i> : Care coordination competency – communicates proficiently; care coordination function – manages continuous communication. <i>NQF</i> : Framework domain – Communication available to all team members, including patients and family.
<i>Interpersonal Communication</i>	<i>Coiera</i> : All information exchanged in health care forms a “space”; the communication space is the portion of all information interactions that involves direct interpersonal interactions, such as face-to-face conversations, telephone calls, letters, and email.
<i>Information Transfer</i>	<i>MPR</i> : Care coordination activity – send patient information to primary care provider. <i>NQF</i> : Communication domain includes – availability of patient information, such as consultation reports, progress notes, test results, and current medications to all team members caring for a patient reduces the chance of error.
Facilitate Transitions	<i>Antonelli</i> : Care coordination function – supports/facilitates care transitions. <i>CMS Definition of Case Management</i> : §440.169(c) Case management services are defined for transitioning individuals from institutions to the community. <i>NQF</i> : Framework domain – transitions or “hand-offs” between settings of care are a special case because currently they are fraught with numerous mishaps that can make care uncoordinated, disconnected, and unsafe. Some care processes during transition deserve particular attention, including involvement of team during hospitalization, nursing home stay, etc.; communication between settings of care; and transfer of current and past health information from old to new home.
Assess Needs and Goals	<i>Antonelli</i> : Care coordination function – completes/analyzes assessments. <i>CMS Definition of Case Management</i> : §440.169(d) Case management includes assessment and periodic reassessment of an eligible individual to determine service needs, including activities that focus on needs identification, to determine the need for any medical, educational, social, or other services. <i>MPR</i> : Care coordination activity – assess patient’s needs and health status; develop goals.

FRAMEWORK DOMAINS	KEY SOURCES
<p>Create a Proactive Plan of Care</p>	<p><i>Antonelli:</i> Defining characteristic of care coordination – proactive, planned and comprehensive; care coordination function – develops care plans with families; facile in care planning skills.</p> <p><i>CMS Definition of Case Management:</i> §440.169(d)(2) Case management assessment includes development and periodic revision of a specific care plan based on the information collected through an assessment or reassessment that specifies the goals and actions to address the medical, social, educational, and other services needed by the eligible individual, including activities such as ensuring the active participation of the eligible individual and working with the individual (or the individual’s authorized health care decisionmaker) and others to develop those goals and identify a course of action to respond to the assessed needs of the eligible individual.</p> <p><i>MPR:</i> Care coordination activity – develop a care plan to address needs.</p> <p><i>NQF:</i> Framework domain – Proactive Plan of Care and Followup is an established and current care plan that anticipates routine needs and actively tracks up-to-date progress toward patient goals.</p>
<p>Monitor, Follow Up, and Respond to Change</p>	<p><i>Antonelli:</i> Care coordination function – manages/tracks tests, referrals, and outcomes.</p> <p><i>CMS Definition of Case Management:</i> §440.169(d)(1) Case management assessment includes periodic reassessment to determine whether an individual’s needs and/or preferences have changed. §440.169(d)(2) Case management includes monitoring and followup activities, including activities and contacts that are necessary to ensure that the care plan is effectively implemented and adequately addresses the needs of the eligible individual. If there are changes in the needs or status of the individual, monitoring and followup activities include making necessary adjustments in the care plan and service arrangements with providers.</p> <p><i>MPR:</i> Care coordination activities – monitor patient’s knowledge and services over time; intervene as needed; reassess patients and care plan periodically.</p> <p><i>NQF:</i> Plan of Care domain includes – followup of tests, referrals, treatments, or other services.</p>
<p>Support Self-Management Goals</p>	<p><i>Antonelli:</i> Defining characteristic of care coordination – promotes self-care skills and independence; care coordination function – coaches patients/families.</p> <p><i>MPR:</i> Care coordination activity – educate patient about condition and self-care.</p> <p><i>NQF:</i> Plan of Care domain includes – self-management support.</p>

FRAMEWORK DOMAINS	KEY SOURCES
Link to Community Resources	<p><i>Antonelli:</i> Care coordination competency – integrates all resource knowledge.</p> <p><i>CMS Definition of Case Management:</i> §440.169(d)(2) Case management includes referral and related activities (such as scheduling appointments for the individual) to help an individual obtain needed services, including activities that help link eligible individuals with medical, social, educational providers, or other programs and services that are capable of providing needed services to address identified needs and achieve goals specified in the care plan.</p> <p><i>MPR:</i> Care coordination activity – arrange needed services, including those outside the health system (meals, transportation, home repair, prescription assistance, home care).</p> <p><i>NQF:</i> Plan of Care domain includes – community services and resources. The Plan of Care includes community and nonclinical services as well as traditional health care services that respond to a patient’s needs and preferences and contribute to achieving the patient’s goals.</p>
Align Resources with Patient and Population Needs	<p><i>MPR:</i> Care coordination activity – arrange needed services, including those within the health system (preventive care with primary care provider; specialist visits; durable medical equipment; acute care).</p> <p><i>NQF:</i> A principle of care coordination is that care coordination is important to all patients, but some populations are particularly vulnerable to fragmented, uncoordinated care on a chronic basis, including (not mutually exclusive): children with special health care needs; the frail elderly; persons with cognitive impairments; persons with complex medical conditions; adults with disabilities; people at the end of life; low-income patients; patients who move frequently, including retirees and those with unstable health insurance coverage; and behavioral health care patients.</p>
BROAD APPROACHES	
Teamwork focused on Coordination	<p><i>Antonelli:</i> Care coordination competency – applies team-building skills; care coordination function – facilitates team meetings.</p>
Health Care Home	<p><i>NQF:</i> Framework domain – Health Care Home is a source of usual care selected by the patient (such as a large or small medical group, a single practitioner, a community health center, or a hospital outpatient clinic).</p>
Care Management	<p>See elements of CMS case management definition mapped under other domains.</p>
Medication Management	<p><i>MPR:</i> Care coordination activity – review medications.</p> <p><i>NQF:</i> Transitions or “hand-offs” domain includes medication reconciliation.</p>

FRAMEWORK DOMAINS	KEY SOURCES
Health IT-enabled Coordination	<p><i>Antonelli</i>: Care coordination competency – adept with information technology; care coordination function – uses health information technology.</p> <p><i>NQF</i>: Framework domain – information systems – the use of standardized, integrated electronic information systems with functionalities essential to care coordination is available to all providers and patients.</p>

Antonelli = 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. May 2009. Publication No. 1277.

CMS Definition of Case Management = Centers for Medicare and Medicaid Services. Medicaid Program; Optional state plan case management services. 42 Code of Federal Regulations 441.18 2007 4 December;72(232):68092-3.

Coiera = Coiera E. Guide to health informatics. 2nd ed. London, England: Hodder Arnold, a member of the Hodder Headline Group; 2003.

MPR = Coordinating care for Medicare beneficiaries: Early experiences of 15 demonstration programs, their patients, and providers: Report to Congress. Princeton, NJ: Mathematica Policy Research, Inc.; May 2004.

NQF = National Quality Forum. National Quality Forum-endorsed definition and framework for measuring care coordination. Washington, DC: National Quality Forum; 2006.

Definitions of Care Coordination Domains

The care coordination measurement framework includes activities that have been hypothesized as important for carrying out care coordination and broad approaches that have been proposed as means of achieving coordinated care. This set of domains may change as knowledge about care coordination grows. For additional details on key sources that informed development of this set of framework domains, [see](#) Table 3.

The term ‘care coordination’ is cited often in the health services literature, but is rarely clearly defined. The 2007 AHRQ Evidence Report on care coordination identified more than 40 definitions of coordination pertaining to a diverse set of patient populations, health care scenarios, and organizational situations.⁸ Descriptions of care coordination activities and interventions are also often ambiguous. This is particularly true of the broad approaches, which are frequently described by referring to general processes or roles without specifying who performs which actions under which circumstances. These are also usually wide in scope, with goals of improving aspects of patient care beyond just care coordination.

The working definitions for each framework domain were developed by drawing on a variety of sources. The intent is to help *Atlas* users understand how care coordination measures were mapped to the framework domains and to identify more easily the domains most relevant to their evaluation objectives. For details of this mapping process, [see Chapter 5 – Measure Mapping](#).

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⁸ McDonald KM, Sundaram V, Bravata DM, et al. Care coordination. In: Shojania KG, McDonald KM, Wachter RM, and Owens DK, eds. Closing the quality gap: A critical analysis of quality improvement strategies. Technical Review 9 (Prepared by Stanford-UCSF Evidence-Based Practice Center under contract No. 290-02-0017). Vol 7. Rockville, MD: Agency for Healthcare Research and Quality, June 2007. AHRQ Publication No. 04(07)-0051-7.

Activities

Establish accountability or negotiate responsibility. Make clear the responsibility of participants in a patient’s care for a particular aspect of that care. The accountable entity (whether a health care professional, care team, or health care organization) will be expected to answer for failures in the aspect(s) of care for which it is accountable. Specify who is primarily responsible for key care and coordination activities, the extent of that responsibility, and when that responsibility will be transferred to other care participants.

Communicate.⁹ Share knowledge among participants in a patient’s care. Communication may occur through a wide variety of channels, but for the purposes of measurement, we distinguish two key modes of communication:

Interpersonal communication. The give-and-take of ideas, preferences, goals, and experiences through personal interactions. Examples include face-to-face interactions, telephone conversations, email, and letters.

Information transfer. The flow of information, such as medical history, medication lists, test results, and other clinical data, from one participant in a patient’s care to another. For example, a written summary of laboratory results sent from a primary care practice to the patient, verbal confirmation of a laboratory value from the laboratory to a physician, or transfer of a disk containing CT images from a hospital to a primary care office.

While in practice interpersonal communication and information transfer often occur together, for the purposes of measurement, *interpersonal communication* is distinguished from information transfer by a two-way exchange of knowledge through personal interactions, while *information transfer* is characterized by the transfer of data—whether orally, in writing, or electronically—and does not necessarily involve direct interaction between sender and receiver. Many, but not all, care coordination measures include aspects of both interpersonal communication and information transfer and, as such, we expect that many measures will map to both subdomains.

Facilitate transitions. Facilitate specific transitions, which occur when information about or accountability for some aspect of a patient’s care is transferred between two or more health care entities or is maintained over time by one entity. Facilitation may be achieved through activities designed to ensure timely and complete transmission of information or accountability.

Across settings. For example, transitions from the inpatient (hospital) setting to the outpatient setting (i.e., physician’s offices); or transitions between ambulatory care settings (i.e., primary care to specialty clinics).

As coordination needs change. For example, the transition from pediatric to adult care; transitions over the course of a woman’s changing reproductive cycle; and transitions between acute episodes of care and chronic disease management.

⁹ Informed by Coeira E. Guide to health informatics. 2nd ed. London, England: Hodder Arnold, a member of the Hodder Headline Group; 2003.

Assess needs and goals.¹⁰ Determine the patient’s needs for care and for coordination, including physical, emotional, and psychological health; functional status; current health and health history; self-management knowledge and behaviors; current treatment recommendations, including prescribed medications; and need for support services.

Create a proactive plan of care.¹¹ Establish and maintain a plan of care, jointly created and managed by the patient/family and health care team, which outlines the patient’s current and longstanding needs and goals for care and/or identifies coordination gaps. The plan is designed to fill gaps in coordination, establish patient goals for care and, in some cases, set goals for the patient’s providers. Ideally, the care plan anticipates routine needs and tracks current progress toward patient goals.

Monitor, follow up, and respond to change. Jointly with the patient/family, assess progress toward care and coordination goals. Monitor for successes and failures in care and coordination. Refine the care plan as needed to accommodate new information or circumstances and to address any failures. Provide necessary followup care to patients.

Support self-management goals. Tailor education and support to align with patients’ capacity for and preferences about involvement in their own care. Education and support include information, training, or coaching provided to patients or their informal caregivers to promote patient understanding of and ability to carry out self-care tasks, including support for navigating their care transitions, self-efficacy, and behavior change.

Link to community resources. Provide information on the availability of and, if necessary, coordinate services with additional resources available in the community that may help support patients’ health and wellness or meet their care goals. Community resources are any service or program *outside the health care system* that may support a patient’s health and wellness. These might include financial resources (e.g., Medicaid, food stamps), social services, educational resources, schools for pediatric patients, support groups, or support programs (e.g., Meals on Wheels).

Align resources with patient and population needs. *Within the health care setting*, assess the needs of patients and populations and allocate health care resources according to those needs. At the population level, this includes developing system-level approaches to meet the needs of particular patient populations. At the patient level, it includes assessing the needs of individual patients to determine whether they might benefit from the system-level approach. For example, a system-level approach to meeting the needs of patients with cancer (the population) might be to establish a multidisciplinary tumor board meeting to help coordinate cancer care among the many relevant specialties. In this scenario, aligning a particular patient’s needs with available resources would include assessing whether that individual would likely benefit by having his/her

¹⁰ Adapted from: Coordinating care for Medicare beneficiaries: Early experiences of 15 demonstration programs, their patients, and providers: Report to Congress. Princeton, NJ: Mathematica Policy Research, Inc.; May 2004.

¹¹ Adapted from: McDonald KM, Sundaram V, Bravata DM, et al. Care coordination. In: Shojania KG, McDonald KM, Wachter RM, and Owens DK, eds. Closing the quality gap: A critical analysis of quality improvement strategies. Technical Review 9 (Prepared by Stanford-UCSF Evidence-Based Practice Center under contract No. 290-02-0017). Vol 7. Rockville, MD: Agency for Healthcare Research and Quality, June 2007. AHRQ Publication No. 04(07)-0051-7.

case presented at the multidisciplinary tumor board meeting either for coordinating a consensus recommendation or for simplifying the patient's care pathway or both.

Broad Approaches Potentially Related to Care Coordination

Teamwork focused on coordination.¹² Integration among separate health care entities participating in a particular patient's care (whether health care professionals, care teams, or health care organizations) into a cohesive and functioning whole capable of addressing patient needs.

Health care home.¹³ A source of usual care selected by the patient that functions as the central point for coordinating care around the patient's needs and preferences. This includes coordination among all participants in a patient's care, such as the patient, family members, other caregivers, primary care providers, specialists, other health care services (public and private), and nonclinical services, as needed and desired by the patient. Other terms are frequently used to describe this model, such as medical home, patient-centered medical home, and advanced primary care. Building on the work of a large and growing community, the Agency for Healthcare Research and Quality defines a medical home as not simply a place but a model of the organization of primary care that delivers the core functions of primary health care. The medical home encompasses several functions and attributes: it is patient-centered and provides superb access to comprehensive and coordinated care and employs a system-based approach to quality and safety.

Care management. A process designed to assist patients and their support systems in managing their medical/social/mental health conditions more efficiently and effectively. Case management and disease management are included in this definition and further defined below.

*Case management*¹² The Case Management Society of America defines case management as: "A collaborative process of assessment, planning, facilitation and advocacy for options and services to meet an individual's health needs through communication and available resources to promote quality cost-effective outcomes."

*Disease management.*¹² The Disease Management Association of America defines this term as: "A system of coordinated health care interventions and communications for populations with conditions in which patient self-care efforts are significant. Disease management supports the physician or practitioner/patient relationship and plan of care, emphasizes prevention of exacerbations and complications utilizing evidence-based practice guidelines and patient empowerment strategies, and evaluates clinical, humanistic, and economic outcomes on an ongoing basis with the goal of improving overall health."

¹² Adapted from McDonald KM, Sundaram V, Bravata DM, et al. Care coordination. In: Shojania KG, McDonald KM, Wachter RM, and Owens DK, eds. Closing the quality gap: A critical analysis of quality improvement strategies. Technical Review 9 (Prepared by Stanford-UCSF Evidence-Based Practice Center under contract No. 290-02-0017). Vol 7. Rockville, MD: Agency for Healthcare Research and Quality, June 2007. AHRQ Publication No. 04(07)-0051-7.

¹³ Adapted from National Quality Forum. National Quality Forum-endorsed definition and framework for measuring care coordination. Washington, DC: National Quality Forum; 2006.

Medication management.¹⁴ Reconciling discrepancies in medication use in order to avoid adverse drug events associated with transitions in care. This can involve review of the patient's complete medication regimen at the time of admission/transfer/discharge, including assessing use of over-the-counter medications and supplements; comparison across information sources and settings; or direct communication between patients and providers.

Health IT-enabled coordination. Using tools, such as electronic medical records, patient portals, or databases, to communicate information about patients and their care between health care entities (health care professionals, care teams, or health care organizations) or to maintain information over time.

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¹⁴ Adapted from information available at: Agency for Healthcare Research and Quality. AHRQ Patient Safety Network Glossary. <http://www.psnet.ahrq.gov/glossary.aspx>. Accessed: 26 September 2010.

Chapter 4. Emerging Trends in Care Coordination Measurement

In this chapter, we discuss care coordination measurement approaches that are still early in their development. We focus on three main areas of development: (1) care coordination measures utilizing data from electronic health records (EHR) or other health information technology (IT) systems, (2) public reporting of health IT-enabled care coordination, and (3) social network analysis as a novel approach to care coordination measurement. Because these areas of care coordination measurement are still evolving, we discuss them here with an emphasis on current level of development and growth potential, rather than including them in the review of individual measure instruments profiled in [Chapter 6](#). These approaches were identified through the recent *Atlas* update measures search. Through this discussion, we aim to provide insight into future directions for measurement, and explore measurement potential, implementation challenges, and directions for further development.

EHR-based Care Coordination Measures

Much attention is being paid to the potential for using data from health IT systems, primarily EHRs, for quality measurement.^a This interest has increased exponentially since passage in 2009 of the Health Information Technology for Economic and Clinical Health (HITECH) Act, part of the federal stimulus legislation. The HITECH Act allocated more than \$25 billion towards building health information technology (IT) infrastructure and established two incentive programs (one each for Medicare and Medicaid) for adoption and “meaningful use” of certified EHR technology, including use for quality measurement. Given the potential for EHRs and other health IT systems, such as health information exchanges, to facilitate information flow between providers, patients, and settings, health IT-based measures are of particular interest to the field of care coordination. Such cross-boundary measurement has traditionally been very difficult, yet it is crucial for understanding the process and effects of coordination across these care interfaces, whether or not they span separate organizations.

The Office of the National Coordinator for Health IT (ONC) within the Office of the Secretary for the U.S. Department of Health and Human Services recently reported that in 2012, 72% of all office-based physicians have adopted an EHR system, nearly double the rate just 3 years prior. Growth of EHR adoption has been even greater in recent years in the inpatient setting, where EHR adoption rates among non-Federal acute care hospitals more than tripled from 12% to 44% between 2009 and 2012. As of 2012, 85% of all non-Federal acute care hospitals use a certified HER.^a These numbers are expected to grow in the coming years. This growth in EHR adoption and use offer much potential for major advances in the performance, and measurement, of care coordination over the next several years, even while many challenges remain.

In 2012, AHRQ published a report on the prospects for care coordination measurement using electronic data sources which evaluated opportunities for and barriers to measuring coordination processes using EHR data.^b That report, based on interviews with 21 informants with expertise in health IT systems development and use, health information exchanges, EHRs, all-payer claims

databases, insurance plans, health data standards, and quality measurement, highlighted three potential advantages of EHR data for use in measuring care coordination:

- Minimal data collection burden. Structured data within EHRs may be automatically extracted for quality measurement using computer programs or other advanced search techniques rather than through manual chart review.
- Rich clinical context. EHRs contain a trove of clinical data, including information on physician orders, laboratory and imaging results, medications prescribed, and progress notes. This information offers a view of processes of care and clinical outcomes not available within administrative claims data.
- Longitudinal patient data can be aggregated from multiple sources over time. EHRs aim (ideally) to aggregate information for each patient from multiple providers, settings, payers, and encounters into a single location.

While promising, both EHR technology and its implementation into clinical practice are evolving rapidly, and many barriers to EHR-based care coordination measurement have been highlighted in reports by AHRQ and others.^{a,b,c,d,e} These barriers fall into three main categories: clinical workflow barriers, data limitations, and limited ability to share information across EHRs at different sites.

Just as the concept of care coordination is ambiguous in the health services research literature, there is as yet little agreement within the clinical sphere about what constitutes care coordination, who should do it, when, and how. This ambiguity limits clinicians' efforts to coordinate care, and also limits documentation of coordination activities. As patterns of coordination-related clinical workflows emerge in the U.S. health care system, so too will the ability of EHRs to capture and facilitate those processes. Variability in care coordination documentation practices further limits development of standardized EHR-based measures of care coordination. Furthermore, heavy reliance on narrative documentation, rather than use of structured data fields,¹⁵ when entering clinical information into the medical record further limits use of information within EHRs for quality measurement.^c (Structured data are contained within specific data fields that specify the type and format of recorded information, such as height recorded in meters. Unstructured data are generally recorded as free text, with no limitations in the format and often without clear specification of the type of information recorded in a particular location.)

Several aspects of EHR data present challenges for use in quality measurement, including measures of care coordination. Lack of data standardization complicates the process of specifying data elements to be used in EHR-based quality measures. Coding of lab results and medication information was of particular concern in prior reviews.^{acd} Proposed measures of care coordination that focus on the transfer of this kind of information across settings or providers will be limited by this lack of standardization. In addition, much work is needed to evaluate the reliability, accuracy, and completeness of information contained within EHRs when used for

quality measurement.^{a,c} Furthermore, many EHRs in use today require significant resources and technical support in order to extract data for the purpose of quality measurement.^c

Poor EHR system interoperability presents a major obstacle to EHR-based measurement of care coordination processes. Without interoperability, EHRs cannot integrate into their record information about care received from other health delivery organizations or providers. This limits both coordination at the point of care and measurement of the coordination process using information contained within the EHR.^{a,c,f} Prior reports have noted that business models related to EHRs typically facilitate competition rather than cooperation, especially in ways that prevent a full picture of the steps taken to care for a patient across settings and time.^{cde} Much work is ongoing to address EHR interoperability, but until increased information sharing becomes commonplace, one of the greatest potential advantages of EHR-based care coordination measures—the ability to capture processes of care that span providers and settings—will remain largely unrealized.

Together, these reports underscore that EHR-based quality measurement is a nascent field, but one that is undergoing tremendous growth, spurred in particular by the HITECH Act.^a

Specification of EHR-based Measures

The degree to which current measures can actually be calculated using EHR data depends upon the level of EHR-particular specifications available. By specification, we mean a set of definitions, instructions, codes, and/or software programs that allow any user to implement a measure in a precise, reliable, and replicable way. For example, while a measure definition describes what and who is measured, including a numerator and denominator description, the measure specification precisely specifies how the measure is to be calculated, including which fields within the data source are to be used and which values, such as particular diagnosis codes or ages, are included or excluded for a particular data field. For coordination, relative timing of events might be part of the specification (e.g., test result and interpretation communicated to patient within a particular time window relative to test performance).

Measure specifications designed to enable automatic extraction of clinical data from an EHR are necessary to realize one of the most promising benefits of EHR-based quality measurement: reducing resources needed for data collection while retaining rich clinical information, including timing and logistical steps related to care. Without such specifications, manual review of the electronic record would still be required, offering little additional benefit beyond traditional chart review of paper records. Accordingly, a new standard, the Health Level 7 (HL7) Health Quality Measure Format (HQMF), has been established to guide specification of EHR-based quality measures. eMeasure specifications are those that are fully specified in accordance with this standard, and that also include associated value sets for data elements used by the measure. Today, eMeasure specifications facilitate implementation of EHR-based quality measurement, although complete automation of EHR-based measurement has not yet been realized. Further automation of EHR-based care coordination measurement will advance as EHR technology and the HL7 HQMF standard continue to evolve in conjunction with changes in clinical workflow patterns that incorporate greater performance, and documentation, of care coordination processes.

Currently Available EHR-based Measures of Care Coordination

With this context, we now review currently available EHR-based measures of care coordination (Table 4 and Table 5). These measures were identified through the updated *Atlas* measure search (see [Appendix II](#) for details), map to at least one of the [Atlas framework care coordination domains](#), and were designed specifically for use with EHR data or have complete eMeasure specifications available. We omit from this discussion measures that included EHR or health IT system data as a potential data source within the measure documentation without any further specifications particular to EHR data. We do include in the discussion the Meaningful Use objectives that are being used in the CMS EHR incentive programs to document that participating eligible professionals and hospitals are using certified technology in accordance with program goals. While the purpose of these objectives differs somewhat from traditional health care quality measurement, we believe they represent an additional type of EHR-based measure that may shed light on processes of care coordination, and as such include them in this discussion. We reviewed all Stage 1 and Stage 2 Meaningful Use objectives and clinical quality measures (CQM) (collectively referred to in this discussion as Meaningful Use measures), and include here only those that evaluated a process of care that mapped to at least one of the *Atlas* framework domains.

Many of the Meaningful Use and other EHR-based measures included in this discussion assess additional aspects of quality of care beyond coordination processes. As with many of the measures profiled in Chapter 6, determining whether a particular measure evaluated care coordination or some other aspect of care was at times a difficult decision requiring subjective judgment and consideration of context. See the section on [care vs. care coordination](#) in Chapter 1 for further discussion of the challenges in distinguishing measures of care coordination from measures that assess other aspects of care, and how we addressed those challenges when considering measures for inclusion in the *Atlas*.

The original *Atlas* search completed in July 2010 found no EHR-based measures of care coordination. A brief discussion of the Meaningful Use Stage 1 objectives was included in the original *Atlas*, but the CMS EHR incentive programs were in a very early stage of initiation at the time of its publication, so a complete review of measures associated with those programs was not undertaken.

As Table 4 and Table 5 demonstrate, there has been much interest and development in this area since that time, with 26 new EHR-based measures identified in the *Atlas* search update, including 13 Meaningful Use measures (9 objectives and 4 CQMs).

Table 4. Meaningful Use Measures that Assess Care Coordination*

TITLE AND SOURCE	BRIEF DESCRIPTION
MEANINGFUL USE OBJECTIVES	
Stage 1 & 2 Meaningful Use EP Core† Provide Patients the Ability to View Online, Download and Transmit Their Health Information Within 4 Business Days of the Information Being Available to the EP ⁹	Two measures: (1) Patients seen by the EP during the EHR reporting period are provided timely online access to their health information; (2) Patients seen by the EP during the EHR reporting period (or their authorized representatives) views, downloads, or transmits their health information to a third party. <i>Atlas</i> Domains: Information transfer (between health care professional(s) and patient/family), Health IT-enabled coordination eMeasure specifications available: N/A
Stage 1 & 2 Meaningful Use EP Core† Provide Clinical Summaries for Patients for Each Office Visit ⁹	Clinical summaries provided to patients or patient-authorized representatives within 1 business day for office visits. <i>Atlas</i> Domains: Information transfer (between health care professional(s) and patient/family) eMeasure specifications available: N/A
Stage 1 & 2 Meaningful Use EP Core† Use clinically relevant information to identify patients who should receive reminders for preventive/follow-up care and send these patients the reminders, per patient preference ⁹	Patients who have had ≥2 office visits with the EP within 24 months before the beginning of the EHR reporting period were sent a reminder, per patient preference when available. <i>Atlas</i> Domains: Monitor, follow up, and respond to change eMeasure specifications available: N/A
Stage 1 & 2 Meaningful Use EP, EH Core† Use Clinically Relevant Information From CEHRT to Identify Patient-Specific Education Resources and Provide Those Resources to the Patient ⁹	Patient-specific education resources identified by CEHRT Technology are provided to patients with EP office visits (or patients admitted to inpatient or ED) during the EHR reporting period. <i>Atlas</i> Domains: Support self-management goals eMeasure specifications available: N/A
Stage 1 & 2 Meaningful Use EP, EH Core† The EP/EH Who Receives a Patient From Another Setting of Care or Provider of Care or Believes an Encounter is Relevant Should Perform Medication Reconciliation ⁹	The EP/EH performs medication reconciliation for patient transitions of care to the EP or admissions to the EH inpatient or ED. <i>Atlas</i> Domains: Facilitate transitions across settings, Medication management eMeasure specifications available: N/A
Stage 1 & 2 Meaningful Use EP, EH Core† The EP/EH Who Transitions Their Patient to Another Setting of Care or Provider of Care or Refers Their Patient to Another Provider of Care Should Provide a Summary Care Record for Each Transition of Care or Referral ⁹	3 measures (all required): (1) EP/EH who transitions or refers their patient to another setting or provider of care provides a summary of care record (2) EP/EH who transitions or refers patients provides a summary of care record either [a] electronically transmitted using CEHRT to recipient, or [b] where the recipient receives the summary of care record via HIE; and (3) EP/EH either [a] conducts at least 1 successful electronic exchange of summary of care document with a recipient who has EHR technology developed or designed by a different company from the senders', or [b] conducts at least 1 successful test with the CMS-designated test EHR during the reporting period. <i>Atlas</i> Domains: Information transfer (across health care teams or settings), Facilitate transitions across settings,

	Health IT-enabled coordination eMeasure specifications available: N/A
Stage 2 Meaningful Use EP Core Use Secure Electronic Messaging to Communicate with Patients on Relevant Health Information ^g	A secure message was sent using the electronic messaging function of CEHRT by patients (or their authorized representatives) seen by the EP during the EHR reporting period. <i>Atlas</i> Domains: Information transfer (between health care professional(s) and patient/family), Health IT-enabled coordination eMeasure specifications available: N/A
Stage 2 Meaningful Use EH Core Provide Patients the Ability to View Online, Download and Transmit Information About a Hospital Admission ^g	This objective includes 2 measures: (1) Patients discharged from the inpatient or ED of the EH during the EHR reporting period have their information available online within 36 hours of discharge; and (2) Patients (or their authorized representatives) who are discharged from the inpatient or ED of EH actually view, download or transmit to a third party their information during the EHR reporting period. <i>Atlas</i> Domains: Information transfer (between health care professional(s) and patient/family), Facilitate transitions across settings eMeasure specifications available: N/A
Stage 1 & 2 Meaningful Use EH Menu† Provide Structured Electronic Lab Results to Ambulatory Providers ^g	Hospital labs send structured electronic clinical lab results to the ordering provider for electronic lab orders received. <i>Atlas</i> Domains: Information transfer (across teams of health care professionals), Health IT-enabled coordination eMeasure specifications available: N/A
MEANINGFUL USE CLINICAL QUALITY MEASURES	
Stage 2 Meaningful Use EP CQM Closing the Referral Loop: Receipt of Specialist Report ^h	Percentage of patients with referrals, regardless of age, for which the referring provider receives a report from the provider to whom the patient was referred. <i>Atlas</i> Domains: Information transfer (across teams of health care professionals), Facilitate transitions across settings eMeasure specifications available: Yes
Stage 2 Meaningful Use EP CQM Follow-Up Care for Children Prescribed ADHD Medication (NQF #0108) ^h	Percent of children 6-12 years old newly dispensed medication for ADHD who had appropriate follow-up care. Two rates are reported: (1) percent of children with one follow-up visit with a practitioner with prescribing authority during the 30-day initiation phase; (2) percent of children who remained on ADHD medication for ≥210 days who, in addition to the visit in the initiation phase, had at least 2 other follow-up visits within 270 days (9 months) after the initiation phase ended. <i>Atlas</i> Domains: Monitor, follow up, and respond to change eMeasure specifications available: Yes
Stage 2 Meaningful Use EH CQM Home Management Plan of Care Document Given to Patient/Caregiver (NQF#0338) ^h	Assessment that there is documentation in the medical record that a Home Management Plan of Care document was given to the pediatric asthma patient/caregiver. <i>Atlas</i> Domains: Information transfer (between health care professional(s) and patient/family), Create a proactive plan of care eMeasure specifications available: Yes

<p>Stage 2 Meaningful Use EP CQM Diabetic Retinopathy: Communication With the Physician Managing Ongoing Diabetes Care (NQF#0089)^h</p>	<p>Percent of patients aged 18 years and older with a diagnosis of diabetic retinopathy who had a dilated macular or fundus exam performed with documented communication to the physician who manages the on-going care of the patient regarding the findings of the exam at least once with 12 months. <i>Atlas Domains:</i> Communicate (across teams of health care professionals) <i>eMeasure specifications available:</i> Yes</p>
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*The CMS EHR incentive programs are broad in scope and include many objectives and CQMs that do not assess care coordination. This table includes only those that, in our judgment, evaluated a process of care that mapped to at least one of the Atlas framework domains.

†This measure was used in Stage 1 and Stage 2, with slight modifications for the different stages. Only the stage 2 version is listed here.

ADHD – Attention deficit hyperactivity disorder; BMI – Body mass index; CCD – Continuity of care document; CEHRT – Certified electronic health record technology; CQM – Clinical quality measures; EH – Eligible hospital (includes critical access hospitals); EHR – Electronic health record; EP – Eligible professional; HIE – Health information exchange; HIT – Health information technology system (includes EHR and HIE); N/A – Not applicable; NQF – National Quality Forum.

Table 5. Other EHR-based Care Coordination Measures

TITLE AND SOURCE	BRIEF DESCRIPTION
<p>Prenatal Record Present at the Time of Deliveryⁱ</p>	<p>Percent of patients, regardless of age, who gave birth at 36 weeks gestation or beyond during a 12-month period whose prenatal record was present at the facility at the time of delivery (may include faxing or emailing copy to labor and delivery). Atlas Domains: Information transfer across teams of health care professionals, Facilitate transitions across settings eMeasure specifications available: No</p>
<p>The Ability for Providers With HIT to Receive Laboratory Data Electronically Directly Into Their Qualified/Certified EHR System as Discrete Searchable Data Elements (NQF#0489)^j</p>	<p>Documents the extent to which a provider uses certified/qualified EHR system that incorporates an electronic data interchange with one or more laboratories allowing for direct electronic transmission of laboratory data into the EHR as discrete searchable data elements. Atlas Domains: Information transfer (across teams of health care professionals), Health IT-enabled coordination eMeasure specifications available: No</p>
<p>Tracking of Clinical Results Between Visits (NQF # 0491)^j</p>	<p>Documentation of the extent to which a provider uses a certified/qualified EHR system to track pending laboratory tests, diagnostic studies (including common preventive screenings) or patient referrals. The Electronic Health Record includes provider reminders when clinical results are not received within a predefined timeframe. Atlas Domains: Monitor, follow up, and respond to change, Health IT-enabled coordination eMeasure specifications available: No</p>
<p>Heart Failure Follow-Up Visit Scheduled^k</p>	<p>Percent of patients, regardless of age, discharged to ambulatory care or home health care with a principal discharge diagnosis of heart failure for whom a followup appointment was scheduled and documented including location, date, and time for a follow-up office visit, or home health visit (as specified). Atlas Domains: Facilitate transitions across settings, Monitor, follow up, and respond to change eMeasure specifications available: No</p>

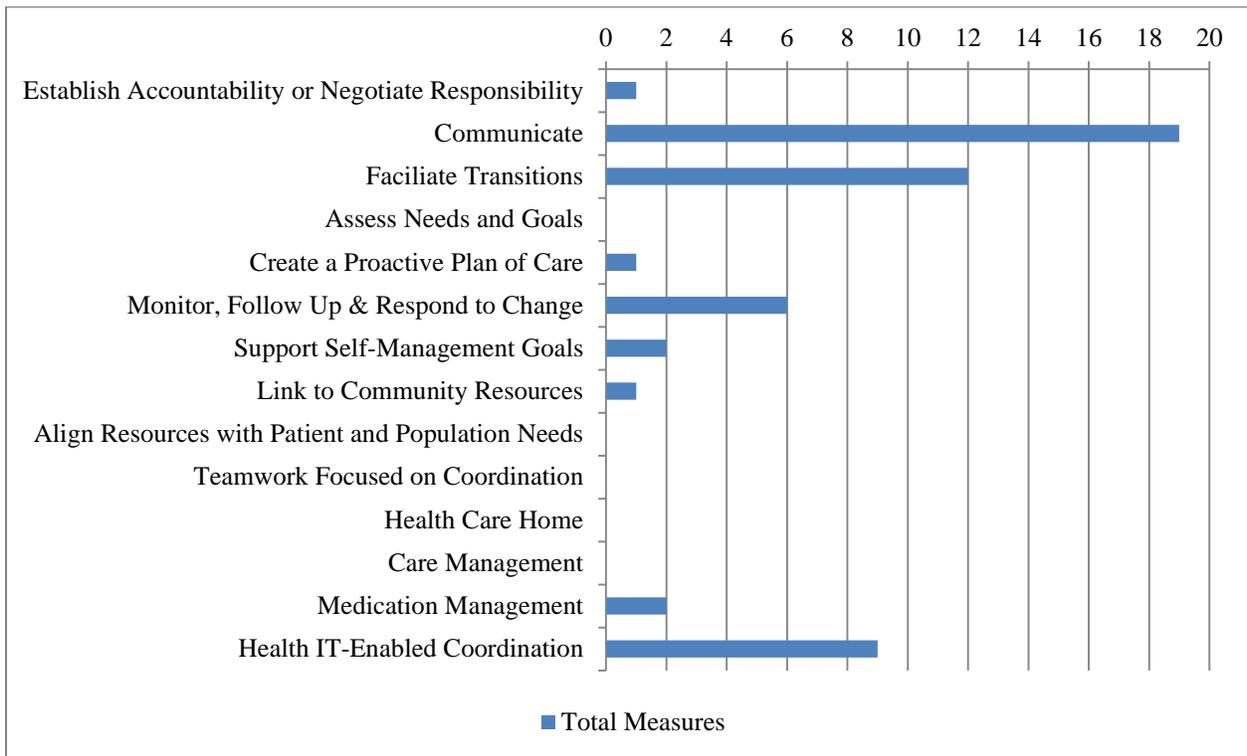
TITLE AND SOURCE	BRIEF DESCRIPTION
Critical information communicated with request for referral to specialist (sent by PCP) ^l	Number of patients with relevant clinical information communicated using CCD with request for referral to specialist. Defined from PCP perspective (CCD sent) and also from specialist perspective (CCD received). Atlas Domains: Information transfer (across teams of health care professionals), Facilitate transitions across settings, Health IT-enabled coordination eMeasure specifications available: No
Critical Info communicated with request for referral to specialist (received by specialist) ^l	Number of patients with relevant clinical information communicated using CCD with request for referral to specialist. Defined from PCP perspective (CCD sent) and also from specialist perspective (CCD received). Atlas Domains: Information transfer (across teams of health care professionals), Facilitate transitions across settings, Health IT-enabled coordination eMeasure specifications available: No
PCP communicates to patient the reason for referral ^l	Number of referred patients where PCP gave patient written information on reason for referral/consultations. Atlas Domains: Information transfer (between health care professional(s) and patient/family), Facilitate transitions across settings eMeasure specifications available: No
Specialist communicates results to patient/family ^l	Number of patients seen by specialist where the specialist provided written results to the patient. Atlas Domains: Information transfer (between health care professional(s) and patient/family) eMeasure specifications available: No
PCP review of Specialist Report ^l	Number of referred patients seen by the specialist where the PCP reviewed the results of the specialist report. Atlas Domains: Information transfer (across teams of health care professionals), Health IT-enabled coordination eMeasure specifications available: No
eMeasures of Effect on Quality of EHR with HIE ^m	Set of 11 process measures that use EHR data to assess the effect of using an EHR that has health information exchange capabilities. Includes redundant testing, medication documentation, referral communication and post-discharge follow-up. Atlas Domains: Information transfer (across teams of health care professionals), Facilitate transitions across settings, Monitor, follow up, and respond to change eMeasure specifications available: No
Osteoporosis: Communication with the physician managing on-going care post fracture of hip, spine, or distal radius for men and women aged 50 and older. (NQF #0045) ⁿ	Patients age 50 or older treated for hip, spine, or distal radial fracture who have documentation of communication with physician managing the patient's on-going care that a fracture occurred, and that the patient was, or should be tested or treated for osteoporosis. Atlas Domains: Communicate (across teams of health care professionals), Facilitate transitions across settings, Facilitate transitions as coordination needs change eMeasure specifications available: Yes

TITLE AND SOURCE	BRIEF DESCRIPTION
Medication Reconciliation (NQF#0097) ⁿ	<p>Patients aged 65 years and older discharged and seen within 60 days in the office by the physician providing on-going care who had a reconciliation of the discharge medications with the current medication list in the medical record documented.</p> <p>Atlas Domains: Establish accountability or negotiate responsibility; Information transfer (across health care teams or settings); Facilitate transitions across settings, Monitor, followup and respond to change; Medication management</p> <p>eMeasure specifications available: No</p>
Dementia: Caregiver Education and Support ^o	<p>Percent of patients, regardless of age, with a diagnosis of dementia whose caregiver(s) were provided with education on dementia disease management and health behavior changes AND referred to additional resources for support within a 12-month period.</p> <p>Atlas Domains: Support self-management goals, Link to community resources</p> <p>eMeasure specifications available: Yes</p>

EHR – Electronic health record; HIE – Health information exchange; HIT – Health information technology system (includes EHR and HIE); NQF – National Quality Forum; PCP – Primary care provider.
Numbers in parentheses refer to the NQF measure identification number, included for reference.

Together, the 26 EHR-based measures shown in Table 4 and Table 5 evaluated nine *Atlas* domains (Figure 3). The Communicate domain was the most commonly measured, specifically the Information Transfer sub-domain (n=17), highlighting the predominant focus of early EHR-based care coordination measures on tracking the flow of information from one location to another as patients receive care (Figure 4). Measures that mapped to the Information Transfer sub-domain most often evaluated transfers of information occurring across health care teams or settings (n=10), with an additional seven measures evaluating transfers of information between a health care provider and the patient or family. As highlighted by the gaps in Figure 4, no measures evaluated communication among members of a health care team, such as providers and staff within a single clinic, and no measures evaluated the Interpersonal Communication sub-domain, an area less identifiable with currently collected electronic information.

Figure 3. Frequency of Care Coordination Domains Measured by EHR-Based Measures

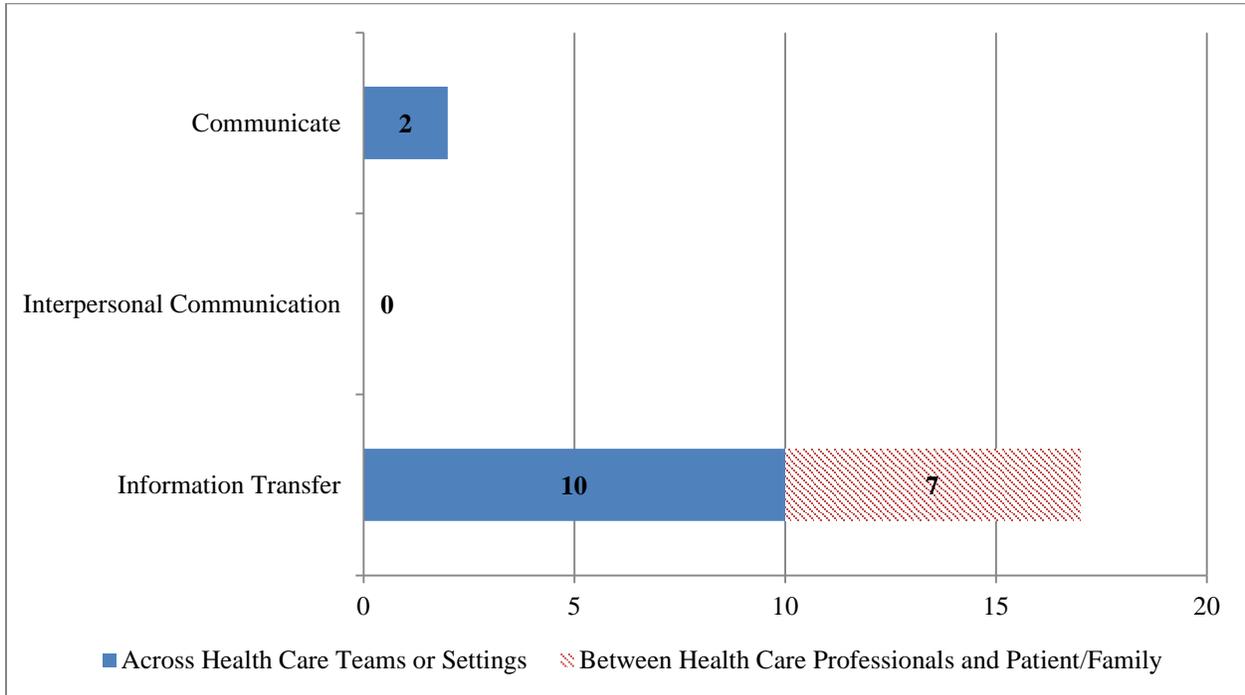


Note: No measures mapped to some of the domains, as illustrated above. Many measures mapped to more than one domain. N = 26 measures total.

Twelve measures mapped to the Facilitate Transitions domain; all of these evaluated transitions occurring across health care settings (Figure 5). The transitions most frequently measured were those from primary care to outpatient specialty care (n=4), inpatient to primary care (n=2), inpatient to outpatient specialty (n=2), and inpatient to any other setting of care (n=2). One measure also assessed the transitions as coordination needs change, evaluating coordination as older adults who have experienced certain fractures (hip, spine or distal radius) transition from acute care to a period of rehabilitation.

Health IT-enabled coordination was also commonly measured among the set of EHR-based measures (n=9), not surprising given the focus of many of these measures on the use of EHR technology, particularly among the Meaningful Use objectives and CQMs that account for 13 of the 26 EHR-based measures identified (Figure 3). (Note that this domain reflects whether health IT system functionality was used to carry out care coordination activities, not whether health IT data were used in calculating the measure. Thus, not all EHR-based measures map to this domain). While previous evaluations of potential for EHR-based care coordination indicated interest in using EHR data to evaluate coordination facilitated by comprehensive care plans,^{c,d,e} only one of the currently available EHR-based measures addresses this domain, in this case, evaluating provision of a home management plan of care to pediatric asthma patients. This likely reflects continued ambiguity around what constitutes a comprehensive plan of care and how to measure it. As highlighted in that report, such proactive, interactive, comprehensive and shared care planning is not widely used in current practice.^c

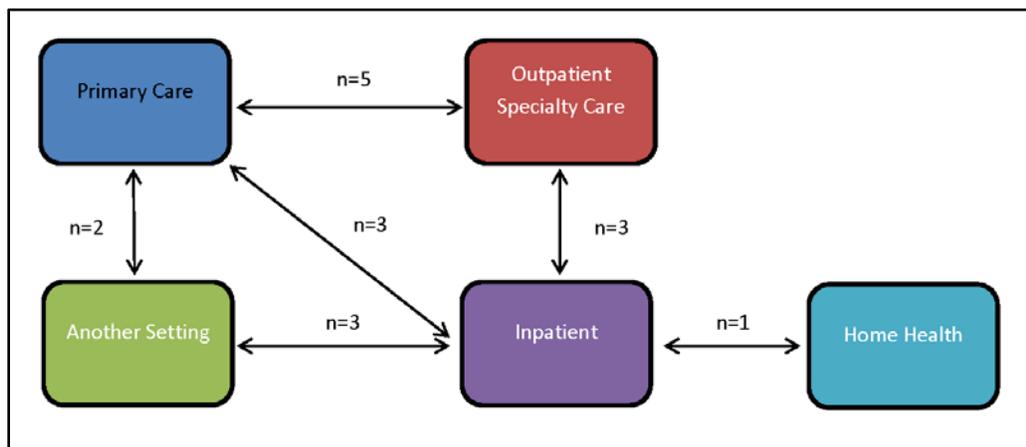
Figure 4. Frequency of Communicate Domains and Sub-Domains Measured by EHR-Based Measures



Note: Measures mapped to the Communicate domain when the mode of communication was not specified as either Interpersonal Communication or Information Transfer. No measures mapped to the Interpersonal Communication sub-domain. No measures assessed communication within teams of health care professionals. N = 26 measures total.

Taken together, these EHR-based measures reflect the current health IT climate that is widely concerned with solving problems of interoperability and achieving greater information sharing across settings, providers, and other participants in patients’ care. They also reflect limitations in the ability of EHR technology to capture dynamic, interpersonal processes such as teamwork, care planning, and interpersonal communication. Advances in technology and its integration into clinical work flows may attenuate some of these limitations in the future, but some aspects of care coordination may never be well-captured in EHRs.^c When resources allow, combining EHR-based measurement with other measurement approaches, such as surveys, can provide a more complete assessment of the many aspects of care coordination. Furthermore, EHRs represent just one view of care coordination processes (the system representative perspective). Measurement from the patient/family and health care professional perspectives is also important.

Figure 5. Types of Cross-Setting Transitions Evaluated by EHR-based Measures



Note: The sum of transitions listed above exceeds the total number of measures that evaluate any cross-setting transition (12) because some measures evaluated multiple transitions of care (i.e., transitions between Primary Care and Outpatient Specialty Care, as well as Primary Care and Inpatient).

Measures of EHR Use for Care Coordination - Meaningful Use

The Meaningful Use objectives and CQMs used in the CMS EHR incentive programs deserve particular attention, given the powerful impact those programs are having on health IT adoption. CMS reports that by mid-2013, more than half of all eligible professionals had received some incentive payment under the EHR incentive programs (Medicare and Medicaid combined). More than 309,000 unique eligible professionals and more than 4,000 unique eligible hospitals have received incentive payments. Payments as of June 2013 total more than \$15.5 billion.^p

Of the 26 EHR-based measures identified in the recent *Atlas* update search, 13 are used to evaluate Meaningful Use under the CMS EHR incentive programs (Table 4). These measures focus in particular on measuring the transfer of information (8 measures), either between providers and patients or their family (5 measures) or across health care providers or settings (3 measures). This reflects the focus of the Meaningful Use evaluation criteria to date (Stage 1 and Stage 2), which emphasizes data capture and sharing. It also reflects limitations in most EHR technology available today. One of the barriers to EHR-based care coordination measurement reported by AHRQ is that few options are available within current EHR technology to create, maintain, and share a longitudinal, comprehensive plan of care.^c Similarly, much of the information needed for care coordination, such as documentation of needs assessments, patient preferences, responsibilities of the various participants in a patient’s care, and patient support networks, typically resides in unstructured text format (i.e., free text notes) or is simply not recorded anywhere, rather than in structured fields using standard terminology or code sets. To date, no EHR-based measures use unstructured data, and recent evaluations suggest this will be the case for the foreseeable future.^c Enabling measurement of these aspects of care coordination will require a combination of advances in technology (building in structured data fields for this information), standardization (creating standards to encode this information), and clinical workflow (gathering information and documenting within structured fields using standards).^c

Public Reporting of Health IT-enabled Care Coordination

As increasing attention is focused on the adoption and use of EHRs and other health IT systems, some efforts are underway to publicly report health IT use. To the extent that these publicly reported measures specifically address care coordination, they also represent new opportunities for public reporting of coordination processes. Below, we summarize three such public reporting efforts identified as part of the *Atlas* measures search update. (Because the *Atlas* measures search was not designed specifically to identify public reporting initiatives, other examples may exist that report on some aspects of care coordination.)

- **Rhode Island Health IT Adoption.** As of August 2013, Rhode Island is the only state to mandate public reporting of health IT adoption and use by all licensed physicians. Beginning in 2013, advanced practice nurse practitioners and physician assistants must also participate, and will be individually identified in public reporting beginning in 2014. This public reporting is based on an annual survey that measures communication and information transfer across health care settings and use of EHRs to support patient monitoring and followup, as well as other aspects of EHR use not related to care coordination (see Measure #75, profiled in this updated *Atlas*). Practitioner-level scores are reported for five composite measures of EHR use, of which two (scores for basic and advanced EHR functionality use) include most of the coordination-related survey items. Although these composite measures mask some of the specificity of the coordination items included within them, they represent one of the earliest attempts to publicly report the performance of care coordination for individual health care professionals. More information and physician-level measure scores are available from the State of Rhode Island Department of Health (<http://www.health.ri.gov/physicians/about/quality/>).
- **Minnesota Health Scores.** This voluntary, state-wide public reporting initiative includes reporting the level of health IT-based care available from individual ambulatory care clinics within the state with respect to three functionalities: Adoption, Use, and Exchange. Most relevant to care coordination is the level of reported Exchange functionality, indicating whether an ambulatory care clinic sends or receives electronic data via an EHR with network hospitals (mid-level exchange functionality) and whether the clinic can also safely send or receive electronic information from its own EHR with hospitals outside its network (advanced level exchange functionality). Data are reported from a survey of most ambulatory care clinics in Minnesota; all clinics were invited to participate. In 2013, the first year of the program, 80% of clinics completed the survey. Clinic-level data are available online from Minnesota Health Scores (http://www.mnhealthscores.org/index.php?p=our_reports&sf=clinic&category=18).

- **State of California Office of the Patient Advocate (OPA) Quality Report Cards.** Through this web site, consumers can view quality information about ten commercial health maintenance organizations (HMO), six preferred provider organizations (PPO), and more than 200 medical groups in California. The medical group ratings include information about use of health IT to facilitate communication and information transfer between health care providers and patients, such as whether patients can email their doctor, receive test results online, view their medical record online, or receive a visit summary with instructions after each visit. These ratings are generated by the Integrated Healthcare Association's pay for performance initiative using the National Committee for Quality Assurance (NCQA) Healthcare Effectiveness Data and Information Set (HEDIS) measures as well as results from the Patient Assessment Survey. The HMO and PPO quality ratings include patient-reported experience of care based on the AHRQ Consumer Assessment of Healthcare Providers and Systems (CAHPS) health plan survey, including ratings of care coordination, but do not specifically address use of health IT to facilitate care coordination. More information and the HMO, PPO and medical group quality scores are available from the OPA Quality Report Cards web site at <http://reportcard.opa.ca.gov/rc2013/>.

In addition to myriad research and public policy uses, these publicly available data on some care coordination processes may serve as a benchmark against which to gauge care coordination processes measured at a local level, such as local quality improvement efforts. In this sense, they are examples of tools to be used alongside the *Care Coordination Measures Atlas*, providing a reference point or sense of scale against which to interpret results from other coordination measures.

Social Network Analysis of Care Coordination

Social network analysis (SNA) is a method for mapping and analyzing relationships among actors within a network. A network consists of actors, such as individuals, organizations, programs, or other entities, who are connected with one another in some way.^q SNA uses quantitative methods to evaluate the relationships and interactions of actors within a network, and can facilitate comparisons of one network to another, even when network structures differ.^f In this section, we provide a brief overview of SNA methods, then discuss its application to the health care setting, in particular its use in the study of processes related to care coordination.

Method Overview

To use the SNA method, the first step is to identify actors within a particular network. When the boundaries around a network are clear, this is a straightforward task and all actors are identified before any data collection begins. When boundaries are not clear, data must be collected to identify actors, often through qualitative methods, such as interviews or snowball techniques. However actors are identified, once this has been done, relationships—or ties—between each member of the network are mapped with each other member of the network, yielding a matrix of dyadic interactions. For example, if examining relationships among five nurses within a particular primary care clinic, the resulting network would take the form of a 5-by-5 matrix. The

actors and ties among them may be depicted visually through a variety of network graphs, and quantitative methods can be used to evaluate various characteristics of a network. These include the degree of connectivity of particular actors within the network, the importance—or centrality—of particular actors based on their position between, proximity to, and directed connections with other actors, and the extent to which different actors within a network play similar roles (termed structural equivalence). While the metrics used to evaluate and describe networks vary depending upon the questions of interest, all SNA methods are similar in their focus on identifying actors within a network and quantifying the interactions or relationships among them.^q

Social Network Analysis in the Health Care Setting

SNA has been used for the study of organizations since the 1950's, including some application in the health care setting. A recent systematic review of SNA methods published within the medical and health care literature identified 52 such studies published between 1950 and 2011.^s All but one of the included studies used SNA to describe an existing social network in a health care delivery organization, typically gathering information about networks of physicians, nurses, other health professionals, administrators, and policy makers. These studies focused most often on (1) organizational management, such as physician-nurse interactions, staff relationships, team-functioning, and within-organization decision-making processes; (2) diffusion of innovations, including adoption of medical technology, prescribing practices, and evidence-based medicine; and (3) professional ties among providers from different organizations, settings, or health professions. Few examined connections across health care settings (just 9 of 52 studies) and none specifically examined care coordination.

However, several studies suggest how SNA methods might provide insight into coordination processes at the level of organizations, patients, or particular care transitions. Below, we highlight three studies identified from the prior review, the updated *Atlas* measure search (see [Appendix II](#) for details), and other informal searches that demonstrate how SNA methods can be applied to the study and measurement of coordination-related processes.

In an example of an organization-level SNA approach to examining care coordination, Nageswaran and co-authors examined inter-agency collaboration in the care of children with complex chronic conditions in a single U.S. city.^t The authors found that pediatric practices reported the greatest degree of collaboration with other agencies with respect to both referrals out to and in from other organizations. They also had strong connections with subspecialty practices, but weak ties with supportive services agencies. The latter had poor ties with many other agencies and the greatest gaps in collaboration. By asking network actors about desired as well as actual ties, the authors zeroed in on the *Atlas* domain of links to community resources, revealing potential gaps in the coordination of services for this patient population which may be ripe for establishing new connections among agencies that desire more collaboration.

Weenink and colleagues examined networks of providers caring for patients with type 2 diabetes and chronic heart failure (CHF) at three primary care clinics in the Netherlands, using information from patients, health care providers, and the medical record to construct patient-specific networks.^u While small and of very limited generalizability, this study demonstrated feasibility of constructing patient-specific networks that arise during the provision of care. This

patient-centric approach differs from other applications of SNA that have examined networks defined by organizational, professional, or disease boundaries. Thus SNA has the potential to provide measures from each of the three *Atlas* perspectives (patient/family, health care professional, and system representative), as well as linkages between the individuals representing each view.

Finally, Benham-Hutchins and co-authors examined the network of actors and communication patterns surrounding five patient hand-offs within a single hospital, such as admission to the hospital from the emergency department or transfers from one inpatient unit to another.^v While these transitions occurred within a single hospital, the results illustrate that much care coordination, in particular communication, occurred during even intra-organization care transitions. Networks of providers included in the five hand-offs studied included between 11 and 20 providers. These networks were mapped by functional role, such as emergency department nurse or surgeon, rather than by individual name. Thus, the number of individuals involved in these hand-offs was likely greater than that reported from the analysis. The study found that none of the communication networks used in the five studied transfers had a centralized structure and that no single provider within any network coordinated information exchange. Gatekeepers were common among the networks, controlling the flow of information among various other actors. This study demonstrates that applying SNA techniques to examine care coordination processes is feasible, even at the very granular level of examining specific transitions for individual patients.

A key distinction between these three example studies is the level of analysis. Nageswaran and co-authors examined networks of organizations,^t reflecting typical patterns of interaction that occur routinely over the course of providing care or services for many patients. Analyses conducted at this level can provide insight into patterns of information sharing, collaboration, and referrals that occur regularly across organizations, potentially suggesting structural gaps where stronger connections are needed, as well as links that bridge separate operational networks. Weenink and colleagues examined networks centered around patients, evaluating the degree to which certain aspects of care were centralized with a particular provider role or specialty group, or with the patients themselves.^u This type of application might be useful for evaluating the effects of team-based or multidisciplinary care models or the effectiveness of improvement initiatives that employ care coordinators or technology to centralize coordination processes.

The study by Benham-Hutchins and co-authors examined coordination processes at an even more granular level, mapping networks of interactions that emerged on an *ad hoc* basis at the point of care as specific patient transitions occurred within a single institution.^v This extreme micro-level view provided much more detailed insight into the roles and interactions of particular providers within the hospital of study, but results might not be reflective of typical patterns of interactions around other patient transitions within the same hospital, and are likely even less generalizable to other health care delivery organizations. However, the greater level of detail would likely be useful for quality improvement efforts that target team functioning.

These studies demonstrate just three of the ways that SNA methods can be applied to evaluate care coordination processes, but other applications exist and more will emerge as social network

methods are more widely applied in this field. It is probable that additional applications of SNA to care coordination measurement have been published, but were not identified through the updated *Atlas* measure search. However, the identified evidence suggests that while promising and feasible, SNA has not yet been applied widely to questions of care coordination. Only one of 52 SNA applications from the health care setting identified by a recent systematic review^s related directly to care coordination, and another recent systematic review of boundary spanning roles within collaborative networks found only three examples from the health care setting, none of which addressed care coordination.^w

SNA-based methods of examining care coordination processes hold promise because they consolidate great complexity into a few measures and are highly adaptable. However, data collection can be burdensome, particularly for networks without clear boundaries or with many actors, and analyses can be complex and often require special software programs. Future development of SNA-based care coordination measures must address these challenges, while refining methods particular to questions of coordination, care transitions, and collaborative care.

Landscape of Care Coordination Measures

These emerging trends will enhance the landscape of care coordination measurement options, supplementing the current predominance of survey-based measurement methods with additional data sources and approaches. For the most part, these newer approaches to measurement will not replace older methods, but rather complement them by providing additional lenses through which to view coordination-related processes of care. However, it is likely that one formerly common approach to care coordination measurement—manual chart review—will be replaced in the future. As EHR technology and EHR-based measurement methodologies develop further, many measures that formerly relied on manual chart review will likely be supplanted by EHR-based measures for which data can be automatically extracted rather than requiring time-consuming manual review. In some cases this will involve revising measure specifications that were designed for chart review methods to instead adhere to the emerging standards for eMeasure specifications, as has been done for some of the currently available EHR-based measures. As the field of EHR-based measurement matures, additional measures will be developed that leverage the types of data most readily available from within EHRs.

Obtaining a comprehensive understanding of care coordination requires measurement from multiple perspectives, as is emphasized by the inclusion of three key perspectives in the [Atlas framework](#): patient/family, health care professional, and system representative. While this chapter emphasizes development of novel measurement approaches, we do not wish to suggest that surveys—the predominant type of care coordination measure in use today—are outdated or inadequate. Indeed, we expect that surveys will continue to be the chief method of measuring care coordination for the patient/family and health care professional perspectives, and will continue to play an important role as one of several options for measuring the system representative perspective. Rather, as they are further developed and implemented, the emerging measurement approaches discussed in this chapter will provide *additional* options for measuring care coordination from each measurement perspective. EHR-based measures offer a new method for evaluating the system representative perspective, and in the future may provide an additional avenue for evaluating the patient/family perspective as opportunities increase for patients and

their representatives to interact directly with EHRs. Social network analysis approaches can be adapted for measuring each of the perspectives, depending upon the level of analysis and source of information used to create network maps. Further development may also lead to combined or hybrid approaches, such as integrating questionnaires that collect data for social network analysis into existing care coordination-related surveys of patients or health care professionals, and then linking network characteristics to coordination processes evaluated through other means, such as EHR-based measures. While these possibilities are as yet unrealized, the rapid pace of care coordination measure development will ensure that many new measurement approaches continue to emerge and further enhance the measurement landscape.

As these and future measurement approaches emerge, the expanded landscape of care coordination measures will become broader, richer, and more diverse, but also potentially more difficult to navigate. It is our hope that this *Atlas* will serve as a valuable resource to guide measure selection, identify key measurement gaps, and build towards a common understanding of care coordination.

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Chapter 5. Measure Mapping

Measure Mapping Table

To lay out information about the care coordination measurement landscape in two dimensions, a Measure Mapping Table was developed to show the intersection of *care coordination domains* and *measurement perspectives*. Measures were indexed, or “mapped,” according to the care coordination domains included in the care coordination measurement framework (see [Figure 2](#)), in order to indicate which aspects of care coordination a particular instrument measures. This measure indexing, or mapping, serves two main purposes:

1. It provides an overview of the current care coordination measurement field, highlighting areas with many available measures and those with few measures.
2. It allows *Atlas* users to quickly narrow the field of available care coordination measures, homing in on those that assess aspects of care coordination of particular interest to the user.

Measures relevant to care coordination that are included in this *Atlas* were mapped using the Measure Mapping Table (Table 6). The table is structured to simultaneously categorize measures by perspective—patient/family, health care professional(s), or system representative(s)—and by care coordination domain (specific care coordination activities and broad approaches). The perspective (seen in the columns of the table) reflects how care coordination is measured: who is providing the information (e.g., patients, primary care provider, chart review), what data are used (e.g., patient satisfaction survey scores, medical record information, administrative data), and how data are aggregated during analyses (e.g., by patient, by physician group, by payer, etc.). The domains reflect the specific components of care coordination that are addressed by each measure, or individual items within the measure. [The Definitions of Care Coordination Domains](#) were used to guide measure mapping.

A filled square (■) indicates that the measure contains 3 or more individual items that pertain to that domain. Composite measures or summary scores are also indicated with a filled square. An open square (□) indicates that the measure contains only 1 or 2 items that relate to a domain. This allows users to quickly assess the degree to which each measure focuses on a particular domain of care coordination, as well as the burden of data collection (i.e., number of items) related to the specific domain. Individual questions or items (measure components) within a measure may map to more than one domain. In addition, a single measure, or measure component, may address only one aspect of a particular domain. We mapped a measure to a domain if it addressed any aspect of the [domain definition](#). For more detailed information on measure mapping, please refer to [Appendix I: Measure Mapping Strategy](#).

Measure profiles follow each individual measure mapping table and contain more detailed information on the measure (see [Figure 6](#)) for an explanation of what information is included). Decisions regarding the types of information to include were based on input from the advisory groups (see [Appendix III: Advisory Group Participants](#)). Relevant information for each section of the profile was obtained and extracted from publications identified through a detailed literature search (see [Appendix II: Identifying Measures](#)). The measure profiles also identify the

specific measure items (i.e., survey questions or measure components) that map to each domain. Copies of the measure instruments are available in [Appendix IV: Care Coordination Measures](#).

In this updated version of the *Atlas*, measure profiles also include information about three additional measure characteristics: patient age groups, patient conditions, and settings. These characteristics identify the group or groups of patients whose care the measure is intended to assess. Measures were mapped to these categories based on information contained in the measure instrument and in published sources listed in the *Atlas* profiles. Measures were mapped to a category if it matched a stated intent or purpose of the measure or a published use of the measure. When possible, feedback from measure developers was incorporated prior to finalizing the categorization for each measure. Definitions for categories can be found in [Appendix I: Measure Mapping Strategy](#).

Special Caution. Many measures included in the *Atlas* are survey instruments. Users are cautioned that even though individual items from surveys are mapped to particular domains, most instruments should be used in their entirety. Typically, measure testing is conducted on the entire measure; performance of measurement based on individual items is usually unknown. It may be possible to seek advice directly from a measure developer about any potential adaptations.

Table 4. Care Coordination Measure Mapping Table

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			
<i>Interpersonal communication</i>			
<i>Information transfer</i>			
Facilitate transitions			
<i>Across settings</i>			
<i>As coordination needs change</i>			
Assess needs and goals			
Create a proactive plan of care			
Monitor, follow up, and respond to change			
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Figure 6. Measure Profile Template

TITLE OF MEASURE

Purpose. A short statement defining the main objective or goal of the measure.

Format/Data Source. A description of the type of instrument(s). If applicable, specific information is noted regarding the number of individual items and the domains, categories, or subtopics covered.

Date. The date the measure was published or released.

Perspective. The perspective—Patient/Family, Health Care Professional(s), or System Representative(s)—being measured.

Measure Item Mapping. A list of which measure items map to which domains. Measure items are typically survey questions or instrument components. For domain definitions, refer to the Definitions section. For the Communicate domain and its subdomains (Interpersonal Communication and Information Transfer), we also provide information on the participants involved in the communication (e.g., communication between health care professional(s) and patient/family; within teams of health care professionals; and across health care teams or settings).

Development and Testing. A summary of relevant information concerning the development of the measure, as well as reliability and validity testing. Measure developers were contacted to seek updated testing information.

Link to Outcomes or Health System Characteristics. A summary of results that link the measure to patient outcomes or health system characteristics.

Logic Model/Conceptual Framework. A brief description of a model, framework, or design if utilized in the development of the measure.

Country: The country in which the measure was developed.

Past or Validated Applications

- **Patient Age.** Age groups for which the measure is applicable or validated.
- **Patient Condition.** Conditions for which the measure is applicable or validated.
- **Patient Setting.** Settings in which the measure is applicable or validated.

Notes

- This section contains any additional relevant information.

Source(s). List of relevant sources for the measure and its development or testing.



Measure Selection Guide

Purpose

This section of the chapter is intended to help users identify existing care coordination measures that can potentially be used to evaluate their care coordination interventions or demonstration projects.

Outline

1. Identify the measures relevant to your intervention.

Identifying the measures relevant to your intervention study involves several steps outlined below.

- a. Specify mechanisms of achieving care coordination.
- b. Find relevant domains on measure mapping table.
- c. Consider perspective(s) of interest.
- d. Identify relevant care coordination measures.

2. Review relevant measure profiles.

Once you have identified the relevant measures, go to the [Measure Profiles](#) section to examine the relevant measures in more detail and determine which may meet your evaluation needs.

Step-by-Step Guidance

This section augments the brief outline above with more detailed guidance on how to use the *Atlas*, including example material (in blue). (Note: this section reflects the set of 61 measures included in the original *Atlas* and does not include the newer updated *Atlas* measure additions).

1. Identify the measures relevant to your intervention.

Step a. Specify the relevant mechanisms that your intervention will utilize to achieve its care coordination goals. Then identify the corresponding care coordination domain(s) ([see Domain Definitions](#)).

A single intervention may employ multiple mechanisms so you will want to map each one individually to all applicable domains. Repeat this step for each mechanism, and highlight applicable rows on the measure mapping table. Keep in mind that a single mechanism may correspond to multiple domains.

Example

Dr. Smith designed a program to improve post-discharge health outcomes for patients with congestive heart failure and to reduce readmissions related to CHF. The program aims to achieve this by actively facilitating the transition from the inpatient to outpatient setting, using a patient-centered case

management approach to facilitate care during this transition. The study protocol includes activities such as: specially trained nurse case manager develops a care plan with the patient prior to discharge using a computerized protocol; a 30-minute patient education session with a nurse on the day of discharge to go over the patient care plan including ‘red flags’ (specific situations and the specific actions needed); faxing a complete medical record from the hospital, including test results, to the primary care provider within 48 hours of discharge; a followup phone call from a nurse to the patient within the first 7 days after discharge to assess the patient and trigger further followup as required. This program will be implemented at a single community hospital for 6 months. All patients admitted for CHF will be invited to participate.

Intervention mechanism: Facilitate transition from inpatient to outpatient setting → **Domain:** *Facilitate Transitions Across Settings*

Intervention mechanism: The program uses a case management approach and a designated case manager → **Domain:** *Care Management*

Intervention mechanism: Through red-flag discussion, help educate patient about how they can best react to changing symptoms → **Domain:** *Interpersonal Communication; Support Self-Management Goals.*

Intervention mechanism: Develop a care plan with the patient prior to discharge, using a computerized protocol → **Domain:** *Create a Proactive Plan of Care*

Intervention mechanism: 30-minute patient education session with nurse on the day of discharge to go over patient care plan → **Domain:** *Support Self-Management Goals; Create a Proactive Plan of Care*

Intervention mechanism: Faxing complete medical record from hospital stay, including test results, to primary care provider within 48 hours of discharge → **Domain:** *Information Transfer; Monitor, Follow Up, and Respond to Change.*

Intervention mechanism: Followup telephone call from nurse within the first 7 days after discharge → **Domain:** *Monitor, Follow Up, and Respond to Change*

Step b. Find the relevant domains on the Master Measure Mapping Tables (see Table 7, Table 8, and Table 9).

From the care coordination domains listed in the top rows on the left-hand side of the tables, find the domain(s) you selected and highlight across the row.

Example

For the example listed above, find and highlight the rows for *Facilitate Transitions (across settings)*; *Care Management*; *Information Transfer*; *Interpersonal Communication*; *Monitor, Follow Up, and Respond to Change*; *Create a Proactive Plan of Care*; *Support Self-Management Goals*.

Step c. Consider perspective(s) of interest.

Who is the intervention primarily targeted towards? Who will carry out the intervention? Which perspective are you most interested in assessing? Measurement from any of the three perspectives listed in the measure mapping tables may be relevant—*Patient/Family*, *Health Care Professional(s)*, or *System Representative(s)*. For example, an intervention that includes a patient education mechanism will certainly merit evaluation from a *Patient/ Family* perspective. But it may also be useful to assess it from a *Health Care Professional(s)*, or *System Representative(s)* perspective, depending on the goals of the intervention. Thorough evaluation may require looking at your intervention from multiple perspectives. There are three Master Measure Mapping Tables, one for each measurement perspective (see Table 7, Table 8, and Table 9).

Example

I am most interested in understanding the effects of this program on patients with CHF.

Perspective: *Patients/Family* → Specify population: CHF patients

Step d. Identify relevant care coordination measures.

Using the Master Measure Mapping Tables (see Table 7, Table 8, and Table 9), look at the measures available that correspond to the intersections of interest (boxes in the grid) based on the previous steps (domains and perspectives). For example, if you wish to evaluate *Information Transfer* from the *Patient/Family* perspective, find the *Patient/Family* perspective column and scan down until you connect to the *Information Transfer* row. The box that connects these columns and rows lists the existing measures in the *Atlas* that evaluate information transfer from a patient or family perspective.

Note that interventions could have multiple mechanisms and perspectives and so you will need to do **Steps a through d** for each combination to identify all the relevant existing measures. Also, note that for some combinations, there may not be an existing care coordination measure included in the *Atlas*.

Example

Go to the Master Measure Mapping Table for the *Patient/Family* perspective and look across the *Care Management* domain row. The numbers in this box correspond to related measures that may be of use in evaluating this intervention. For this example, the measures addressing care management from the patient/family perspective are: 11a, 14, 21, and 51.

Continue checking the table(s) for all domains and perspectives of interest in evaluating this intervention. This will provide the complete set of available measures contained in the *Atlas* for evaluating the mechanisms of the intervention. For this example, measure number 21 would be particularly important to review because it maps to the *Patient/Family* perspective of all 7 domains identified as relevant for this intervention.

2. Review relevant measure profiles.

Once you have identified each measure that maps to your intervention and evaluation mechanisms and perspectives, go to the [Measure Profile section](#) to find out more information about each of them. Each profile is preceded by an individualized measure mapping table that shows the care coordination domains and perspectives of the specific measure. The profile highlights the main features of the measure and key resources associated with it. These summaries also provide information on validity and testing, links to care coordination outcomes, application settings and populations, and format and data source. It also maps individual measure items (i.e., survey questions or questionnaire components) to each domain. This information should be used to guide the selection of specific measures for use in evaluating the intervention.

The individualized measure mapping tables provide information on the number of items related to each domain. A filled square (■) indicates that the measure has 3 or more items corresponding to that particular domain or that it is a composite measure related to that domain. An open square (□) indicates that a measure has only 1 or 2 items corresponding to that domain.

Example

There are 37 different measures that map to the *Patient/Family* perspective of the 7 domains identified as relevant to the intervention in this example. To further narrow this list, you may begin by reviewing those measures that map to most of those 7 domains. For example:

Measure #4a. Consumer Assessment of Healthcare Plans and Systems --Adult Primary Care 1.0 (CAHPS) maps to 5 of the 7 relevant domains.

Measure #6. Client Perception of Coordination Questionnaire (CPCQ) maps to 5 of the 7 domains.

Measure #10. Patient Assessment of Care for Chronic Conditions (PACIC) maps to 5 of the 7 relevant domains.

Measure #11. Family Centered-Care Self-Assessment Tool – Family version maps to 6 of the 7 relevant domains.

Measure #13. Primary Care Assessment Survey (PCAS) maps to 5 of the 7 relevant domains.

Measure #16c. Medical Home Family Index and Survey (MHFIS) maps to 5 of the 7 relevant domains.

Measure #17a-b. Primary Care Assessment Tool (PCAT-CE) maps to 5 of the 7 relevant domains.

Measure #21. Resources and Support for Self-Management (RSSM) maps to all 7 relevant domains.

Measure #37. Patient Perceptions of Care (PPOC) maps to 6 of the 7 relevant domains.

Measure #40. Adapted Picker Institute Cancer Survey maps to 6 of the 7 relevant domains.

Measure #6 (CPCQ) has an open square (□) in the box for *Information Transfer* from the *Patient/Family* perspective, indicating that the CPCQ has only 1 or 2 questions focusing on this domain and perspective. In contrast, Measure #4a (CAHPS) has a filled square (■) in the box corresponding to *Information Transfer* from the *Patient/Family* perspective, as it has 3 or more items addressing *Information Transfer* from this perspective. As a result, the CAHPS survey may, for example, be more appropriate for evaluating this component of the intervention. However, it also may require more resources to implement a lengthier measure.

Chapter 6. Measure Maps and Profiles

In the first section of this chapter we present three Master Measure Mapping Tables, one for each perspective—*Patient/Family*, *Health Care Professional(s)*, and *System Representative(s)*. In the second section of this chapter, we present specific measure mapping tables for each individual measure and profiles detailing information about each measure.

Master Measure Mapping Tables

Table 7, Table 8, and Table 9 are Master Measure Mapping Tables for the three care coordination perspectives—*Patient/Family*, *Health Care Professional(s)*, and *System Representative(s)*, respectively. The tables indicate which measures focus on each of the care coordination domains for each perspective. The measure numbers seen in the Master Measure Mapping Tables correspond to the numbers assigned to each measure in Table 10.

Table 5. Care Coordination Master Measure Mapping Table, Patient/Family Perspective[†]

	MEASUREMENT PERSPECTIVE: <i>Patient/Family</i>
CARE COORDINATION ACTIVITIES	
Establish accountability or negotiate responsibility	3, 4a, 4b, 4c, 6, 9b, 11a, 13, 14, 16c, 17a, 17b, 26, 32, 37, 40, 42, 45, 48, 64, 68, 69, 73
Communicate	3, 4a, 4b, 4c, 4d, 4e, 6, 9b, 10, 11a, 13, 14, 16c, 17a, 17b, 24, 25, 26, 29, 30, 31, 32, 33, 37, 38a, 45, 48, 51, 65, 66, 68, 70, 72, 73
<i>Interpersonal communication</i>	3, 4a, 4b, 4c, 6, 10, 11a, 13, 14, 16c, 17a, 17b, 21, 33, 35, 36, 37, 38b, 39, 40, 41a, 41b, 42, 45, 48, 51, 64, 66, 67, 68, 69, 70, 72
<i>Information transfer</i>	3, 4a, 4b, 4c, 6, 9b, 10, 11a, 13, 14, 16c, 17a, 17b, 21, 24, 26, 29, 30, 31, 32, 33, 35, 36, 37, 38a, 38b, 39, 40, 41a, 41b, 42, 45, 48, 49, 51, 65, 67, 68, 69, 70
Facilitate transitions [‡]	
<i>Across settings</i>	4d, 4e, 9a, 9b, 13, 14, 16c, 17a, 17b, 21, 26, 31, 32, 37, 38a, 38b, 40, 42, 51, 64, 65, 67, 68, 70, 72, 73
<i>As coordination needs change</i>	11a, 14, 24, 68
Assess needs and goals	3, 4a, 4b, 4c, 4d, 4e, 6, 9a, 9b, 10, 11a, 13, 14, 16c, 17a, 17b, 21, 24, 25, 26, 30, 31, 32, 33, 35, 37, 38a, 38b, 40, 41a, 41b, 42, 45, 65, 66, 68, 69, 70, 73
Create a proactive plan of care	6, 9b, 10, 11a, 16c, 21, 24, 37, 38a, 40, 65, 66, 67, 68, 69
Monitor, follow up, and respond to change	3, 4a, 4b, 4c, 4d, 4e, 6, 9b, 10, 11a, 13, 16c, 17a, 17b, 21, 24, 25, 26, 29, 31, 32, 33, 36, 37, 39, 40, 41a, 45, 64, 65, 67, 68, 69, 70, 72
Support self-management goals	4a, 4b, 4c, 6, 9a, 9b, 10, 11a, 13, 16c, 17a, 17b, 21, 24, 25, 26, 29, 31, 32, 33, 35, 36, 37, 38a, 38b, 40, 41a, 41b, 64, 65, 66, 67, 68, 70, 72
Link to community resources	10, 11a, 16c, 17b, 21, 24, 31, 33, 38a, 38b, 64, 65, 67, 70, 73
Align resources with patient and population needs	6, 11a, 14, 16c, 17a, 17b, 31, 38a, 38b, 51, 65, 73
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION	
Teamwork focused on coordination	6, 11a, 16c, 24, 25, 29, 30, 35, 36, 39, 40, 65, 68, 69, 70, 73
Health care home	4a, 4b, 4c, 4d, 4e, 16c, 17a, 17b, 45, 51
Care management	11a, 14, 21, 51
Medication management	4a, 4b, 4c, 4d, 4e, 6, 9a, 9b, 10, 17a, 17b, 21, 32, 35, 36, 37, 38a, 38b, 42, 48, 65, 66, 70
Health IT-enabled coordination	4a

[†] A key to measure numbers can be found in Table 10. Index of Measures.

[‡] All measure items addressing transitions were mapped to one of the specific transition types (*across settings* or *as coordination needs change*).

Table 6. Care Coordination Master Measure Mapping Table, Health Care Professional(s) Perspective[†]

	MEASUREMENT PERSPECTIVE: <i>Health Care Professional(s)</i>
CARE COORDINATION ACTIVITIES	
Establish accountability or negotiate responsibility	5, 7a, 7b, 11b, 18, 20, 22b, 38c, 38d, 38e, 43, 46, 62, 74, 77
Communicate	5, 7a, 7b, 11b, 12a, 12b, 17d, 22b, 23, 38e, 38f, 43, 46, 62, 74, 77
<i>Interpersonal communication</i>	7a, 7b, 8, 11b, 12a, 12b, 17d, 18, 22b, 28, 43, 74, 75, 77
<i>Information transfer</i>	5, 8, 11b, 12a, 12b, 17d, 18, 20, 22b, 23, 27, 38c, 38d, 38e, 38f, 62, 74, 75, 77
Facilitate transitions [‡]	
<i>Across settings</i>	5, 17d, 22b, 27, 43, 38c, 38d, 38e, 38f, 74, 75, 77
<i>As coordination needs change</i>	11b, 22b
Assess needs and goals	5, 11b, 12a, 12b, 17d, 20, 23, 27, 38d, 38e, 38f, 43, 46, 74
Create a proactive plan of care	5, 7b, 8, 11b, 12a, 22b, 23, 27, 38e, 38f, 62
Monitor, follow up, and respond to change	5, 11b, 12a, 12b, 17d, 20, 22b, 23, 74, 75, 77
Support self-management goals	5, 8, 11b, 17d, 20, 22b, 38d, 38e, 38f, 74
Link to community resources	5, 11b, 17d, 22b, 27, 38e, 74
Align resources with patient and population needs	5, 8, 11b, 17d, 20, 38d, 38e, 74
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION	
Teamwork focused on coordination	7a, 7b, 11b, 12a, 12b, 18, 23, 27, 28, 43, 46, 62, 74
Health care home	17d, 74
Care management	5, 11b, 22b, 27
Medication management	17d, 18, 20, 38c, 38e, 38f, 63
Health IT-enabled coordination	12a, 17d, 75

[†] A key to measure numbers can be found in Table 10. Index of Measures.

[‡] All measure items addressing transitions were mapped to one of the specific transition types (*across settings* or *as coordination needs change*).

Table 7. Care Coordination Master Measure Mapping Table, System Representative(s) Perspective[†]

	MEASUREMENT PERSPECTIVE: <i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES	
Establish accountability or negotiate responsibility	1, 2, 15, 16a, 16b, 57, 58, 59, 60, 63, 71, 73, 76, 78, 79, 80
Communicate	1, 16a, 16b, 17c, 22a, 34, 71, 73, 76, 80
<i>Interpersonal communication</i>	17c, 22a, 52, 71, 76, 78, 79
<i>Information transfer</i>	1, 2, 15, 16a, 17c, 22a, 34, 44, 49, 50, 52, 53, 54, 56, 57, 58, 59, 60, 63, 71, 73, 76, 79, 80
Facilitate transitions [‡]	
<i>Across settings</i>	15, 16a, 17c, 22a, 49, 50, 55, 57, 58, 59, 60, 63, 71, 73, 76, 78, 80
<i>As coordination needs change</i>	16a, 16b, 22a, 73, 76
Assess needs and goals	1, 16a, 16b, 17c, 44, 49, 73, 76, 79, 80
Create a proactive plan of care	1, 16a, 16b, 22a, 49, 52, 55, 58, 59, 60, 73, 76, 80
Monitor, follow up, and respond to change	1, 2, 3, 17c, 19, 22a, 44, 49, 54, 58, 59, 60, 61, 63, 71, 73, 76, 78, 79, 80
Support self-management goals	1, 16a, 17c, 19, 22a, 34, 49, 71, 73, 76, 79, 80
Link to community resources	1, 16a, 17c, 22a, 44, 52, 73, 80
Align resources with patient and population needs	1, 2, 16a, 16b, 17c, 19, 49, 52, 73, 76, 79, 80
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION	
Teamwork focused on coordination	1, 44, 52, 76, 79, 80
Health care home	2, 3, 16a, 16b, 17c, 19, 47, 71, 76, 80
Care management	15, 16a, 16b, 22a, 49, 76, 79, 80
Medication management	2, 3, 17c, 57, 58, 60, 63, 71, 76, 78
Health IT-enabled coordination	1, 16a, 17c, 19, 34, 44, 50, 71, 73, 76, 79, 80

[†] A key to measure numbers can be found in Table 10. Index of Measures.

[‡] All measure items addressing transitions were mapped to one of the specific transition types (*across settings* or *as coordination needs change*).

Measure Profiles

This section contains measure mapping tables specific to each individual measure. Each individual measure mapping table is followed by a measure profile designed to provide more detailed information on the measure’s purpose, format and data source, perspective, validation and testing, links to outcomes, applications, and key sources. The measure profiles also identify the specific measure items (i.e., survey questions or measure components) that map to each domain. Table 8 below is an index to the measure numbers (far left column) cited in the Master Measure Mapping Tables and the order in which the individual measure mapping tables and profiles appear.

Table 8. Index of Measures

	Measure Title
1.	Assessment of Chronic Illness Care (ACIC)
2.	ACOVE-2 Quality Indicators: Continuity and Coordination of Care Coordination
3.	Coleman Measures of Care Coordination
4.	Consumer Assessment of Healthcare Providers and Systems (CAHPS)
	a. Adult Primary Care 1.0
	b. Adult Specialty Care 1.0
	c. Child Primary Care 1.0
	d. Patient-Centered Medical Home (PCMH) Supplementary Survey Adult Version 2.0*
	e. Patient-Centered Medical Home (PCMH) Supplementary Survey Child Version 1.1*
5.	Care Coordination Measurement Tool (CCMT)
6.	Client Perception of Coordination Questionnaire (CPCQ)
7.	Collaborative Practice Scale (CPS)
	a. Nurse Scale
	b. Physician Scale
8.	Breast Cancer Patient and Practice Management Process Measures
9.	Care Transitions Measure (CTM)
	a. CTM-3
	b. CTM-15
10.	Patient Assessment of Chronic Illness Care (PACIC)†
11.	Family-Centered Care Self-Assessment Tool
	a. Family Version
	b. Provider Version
12.	ICU Nurse-Physician Questionnaire
	a. Long Version
	b. Short Version
13.	Primary Care Assessment Survey (PCAS)
14.	National Survey of Children With Special Health Care Needs (CSHCN)
15.	Head And Neck Cancer Integrated Care Indicators
16.	Medical Home Index (MHI)
	a. Long Version (MHI-LV)
	b. Short Version (MHI-SV)
	c. Medical Home Family Index and Survey (MHFIS)
17.	Primary Care Assessment Tool (PCAT)
	a. Child Expanded Edition (PCAT-CE)
	b. Adult Expanded Edition (PCAT-AE)
	c. Facility Expanded Edition (PCAT – FE)

	Measure Title
	d. Provider Expanded Edition (PCAT – PE)
18.	Physician-Pharmacist Collaboration Instrument (PPCI)
19.	Patient-Centered Medical Home Survey of Structural Capabilities of Primary Care Practice Sites†
20.	Family Medicine Medication Use Processes Matrix (MUPM)
21.	Resources and Support for Self-Management (RSSM)
22.	Continuity of Care Practices Survey
	a. Program Level (CCPS-P)
	b. Individual Level (CCPS-I)
23.	Nursing Home Work Environment and Performance Team Survey†
24.	Measure of Processes of Care (MPOC-28)
25.	Care Evaluation Scale for End-of-Life Care (CES)
26.	Oncology Patients' Perceptions of the Quality of Nursing Care Scale (OPPQNCS)
27.	Care Coordination Services In Pediatric Practices
28.	Collaboration and Satisfaction About Care Decisions (CSACD)
29.	Follow Up Care Delivery
30.	Family Satisfaction in the Intensive Care Unit (FS-ICU 24)
31.	Korean Primary Care Assessment Tool (KPCAT)
32.	Primary Care Multimorbidity Hassles for Veterans With Chronic Illnesses
33.	Primary Care Satisfaction Survey for Women (PCSSW)
34.	Personal Health Records (PHR)
35.	Picker Patient Experience (PPE-15)
36.	Physician Office Quality of Care Monitor (QCM)
37.	Patient Perceptions of Care (PPOC)
38.	PREPARED Survey
	a. Patient Version
	b. Carer Version
	c. Residential Care Staff Version
	d. Community Service Provider Version
	e. Medical Practitioner Version
	f. Modified Medical Practitioner Version
39.	Health Tracking Household Survey
40.	Adapted Picker Institute Cancer Survey
41.	Ambulatory Care Experiences Survey (ACES)
	a. ACES
	b. Primary Care Provider Ambulatory Care Experiences Survey (PCP ACES)*
42.	Patient Perception of Continuity Instrument (PC)
43.	Jefferson Scale of Attitudes Toward Physician-Nurse Collaboration†
44.	Clinical Microsystem Assessment Tool (CMAT)
45.	Components of Primary Care Index (CPCI)
46.	Relational Coordination Survey
47.	Fragmentation of Care Index (FCI)
48.	After-Death Bereaved Family Member Interview
49.	Schizophrenia Quality Indicators for Integrated Care
50.	Degree of Clinical Integration Measures
51.	National Survey for Children's Health (NSCH)
52.	Mental Health Professional HIV/AIDS Point Prevalence and Treatment Experiences Survey Part II
53.	Cardiac Rehabilitation Patient Referral from an Inpatient Setting
54.	Cardiac Rehabilitation Patient Referral from an Outpatient Setting
55.	Patients with a Transient Ischemic Event ER Visit That Had a Follow Up Office Visit
56.	Biopsy Follow Up

	Measure Title
57.	Reconciled Medication List Received by Discharged Patients
58.	Transition Record with Specified Elements Received by Discharged Patients (Inpatient Discharges)
59.	Timely Transmission of Transition Record
60.	Transition Record with Specified Elements Received by Discharged Patients (Emergency Department Discharges)
61.	Melanoma Continuity of Care—Recall System
	Measure Titles New with this Update
62.	Team Survey for Program of All-Inclusive Care for the Elderly (PACE)
63.	Medication Reconciliation for Ambulatory Care
64.	Promoting Healthy Development Survey PLUS – (PHDS-PLUS)
65.	Canadian Survey of Experiences with Primary Health Care Questionnaire
66.	Interpersonal Processes of Care Survey
67.	Brief 5 A's Patient Survey
68.	Patient Perceived Continuity of Care from Multiple Providers
69.	Relational and Management Continuity Survey in Patients with Multiple Long-Term Conditions
70.	Patient Perception of Integrated Care Survey (PPIC)
71.	Safety Net Medical Home Scale (SNMHS)
72.	Parents' Perceptions of Primary Care – (P3C)
73.	Primary Care Questionnaire for Complex Pediatric Patients
74.	Safety Net Medical Home Provider Experience Survey
75.	Rhode Island Physician Health Information Technology Survey
76.	The Joint Commission Patient-Centered Medical Home Self-Assessment Survey
77.	Communication with Referring Physicians Practice Improvement Module (CRP-PIM)
78.	Safe Transitions Community Physician Office Best Practice Measures
79.	National Survey of Physicians Organizations and the Management of Chronic Illness II (NSPO-2)
80.	Patient-Centered Medical Home Assessment (PCMH-A) Tool

*An additional version of this measure was added to this update.

†At the request of the measure developer, the title of this measure was changed from that which appeared in the original *Atlas*.



Measure #1. Assessment of Chronic Illness Care (ACIC)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			□
Communicate			□
<i>Interpersonal communication</i>			
<i>Information transfer</i>			■
Facilitate transitions			
<i>Across settings</i>			
<i>As coordination needs change</i>			
Assess needs and goals			■
Create a proactive plan of care			□
Monitor, follow up, and respond to change			■
Support self-management goals			■
Link to community resources			■
Align resources with patient and population needs			■
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			■*
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			■

Legend:

■ = ≥ 3 corresponding measure items

□ = 1-2 corresponding measure items

*The use of a filled square for this measure indicates that it is a composite score.

Assessment of Chronic Illness Care (ACIC)

Purpose: To evaluate the quality-improvement-related strengths and weaknesses of care delivery for chronic illness.

Format/Data Source: Version 3.5 is a 34-item survey that covers 6 areas: (1) community linkages, (2) self-management support, (3) decision support, (4) delivery system design, (5) information systems, and (6) organization of care. Questions are divided by area of focus (6 areas of chronic illness care) and responses are in the form of a rating scale (Levels A–D).

Date: Measure released in 2000.¹

Perspective: System Representative(s)

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 18, 19
- **Communicate:**
 - *Across health care teams or settings:* 15, 23
 - Information transfer:
 - *Between health care professional(s) and patient/family:* 17, 29
 - *Participants not specified:* 27
- **Assess needs and goals:** 10, 30, 33
- **Create a proactive plan of care:** 28
- **Monitor, follow up, and respond to change:** 20-22, 25, 33
- **Support self-management goals:** 10-13, 30, 34
- **Link to community resources:** 7, 8, 31
- **Align resources with patient and population needs:** 9, 16, 32
- **Teamwork focused on coordination:** 18, composite score
- **Health IT-enabled coordination:** 24-26, 30

Development and Testing: Instrument development was based on areas of system change suggested by the Chronic Care Model (CCM) that have been shown to influence quality of care. The instrument was tested in 108 organizational teams implementing 13-month long quality-improvement collaboratives in health care systems across the U.S. Paired t-tests were used to evaluate the sensitivity of the ACIC to detect system improvements. Testing revealed that all six subscale scores were responsive to system improvements made by care teams. In addition, a significant positive relationship between differences in self-reported ACIC scores and a RAND measure of the presence of chronic care model components in care program implementation was found.²

Link to Outcomes or Health System Characteristics: Moderately strong and positive Pearson correlations were found between ACIC scores and observational ratings of chronic care outcomes made by faculty from each collaborative program, with the exception of the community linkages subscale. Faculty ratings were based on team-prepared cumulative monthly reports, which included process and outcomes data (e.g., chart review data).² Another study

found that, controlling for patient and clinic characteristics, a 1-point increase in the ACIC score was associated with a 16 percent relative decrease in risk for coronary heart disease attributable to modifiable risk factors.³ Another study found that characteristics of the primary care clinic where a patient receives care, as measured by the ACIC, are an important predictor of glucose control.⁴

Logic Model/Conceptual Framework: Chronic Care Model.

Country: United States

Past or Validated Applications*:

- **Patient Age:** Adults, Older Adults
- **Patient Condition:** Combined Chronic Conditions, General Chronic Conditions, Mental Illness & Substance Use Disorders
- **Setting:** Primary Care Facility, Not Setting Specific

*Based on the sources listed below and input from the measure developers.

Notes:

- All instrument items are located online.¹
- This instrument contains 34 items; 25 were mapped.
- Spanish, Thai, German, and Hebrew translations are available online.¹

Sources:

1. Improving Chronic Illness Care Web site. Available at: <http://www.improvingchroniccare.org/index.php?p=Versions&s=297>. Accessed: 23 September 2010.
2. Bonomi AE, Wagner EH, Glasgow RE, et al. Assessment of Chronic Illness Care (ACIC): A practical tool to measure quality improvement. *Health Serv Res* 2002;37(3):791-820.
3. Parchman ML, Zeber JE, Romero RR, et al. Risk of coronary artery disease in type 2 diabetes and the delivery of care consistent with the chronic care model in primary care settings: A STARNet study. *Med Care* 2007;45(12):1129-34.
4. Parchman ML, Pugh JA, Wang CP, et al. Glucose control, self-care behaviors, and the presence of the chronic care model in primary care clinics. *Diabetes Care* 2007;30(11):2849-54.
5. Solberg LI, Crain AL, Sperl-Hillen JM, et al. Care quality and implementation of the chronic care model: A quantitative study. *Ann Fam Med* 2006;4(4):310-16.
6. Sunaert P, Bastiaens H, Feyen L, et al. Implementation of a program for type 2 diabetes based on the Chronic Care Model in a hospital-centered health care system: The Belgian experience. *Health Serv Res* 2009;9(152).

Measure #2. ACOVE-2 Quality Indicators – Continuity and Coordination of Care Coordination

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			□
Communicate			
<i>Interpersonal communication</i>			
<i>Information transfer</i>			■
Facilitate transitions			
<i>Across settings</i>			
<i>As coordination needs change</i>			
Assess needs and goals			
Create a proactive plan of care			
Monitor, follow up, and respond to change			■
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			□
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			□
Care management			
Medication management			■
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

ACOVE-2 Quality Indicators – Continuity and Coordination of Care

Purpose: To assess the quality of care related to coordination and continuity for vulnerable elders at the health-system level across all health conditions and diagnoses.

Format/Data Source: 13 quality indicators from the ACOVE-2 set, specific to care coordination and continuity. Information is obtained from medical records and administrative data.

Date: Measure released in 2001.¹

Perspective: System Representative(s)

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 1
- **Communicate:**
 - Information transfer:
 - *Across health care teams or settings:* 4, 5, 8, 11, 12
- **Monitor, follow up, and respond to change:** 2, 5, 6, 8-10
- **Align resources with patient and population needs:** 13
- **Health care home:** 1
- **Medication management:** 2, 3, 7

Development and Testing: Indicators were developed based on literature review and expert panel consultation. Fifteen initial indicators were reviewed by independent panels of experts to assess validity and feasibility using a variation of the RAND/UCLA Appropriateness Method for developing guidelines to measure the appropriateness of medical care. Thirteen indicators were ultimately found to be valid. They were further evaluated by the American College of Physicians American Society of Internal Medicine Aging Task Force before publication.²

Link to Outcomes or Health System Characteristics: Supporting evidence, mostly from observational studies, supports the linkage between these quality indicators and improved patient health outcomes. For example, several studies cited in Wenger (2004) demonstrate an association between the discharge planning and comprehensive followup activities outlined in the ACOVE indicators and reduced hospital readmissions and costs of care.²

Logic Model/Conceptual Framework: None described in the sources identified.

Country: United States

Past or Validated Applications*:

- **Patient Age:** Adults, Older Adults
- **Patient Condition:** General Population/Not Condition Specific
- **Setting:** Not Setting Specific

*Based on the sources listed below and input from the measure developer.

Notes:

- All instrument items are located online.¹
- This instrument contains 13 items; all 13 were mapped.

Source(s):

1. RAND Health Project: Assessing Care of Vulnerable Elders Web site. Available at: <http://www.rand.org/health/projects/acove/acove2/>. Accessed: 21 September 2010.
2. Wenger NS, Young RT. Quality indicators for continuity and coordination of care in vulnerable elders. JAGS 2007;55(S2):S285-S292.

Measure #3. Coleman Measures of Care Coordination

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility	□		
Communicate	□		
<i>Interpersonal communication</i>	□		
<i>Information transfer</i>	■		
Facilitate transitions			
<i>Across settings</i>			
<i>As coordination needs change</i>			
Assess needs and goals	□		
Create a proactive plan of care			
Monitor, follow up, and respond to change	■		■
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			□
Care management			
Medication management			□
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Coleman Measures of Care Coordination

Purpose: To measure coordination of care post-hospital discharge as part of an evaluation of the association between care coordination and use of the Emergency Department (ED) in elderly patients.

Format/Data Source: Measures of care coordination constructed from data found in a self-reported health status survey, a telephone survey, and health plan utilization and pharmacy administrative data. The following information was collected from administrative data: (1) number of physicians involved with care, (2) number of prescribers involved with care, (3) percent of changes in 1 or more chronic disease medications that resulted in a followup visit within 28 days, (4) percent of missed ambulatory encounters that resulted in a followup visit within 28 days, (5) percent of same day ambulatory encounters that resulted in a followup visit within 28 days.

Date: Measure published in 2002.¹

Perspective: System Representative(s); survey items from Patient/Family perspective

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 1b
- **Communicate:**
 - *Across health care teams or settings:* 1f
 - Interpersonal communication:
 - *Between health care professional(s) and patient/family:* 1i
 - Information transfer:
 - *Between health care professional(s) and patient/family:* 1e
 - *Across health care teams or settings:* 1g
 - *Participants not specified:* 1j
- **Assess needs and goals:** 1k
- **Monitor, follow up, and respond to change:** 4-6, 1a, 1c, 1d
- **Health care home:** 2
- **Medication management:** 3, 4

Development and Testing: Telephone-based survey utilized validated scales of the Components of Primary Care Index (CPCI) measure developed by Flocke.² Relevant administrative data measures were selected based on the evidence-based hypothesis that followup care would be particularly important post-discharge, when patients might be at increased risk for subsequent adverse events (urgent ambulatory visits, missed appointments, or medication changes). Two of the administrative data measures used have been utilized in other studies.^{3,4} Correlations between self-report and administrative-data-derived care coordination measures were examined, and the Person correlations ranged from 0.00 to 0.28, suggesting that the two types of measures were likely measuring distinct aspects of care coordination.

Link to Outcomes or Health System Characteristics: This multicomponent measure was used to measure the impact of care coordination on inappropriate emergency department (ED) use in older managed care enrollees with multiple chronic conditions. The measure was not found to be associated with inappropriate ED use in this study population. The study authors suggest that this may, in part, be due to the inability to adequately distinguish the role of care coordination from other potential factors that influence utilization.¹

Logic Model/Conceptual Framework: None described in the source identified.

Country: United States

Past or Validated Applications*:

- **Patient Age:** Adults, Older Adults
- **Patient Condition:** Combined Chronic Conditions, General Chronic Conditions, Multiple Chronic Conditions
- **Setting:** Emergency Care Facility, Other Outpatient Specialty Care Facility

*Based on the sources listed below and input from the measure developer.

Notes:

- The original measure did not have individual items numbered. In order to properly reference specific items within this profile, we consecutively numbered all measure items with a care coordination construct found in Table 1 of the source article.¹ Additionally, all question items included in Measure 1 (Care Coordination Telephone Survey) found in Appendix 1 were labeled 1a-1m.
- This instrument contains 18 items; 15 were mapped.

Sources:

1. Coleman EA, Eilertsen TB, Magid DJ, et al. The association between care coordination and emergency department use in older managed care enrollees. *Int J Integr Care* 2002;2:1-11.
2. Flocke SA. Measuring attributes of primary care: development of a new instrument. *J Fam Pract* 1997;45(1):64-75.
3. Roblin DW, Juhn PI, Preston BJ, et al. A low-cost approach to prospective identification of impending high cost outcomes. *Med Care* 1999;37(11):1155-63.
4. Chapko MK, Fisher ES, Welch HG. When should this patient be seen again? *Eff Clin Pract* 1999;2(1):37-43.

Measure #4a. Consumer Assessment of Healthcare Providers and Systems (CAHPS) – Adult Primary Care 1.0

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility	□		
Communicate	■		
<i>Interpersonal communication</i>	■		
<i>Information transfer</i>	■		
Facilitate transitions			
<i>Across settings</i>			
<i>As coordination needs change</i>			
Assess needs and goals	■		
Create a proactive plan of care			
Monitor, follow up, and respond to change	□		
Support self-management goals	■		
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home	□		
Care management			
Medication management	□		
Health IT-enabled coordination	□		

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Consumer Assessment of Healthcare Providers and Systems (CAHPS) – Adult Primary Care 1.0

Purpose: To measure adult consumers' experiences with a specific primary care physician and practice.

Format/Data Source: Survey comprised of 31 core items with an additional 64 supplemental items specific to adult primary care. Supplemental items focus on additional aspects of care, including: (1) after hours care, (2) costs of care, (3) doctor role, (4) doctor thoroughness, (5) health improvement, (6) health promotion and education, (7) help with problems or concerns, (8) other doctors, (9) provider communication, (10) provider knowledge of specialist care, (11) doctor recommendation, (12) shared decisionmaking, (13) wait time, (14) care received from specialists, and (15) most recent visit. All questions were answered on a 4-point frequency scale. Responses covered experiences in the last 12 months and were compiled into a nationally available database.¹

Date: Measure published in 2008.¹

Perspective: Patient/Family

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 2
- **Communicate:**
 - *Between health care professional(s) and patient/family:* 14, 15, AE1, AE2, OD2, C2, SD2
 - Interpersonal communication:
 - *Between health care professional(s) and patient/family:* COC3, COC5, OD3-OD5, C1, C5, C7, C8, SD3, SC3, RV3-RV5
 - *Participants not specified:* 18
 - Information transfer:
 - *Between health care professional(s) and patient/family:* 10, 12, 22, OD8, C9
 - *Across health care teams or settings:* PK2, SC6
 - *Participants not specified:* RV6
- **Assess needs and goals:** DT2, HPC1, SD1, SD2, RV7
- **Monitor, follow up, and respond to change:** 22
- **Support self-management goals:** 17, HI1, HP1-HP6, HPC1
- **Health care home:** 1, 2
- **Medication management:** COC1, COC3
- **Health IT-enabled coordination:** AE1, AE2

Development and Testing: Several rounds of revision of the draft instrument (all versions) were based on literature review and feedback from extensive field tests with various health care organizations, cognitive interviews, and stakeholders.¹ The final instrument is endorsed by the National Quality Forum as well as the Ambulatory Care Quality Alliance (AQA).

Link to Outcomes or Health System Characteristics: The CAHPS survey questions and data have been used for evaluating patient experiences with care delivery.² Measure scores related to communication and care coordination were shown to be higher (more favorable) for patients seen by physicians in large, integrated medical groups compared with other practice settings.³ Study populations enrolled in care management programs also showed trends toward higher ratings of patient experience with provider communication via the CAHPS.⁴

Logic Model/Conceptual Framework: None described in the sources identified.

Country: United States

Past or Validated Applications*:

- **Patient Age:** Adults
- **Patient Condition:** General Population/Not Condition Specific
- **Setting:** Primary Care Facility

*Based on the sources listed below.

Notes:

- The final survey includes 3 variations of a multi-item instrument: (1) Adult Primary Care 1.0, (2) Adult Specialty Care 1.0, and (3) Child Primary Care 1.0, which has a beta adaptation (Child Primary Care 2.0). Core question items are the same across the non-beta versions, but wording (patient vs. child; primary care physician vs. specialist) changes according to the instrument. All questions are answered on a 4-point frequency scale. Supplemental items focus on additional aspects of care (shared decisionmaking, costs, prescription medications, etc.). The survey also includes questions to obtain health status and demographic data.
- All instrument items are available online.¹
- The core instrument contains 31 questions; 9 were mapped.
- The supplement contains 64 items; 35 were mapped.
- Validated versions are available online for adult and child, in both English and Spanish.¹
- In addition to the CAHPS Clinical and Group Survey, ambulatory care surveys include: (1) CAHPS Health Plan Survey, (2) CAHPS Surgical Care Survey, (3) ECHO Survey, (4) CAHPS Dental Plan Survey, (5) CAHPS American Indian Survey, and (6) CAHPS Home Health Care Survey.¹
- Facility Surveys are also available, including: (1) CAHPS Hospital Survey, (2) CAHPS In-Center Hemodialysis Survey, and (3) CAHPS Nursing Home Surveys.¹

Sources:

1. CAHPS Survey's and Tools. Agency for Health Research and Quality. Available at: <https://www.cahps.ahrq.gov/default.asp>. Accessed: 20 September 2010.
2. Agency for Health Research and Quality CAHPS Web site, CAHPS Bibliography. Available at: <http://www.cahps.ahrq.gov/content/cahpsoverview/Bibliography.asp?orderby=D&p=101&s=15>. Accessed: 16 September 2010.
3. Rodriguez HP, von Glan T, Rogers WH, et al. Organizational and market influences on physician performance and patient experience measures. *Health Serv Res* 2009;44(3):880-901.

4. Isetts BJ, Schondelmeyer SW, Heaton AH, et al. Effects of collaborative drug therapy management on patients' perceptions of care and health related quality of life. *Res Soc Adm Pharm* 2006;2:129-42.

Measure #4b. Consumer Assessment of Healthcare Providers and Systems (CAHPS) – Adult Specialty Care 1.0

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility	□		
Communicate	■		
<i>Interpersonal communication</i>	■		
<i>Information transfer</i>	■		
Facilitate transitions			
<i>Across settings</i>			
<i>As coordination needs change</i>			
Assess needs and goals	□		
Create a proactive plan of care			
Monitor, follow up, and respond to change	□		
Support self-management goals	■		
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home	□		
Care management			
Medication management	□		
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Consumer Assessment of Healthcare Providers and Systems (CAHPS) — Adult Specialty Care 1.0

Purpose: To measure adult consumers' experiences with a specialty care physician and practice.

Format/Data Source: Survey comprised of 31 core items with an additional 20 supplemental items specific to adult specialty care. Supplemental items focus on additional aspects of care, including: (1) care received, (2) care coordination, (3) costs of care (prescription medications, etc.), (4) role of doctor, (5) shared decisionmaking, and (6) procedures done by doctor. All questions were answered on a 4-point frequency scale. Responses covered experiences in the last 12 months and were compiled into a nationally available database.¹

Date: Measure released in 2008.¹

Perspective: Patient/Family

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 2, DR1
- **Communicate:**
 - *Between health care professional(s) and patient/family:* 14, 15, CC1, SD1, SD2
 - Interpersonal communication:
 - *Between health care professional(s) and patient/family:* DC1-3, SD3
 - Information transfer:
 - *Between health care professional(s) and patient/family:* 10, 12, 22, SP2
 - *Participants not specified:* 18
- **Assess needs and goals:** SD1, SD2
- **Monitor, follow up, and respond to change:** 22
- **Support self-management goals:** 17, DC4, SP5, SP6
- **Health care home:** 1, 2
- **Medication management:** CC1

Development and Testing: The draft instrument was revised based on a literature review and feedback that was provided from extensive field tests with various health care organizations, cognitive interviews, and stakeholders.¹ The final instrument is endorsed by the National Quality Forum as well as the Ambulatory Care Quality Alliance (AQA).

Link to Outcomes or Health System Characteristics: The CAHPS survey questions and data have been used for evaluating patient experiences with care delivery.² Measure scores related to communication and care coordination were shown to be higher (more favorable) for patients seen by physicians in large, integrated medical groups compared with other practice settings.³ Study populations enrolled in care management programs also showed trends toward higher ratings of patient experience with provider communication via the CAHPS.⁴

Logic Model/Conceptual Framework: None described in the sources identified.

Country: United States

Past or Validated Applications*:

- **Patient Age:** Adults
- **Patient Condition:** General Population/Not Condition Specific
- **Setting:** Other Outpatient Specialty Care Facility

*Based on the sources listed below.

Notes:

- The final survey includes 3 variations of a multi-item instrument: (1) Adult Primary Care 1.0, (2) Adult Specialty Care 1.0, and (3) Child Primary Care 1.0, which has a beta adaptation (Child Primary Care 2.0). Core question items are the same across the non-beta versions, but wording (patient vs. child; primary care physician vs. specialist) changes according to the instrument. All questions are answered on a 4-point frequency scale. Supplemental items focus on additional aspects of care (shared decisionmaking, costs, prescription medications, etc.). The survey also includes questions to obtain health status and demographic data.
- All instrument items are located online.¹
- The core instrument contains 31 questions; 9 were mapped.
- The supplement contains 51 items; 21 were mapped.
- Validated versions are available online for adult and child, in both English and Spanish.¹
- In addition to the CAHPS Clinical and Group Survey, ambulatory care surveys include: (1) CAHPS Health Plan Survey, (2) CAHPS Surgical Care Survey, (3) ECHO Survey, (4) CAHPS Dental Plan Survey, (5) CAHPS American Indian Survey, and (6) CAHPS Home Health Care Survey.¹
- Facility Surveys are also available, including: (1) CAHPS Hospital Survey, (2) CAHPS In-Center Hemodialysis Survey, and (3) CAHPS Nursing Home Surveys.¹

Sources:

1. CAHPS Survey's and Tools. Agency for Health Research and Quality. Available at: <https://www.cahps.ahrq.gov/default.asp>. Accessed: 20 September 2010.
2. Agency for Health Research and Quality CAHPS Web site, CAHPS Bibliography. Available at: <http://www.cahps.ahrq.gov/content/cahpsoverview/Bibliography.asp?orderby=D&p=101&s=15>. Accessed: 16 September 2010.
3. Rodriguez HP, von Glan T, Rogers WH, et al. Organizational and market influences on physician performance and patient experience measures. *Health Serv Res* 2009;44(3):880-901.
4. Isetts BJ, Schondelmeyer SW, Heaton AH, et al. Effects of collaborative drug therapy management on patients' perceptions of care and health related quality of life. *Res Soc Adm Pharm* 2006;2:129-42.

Measure #4c. Consumer Assessment of Healthcare Providers and Systems (CAHPS) – Child Primary Care (1.0)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility	□		
Communicate	□		
<i>Interpersonal communication</i>	■		
<i>Information transfer</i>	■		
Facilitate transitions			
<i>Across settings</i>			
<i>As coordination needs change</i>			
Assess needs and goals	■		
Create a proactive plan of care			
Monitor, follow up, and respond to change	□		
Support self-management goals	■		
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home	□		
Care management			
Medication management	□		
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Consumer Assessment of Healthcare Providers and Systems (CAHPS) – Child Primary Care (1.0)

Purpose: To measure consumers' experiences with a specific primary care physician and practice.

Format/Data Source: Survey comprised of 30 core items with an additional 17 supplemental items specific to child primary care. Supplemental items focus on additional aspects of care, including: (1) after-hours care, (2) behavioral health, (3) screening items for children with chronic conditions, (4) doctor communication with child, (5) doctor communication, (6) doctor thoroughness, (7) health improvement, (8) Identification of site of visit, (9) prescription medications, (10) provider knowledge of specialist care, and (11) shared decisionmaking. All questions were answered on a 4-point frequency scale. Responses covered experiences in the last 12 months and were compiled into a nationally available database.¹

Date: Measure published in 2008.¹

Perspective: Patient/Family

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 2
- **Communicate:**
 - *Between health care professional(s) and patient/family:* 14, 15
 - Interpersonal communication:
 - *Between health care professional(s) and patient/family:* DC1-DC4, SD2, SD4
 - *Participants not specified:* 18
 - Information transfer:
 - *Between health care professional(s) and patient/family:* 10, 12, 22, SD3
 - *Across health care teams or settings:* PK2
- **Assess needs and goals:** DT2, SD1, SD2
- **Monitor, follow up, and respond to change:** 22
- **Support self-management goals:** 17, DC3, HI1
- **Health care home:** 1, 2
- **Medication management:** PM1

Development and Testing: Several rounds of revision of the draft instrument (all versions) were based on literature review and feedback from extensive field tests with various health care organizations, cognitive interviews, and stakeholders.¹ The final instrument is endorsed by the National Quality Forum as well as the Ambulatory Care Quality Alliance (AQA).

Link to Outcomes or Health System Characteristics: The CAHPS survey questions and data have been used for evaluating patient experiences with care delivery.² Measure scores related to communication and care coordination were shown to be higher (more favorable) for patients seen by physicians in large, integrated medical groups compared with other practice settings.³

Study populations enrolled in care management programs also showed trends toward higher ratings of patient experience with provider communication via the CAHPS.⁴

Logic Model/Conceptual Framework: None described in the sources identified.

Country: United States

Past or Validated Applications*:

- **Patient Age:** Children
- **Patient Condition:** General Population/Not Condition Specific
- **Setting:** Primary Care Facility

*Based on the sources listed below.

Notes:

- The final survey includes 3 variations of a multi-item instrument: (1) Adult Primary Care 1.0, (2) Adult Specialty Care 1.0, and (3) Child Primary Care 1.0, which has a beta adaptation (Child Primary Care 2.0). Core question items are the same across the non-beta versions, but wording (patient vs. child; primary care physician vs. specialist) changes according to the instrument. All questions are answered on a 4-point frequency scale. Supplemental items focus on additional aspects of care (shared decisionmaking, costs, prescription medications, etc.). The survey also includes questions to obtain health status and demographic data.
- All instrument items are available online.¹
- The core instrument contains 31 items; 9 were mapped.
- The supplement contains 17 items; 12 were mapped.
- Validated versions are available online for adult and child, in both English and Spanish.¹
- In addition to the CAHPS Clinical and Group Survey, ambulatory care surveys include: (1) CAHPS Health Plan Survey, (2) CAHPS Surgical Care Survey, (3) ECHO Survey, (4) CAHPS Dental Plan Survey, (5) CAHPS American Indian Survey, and (6) CAHPS Home Health Care Survey.¹
- Facility Surveys are also available, including: (1) CAHPS Hospital Survey, (2) CAHPS In-Center Hemodialysis Survey, and (3) CAHPS Nursing Home Surveys.¹

Sources:

1. CAHPS Survey's and Tools. Agency for Health Research and Quality. Available at: <https://cahps.ahrq.gov/> Accessed 6 May 2014.
2. Agency for Health Research and Quality CAHPS Web site, CAHPS Bibliography. Available at: <https://cahps.ahrq.gov/> Accessed 6 May 2014.
3. Rodriguez HP, von Glan T, Rogers WH, et al. Organizational and market influences on physician performance and patient experience measures. *Health Serv Res* 2009;44(3):880-901.
4. Isetts BJ, Schondelmeyer SW, Heaton AH, et al. Effects of collaborative drug therapy management on patients' perceptions of care and health related quality of life. *Res Soc Adm Pharm* 2006;2:129-42.

Measure #4d. CAHPS Patient-Centered Medical Home Supplementary Survey Adult Version 2.0

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate	■		
<i>Interpersonal communication</i>			
<i>Information transfer</i>			
Facilitate transitions			
<i>Across settings</i>	□		
<i>As coordination needs change</i>			
Assess needs and goals	□		
Create a proactive plan of care			
Monitor, follow up, and respond to change	□		
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home	■*		
Care management			
Medication management	■		
Health IT-enabled coordination			

Legend:

■ = ≥ 3 corresponding measure items

□ = 1-2 corresponding measure items

*Indicates that the measure as a whole focuses on the health care home model.

CAHPS Patient-Centered Medical Home Supplementary Survey Adult Version 2.0

Purpose: To assess processes of care and patients' experiences with care provided by patient-centered medical homes (PCMH). The PCMH supplementary survey consists of supplementary items designed for use with the CAHPS Clinician & Group survey adult version 2.0.

Format/Data Source: An 18-item supplemental survey that can be added to the CAHPS Clinician & Group (CG-CAHPS) Version 2.0 survey. Patients complete the survey, which addresses six domains: (1) access to care, (2) comprehensiveness, (3) self-management support, (4) shared decisionmaking, (5) coordination of care, and (6) information about care and appointments.¹ Six composites may be calculated using data from the combined CG-CAHPS with PCMH supplement.²

Date: Measure released in 2011.¹

Perspective: Patient/Family

Measure Item Mapping:

- **Communicate:** PCMH2, PCMH5, PCMH11
 - *Between health care professional(s) and patient/family:* PCMH2, PCMH5
 - *Across health care teams or settings:* PCMH11
- **Facilitate transitions:**
 - Across settings: PCMH11
- **Assess needs and goals:** PCMH12, PCMH13
- **Monitor, follow up, and respond to change:** PCMH5
- **Health care home:** PCMH2, PCMH5, PCMH6, PCMH7, PCMH8, PCMH9, PCMH11, PCMH12, PCMH13, PCMH15*
- **Medication Management:** PCMH6, PCMH7, PCMH8, PCMH9, PCMH15

*The instrument as a whole focuses on the Health care home model. Only those items that map to at least one other care coordination domain are listed here.

Development and Testing: The CAHPS PCMH supplement was tested in 1,790 patients from 10 adult practices in the Boston area. The Cronbach's alpha for composite scores ranged between 0.61 and 0.91 for the combined adult survey (core CG-CAHPS plus PCMH supplement). Practice-level reliability of individual PCMH supplement items ranged from 0.09 to 0.92. Some individual items were retained despite low practice-level reliability due to high salience to the principles of the PCMH model and evidence that they performed well in other CAHPS surveys. Items with low reliability were modified after the field test in response to qualitative feedback.²

Link to Outcomes or Health System Characteristics: None described in the source identified.

Logic Model/Conceptual Framework: The CAHPS PCMH supplementary survey is based on the principles of the patient-centered medical home.³

Country: United States

Past or Validated Applications*:

- **Patient Age:** Adults
- **Patient Condition:** General Population or Not Condition Specific
- **Setting:** Primary Care Facility, Other Outpatient Specialty Care Facility

*Based on the sources listed below and input from the measure developers.

Notes:

- All instrument items are located online.⁴
- Additional information about the survey is available online.¹
- This instrument consists of 18 items, of which 10 were mapped.
- A version of the PCMH Supplement Survey is also available for children. It contains 11 of the 18 items included in the adult version and is intended for inclusion in the CAHPS Clinician and Group Child Version 1.1 Survey.⁵ See measure 4e for more information.
- A Spanish language version is available online.⁶
- In addition to the CAHPS Clinical and Group Survey, ambulatory care surveys include: (1) CAHPS Health Plan Survey, (2) CAHPS Surgical Care Survey, (3) ECHO Survey, (4) CAHPS Dental Plan Survey, (5) CAHPS American Indian Survey, and (6) CAHPS Home Health Care Survey.¹
- Facility Surveys are also available, including: (1) CAHPS Hospital Survey, (2) CAHPS In-Center Hemodialysis Survey, and (3) CAHPS Nursing Home Surveys.¹

Sources:

1. Agency for Healthcare Research and Quality. About the CAHPS Patient-Centered Medical Home (PCMH) Item Set. Washington, DC: 2011. Document No. 1314.
2. Scholle SH, Vuong O, Ding L, et al. Development of and field test results for the CAHPS PCMH Survey. *Med Care* 2012;50 Suppl:S2-10.
3. American Academy of Family Physicians, American Academy of Pediatrics, American College of Physicians, et al. Joint Principles of the Patient-Centered Medical Home. Washington, DC: Patient-Centered Primary Care Collaborative; 2007.
4. Supplemental Items for the Adult Surveys 2.0. Agency for Healthcare Research and Quality. Available at: https://cahps.ahrq.gov/surveys-guidance/item-sets/2357a_Adult_Supp_Eng_2.pdf Accessed: May 6 2014.
5. Supplemental Items for the Child Surveys 1.1. Agency for Healthcare Research and Quality. Available at: https://cahps.ahrq.gov/surveys-guidance/item-sets/CG/1358a_Child_Supp_Eng.pdf Accessed: May 6 2014.
6. CAHPS Clinician and Group Surveys. Agency for Healthcare Research and Quality. Available at: https://cahps.ahrq.gov/surveys-guidance/item-sets/CG/1358a_Child_Supp_Eng.pdf Accessed: May 6 2014.

Measure #4e. CAHPS Patient-Centered Medical Home Supplementary Survey Child Version 1.1

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate	■		
<i>Interpersonal communication</i>			
<i>Information transfer</i>			
Facilitate transitions			
<i>Across settings</i>	□		
<i>As coordination needs change</i>			
Assess needs and goals	□		
Create a proactive plan of care			
Monitor, follow up, and respond to change	□		
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home	■*		
Care management			
Medication management	□		
Health IT-enabled coordination			

Legend:

■ = ≥ 3 corresponding measure items

□ = 1-2 corresponding measure items

*Indicates that the measure as a whole focuses on the health care home model.

CAHPS Patient-Centered Medical Home Supplementary Survey Child Version 1.1

Purpose: To assess processes of care and patients' experiences with care provided by patient-centered medical homes (PCMH). The PCMH supplementary survey consists of supplementary items designed for use with the CAHPS Clinician & Group survey child version 1.1.

Format/Data Source: An 11-item supplemental survey that can be added to the CAHPS Clinician & Group (CG-CAHPS) survey child version 1.1. Patients complete the survey, which addresses six domains: (1) access to care, (2) comprehensiveness, (3) self-management support, (4) shared decisionmaking, (5) coordination of care and (6) information about care and appointments.¹ Six composites may be calculated using data from the combined CG-CAHPS with PCMH supplement.²

Date: Measure released in 2011.¹

Perspective: Patient/Family

Measure Item Mapping:

- **Communicate:** PCMH2, PCMH5, PCMH7
 - *Between health care professional(s) and patient/family:* PCMH2, PCMH5
 - *Across health care teams or settings:* PCMH7
- **Facilitate transitions:**
 - Across settings: PCMH7
- **Assess needs and goals:** PCMH8, PCMH9
- **Monitor, follow up, and respond to change:** PCMH5
- **Health care home:** PCMH2, PCMH5, PCMH7, PCMH8, PCMH9, PCMH11*
- **Medication Management:** PCMH11

*The instrument as a whole focuses on the Health care home model. Only those items that map to at least one other care coordination domain are listed here.

Development and Testing: The CAHPS PCMH supplement was tested in 3,129 parents of pediatric patients from 33 child practices in the Boston area. The Cronbach's alpha for composite scores ranged between 0.57 and 0.88 for the combined child survey (core CG-CAHPS plus PCMH supplement). Practice-level reliability of individual PCMH supplement items ranged from 0.11 to 0.95. Some individual items were retained despite low practice-level reliability due to high salience to the principles of the PCMH model and evidence that they performed well in other CAHPS surveys. Items with low reliability were modified after the field test in response to qualitative feedback.²

Link to Outcomes or Health System Characteristics: None described in the source identified.

Logic Model/Conceptual Framework: The CAHPS PCMH supplementary survey is based on the principles of the patient-centered medical home.³

Country: United States

Past or Validated Applications*:

- **Patient Age:** Children
- **Patient Condition:** General Population or Not Condition Specific
- **Setting:** Primary Care Facility, Other Outpatient Specialty Care Facility

*Based on the sources listed below and input from the measure developers.

Notes:

- All instrument items are located online.⁴
- Additional information about the survey is available online.¹
- This instrument consists of 11 items, of which 6 were mapped.
- A version of the PCMH Supplement Survey is also available for adults. It contains the 11 items included in the child survey, plus several additional items. The adult version is intended for inclusion in the CAHPS Clinician and Group Adult Version 2.0 Survey.⁴ See measure 4d for more information.
- A Spanish language version is available online.⁵
- In addition to the CAHPS Clinical and Group Survey, ambulatory care surveys include: (1) CAHPS Health Plan Survey, (2) CAHPS Surgical Care Survey, (3) ECHO Survey, (4) CAHPS Dental Plan Survey, (5) CAHPS American Indian Survey, and (6) CAHPS Home Health Care Survey.¹
- Facility Surveys are also available, including: (1) CAHPS Hospital Survey, (2) CAHPS In-Center Hemodialysis Survey, and (3) CAHPS Nursing Home Surveys.¹

Sources:

1. Agency for Healthcare Research and Quality. About the CAHPS Patient-Centered Medical Home (PCMH) Item Set. Washington, DC: 2011. Document No. 1314.
2. Scholle SH, Vuong O, Ding L, et al. Development of and field test results for the CAHPS PCMH Survey. *Med Care* 2012;50 Suppl:S2-10.
3. American Academy of Family Physicians, American Academy of Pediatrics, American College of Physicians, et al. Joint Principles of the Patient-Centered Medical Home. Washington, DC: Patient-Centered Primary Care Collaborative; 2007.
4. Supplemental Items for the Child Surveys 1.1. Agency for Healthcare Research and Quality. Available at: https://www.cahps.ahrq.gov/clinician_group/cgsurvey/childsupplementalitemseng1-1.pdf. Accessed: May 20 2012.
5. CAHPS Clinician and Group Surveys. Agency for Healthcare Research and Quality. Available at: https://www.cahps.ahrq.gov/clinician_group/. Accessed: May 20 2013.

Measure #5. Care Coordination Measurement Tool (CCMT)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility		□	
Communicate		■	
<i>Interpersonal communication</i>			
<i>Information transfer</i>		■	
Facilitate transitions			
<i>Across settings</i>		■	
<i>As coordination needs change</i>			
Assess needs and goals		□	
Create a proactive plan of care		□	
Monitor, follow up, and respond to change		■	
Support self-management goals		□	
Link to community resources		■	
Align resources with patient and population needs		□	
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management		□	
Medication management			
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Care Coordination Measurement Tool (CCMT)

Purpose: To collect information (activities, resource-use, outcomes, time) on care coordination encounters for the purpose of determining the cost of care coordination and related outcomes.

Care coordination encounters were defined as “any activity performed by any primary care office-based personnel that contributed to the development and/or implementation of a plan of care for a patient or family.”²

Format/Data Source: Written form placed at office workstations and filled out by health care providers and staff at the time the care coordination encounter occurs. Providers received instruction on how to fill out the form.

Date: Measure published in 2004.¹

Perspective: Health Care Professional(s)

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** Staff
- **Communicate:**
 - *Between health care professional(s) and patient/family:* Activity to Fulfill Needs: 1a, 1b, 2a, 2b
 - *Within teams of health care professionals:* Activity to Fulfill Needs: 1e, 1g, 2e, 2g, 5
 - *Across health care teams or settings:* Activity to Fulfill Needs: 1c-h, 2c-h, 3a-d, 10a-d
 - *Participants not specified:* Activity to Fulfill Needs: 7a, 7b, 12
 - Information transfer:
 - *Participants not specified:* Activity to Fulfill Needs: 4, 6, 8; Outcomes: 2k
- **Facilitate transitions:**
 - Across settings: Outcomes: 2b-I; Care Coordination Needs: 3; Focus Encounter: 6
- **Assess needs and goals:** Outcomes: 2m, 2n
- **Create a proactive plan of care:** Activity to Fulfill Needs: 11
- **Monitor, follow up, and respond to change:** Outcomes: 2j; Care Coordination Needs :2, 4
- **Support self-management goals:** Outcomes: 2a
- **Link to community resources:** Focus Encounter: 3, 4, 8
- **Align resources with patient and population needs:** Outcomes: 2l
- **Care management:** Care Coordination Needs: 5; Focus Encounter: 7;

Development and Testing: Pilot testing was conducted in several general pediatric practices with varying sizes, locations, patient demographics, and care coordination models. The tool was successfully used to document care coordination encounters during the daily operations of pediatric primary care offices. Statistical comparisons across practices were not performed due to heterogeneity in practice type, sample design, and study methodology.²

Link to Outcomes or Health System Characteristics: Use of the CCMT provided outcomes-based information on trends in costs, resource utilization, and patient characteristics associated with care coordination activities for children with special health care needs. Information included associations between patient complexity and time spent coordinating care, number of encounters, and type of care coordination required. Estimates of the annual cost of the time spent coordinating care and average cost of care coordination activities were also calculated based on data collected.¹

Logic Model/Conceptual Framework: None described in the sources identified.

Country: United States

Past or Validated Applications*:

- **Patient Age:** Children
- **Patient Condition:** Combined Chronic Conditions, Children with Special Health Care Needs, Other – cardiology ambulatory care and cleft lip and palate care, General Population/Not Condition Specific
- **Setting:** Primary Care Facility, Other Outpatient Specialty Care Facility

*Based on the sources listed below and input from the measure developer.

Notes:

- All instrument items are located in the Appendix of the source article.²
- This instrument contains 76 items; 56 were mapped.

Sources:

1. Antonelli RC, Antonelli DM. Providing a medical home: The cost of care coordination services in a community-based, general pediatric practice. *Pediatrics* 2004;113:1522-28.
2. Antonelli RC, Stille CJ, Antonelli DM. Care coordination for children and youth with special health care needs: A descriptive, multi-site study of activities, personnel costs and outcomes. *Pediatrics* 2008;122:e209-16.

Measure #6. Client Perception of Coordination Questionnaire (CPCQ)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility	□		
Communicate	■		
<i>Interpersonal communication</i>	□		
<i>Information transfer</i>	□		
Facilitate transitions			
<i>Across settings</i>			
<i>As coordination needs change</i>			
Assess needs and goals	□		
Create a proactive plan of care	□		
Monitor, follow up, and respond to change	□		
Support self-management goals	■		
Link to community resources			
Align resources with patient and population needs	□		
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination	□		
Health care home			
Care management			
Medication management	□		
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Client Perceptions of Coordination Questionnaire (CPCQ)

Purpose: To measure patient-centered care and care coordination in health care delivery from a consumer perspective.

Format/Data Source: 31-item, written, self-administered survey addressing 6 domains of care coordination: (1) identification of need, (2) access to care, (3) patient participation, (4) patient-provider communication, (5) inter-provider communication, (6) global assessment of care. These six domains spanned 4 areas of health care provision: (1) overall care, (2) general practitioner (GP) care, (3) nominated provider care, and (4) carers. Questions are answered via Likert scale responses.

Date: Measure published in 2003.¹

Perspective: Patient/Family

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 9
- **Communicate:**
 - *Between health care professional(s) and patient/family:* 11, 13
 - *Across health care teams or settings:* 17, 25
 - Interpersonal communication:
 - *Between health care professional(s) and patient/family:* 19, 27
 - Information transfer:
 - *Between health care professional(s) and patient/family:* 6
 - *Across health care teams or settings:* 5
- **Assess needs and goals:** 16
- **Create a proactive plan of care:** 19, 27
- **Monitor, follow up, and respond to change:** 10
- **Support self-management goals:** 14, 18, 20, 26, 28
- **Align resources with patient and population needs:** 3
- **Teamwork focused on coordination:** 7
- **Medication management:** 4

Development and Testing: The instrument was developed through iterative item generation. Most items achieved excellent completion and comprehension rates, and the instrument was transferable among chronically unwell populations. Six scales were identified based on principle components analysis (acceptability, received care, GP, nominated provider, client comprehension, and client capacity). Construct validity, comprehensibility, and internal consistency were demonstrated for all scales but client comprehension and capacity. Construct validity was further supported by the finding that patients with chronic pain syndromes reported significantly worse experiences for all items. Individual items in the instrument were found to be relevant to care coordination, although authors suggest further testing and possible revisions for the measure. Testing was conducted in association with the Australian Coordinated Care Trials using data from 1193 survey responses.¹

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: None described in the source identified.

Country: Australia

Past or Validated Applications*:

- **Patient Age:** Adults, Older Adults
- **Patient Condition:** Combined Chronic Conditions, General Chronic Conditions, Multiple Chronic Conditions, General Population/Not Condition Specific
- **Setting:** Primary Care Facility; Other Outpatient Specialty Care Facility

*Based on the source listed below and input from the measure developer.

Notes:

- All instrument items are located in the Appendix of the source article.¹
- This instrument contains 31 items; 23 were mapped.

Source:

1. McGuinness C, Sibthorpe B. Development and initial validation of a measure of coordination of health care. *Int J Qual Health Care* 2003;15(4):309-18.

Measure #7a. Collaborative Practice Scale (CPS) – Nurse Scale

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility		■	
Communicate		■	
<i>Interpersonal communication</i>		■	
<i>Information transfer</i>			
Facilitate transitions			
<i>Across settings</i>			
<i>As coordination needs change</i>			
Assess needs and goals			
Create a proactive plan of care			
Monitor, follow up, and respond to change			
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination		■	
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Collaborative Practice Scale (CPS) – Nurse Scale

Purpose: To assess the interactions between nurses and physicians during typical delivery-of-care processes.

Format/Data Source: 9-item, self-administered, written survey. Questions are answered on a 6-point Likert scale and totaled. Higher scores indicate greater collaboration. For the purposes of this instrument, collaboration is defined as “interactions between nurse and physician that enable the knowledge and skills of both professionals to synergistically influence the patient care provided.”¹ The instrument focuses on 2 factors: (1) communication and (2) clarification of responsibilities.

Date: Measure published in 1985.¹

Perspective: Health Care Professional(s)

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 1-4, 6, 9
- **Communicate:**
 - *Within teams of health care professionals:* 3, 5, 7-9
 - Interpersonal communication:
 - *Within teams of health care professionals:* 1, 2, 4, 6
- **Teamwork focused on coordination:** 1-9

Development and Testing: The instrument was tested in a sample of 94 physicians. Significant test-retest reliability was established, as was construct validity. Factor analysis confirmed the presence of two distinct factors measuring unique components of collaboration. Concurrent validity was tested by comparison of the CPS to 2 other instruments: (1) Management of Differences Exercise (MODE) and (2) The Health Role Expectation Index (HREI). A correlation was found only between the CPS and the HREI. Predictive validity was assessed by comparing peer reviews of interprofessional practice by nurses for physicians and by physicians for nurses with the CPS scores. Adequate validity correlations were not found for the nurse scale. Authors suggest that further testing for predictive and concurrent validity is warranted.¹

Link to Outcomes or Health System Characteristics: Measure developers indicate that further testing of theory-linked factors related to the instruments is necessary.

Logic Model/Conceptual Framework: None described in the sources identified.

Country: United States

Past or Validated Applications*:

- **Patient Age:** Not Applicable
- **Patient Condition:** Not Applicable

- **Setting:** Not Setting Specific

*Based on the sources listed below.

Notes:

- All instrument items are located in Table 1 of the source article.¹
- This instrument contains 9 items; all 9 were mapped.

Sources:

1. Weiss SJ, Davis HP. Validity and reliability of the collaborative practice scales. *Nurs Res* 1985;34:299-305.
2. Dougherty MB, Larson E. A review of instruments measuring nurse-physician collaboration. *J Nurs Adm* 2005;35(5):244-53.

Measure #7b. Collaborative Practice Scale (CPS) – Physician Scale

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility		■	
Communicate		□	
<i>Interpersonal communication</i>		■	
<i>Information transfer</i>			
Facilitate transitions			
<i>Across settings</i>			
<i>As coordination needs change</i>			
Assess needs and goals			
Create a proactive plan of care		□	
Monitor, follow up, and respond to change			
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination		■	
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Collaborative Practice Scale (CPS) – Physician Scale

Purpose: To assess the interactions between nurses and physicians during typical delivery of care processes.

Format/Data Source: 10-item, self-administered, written survey. Questions are answered on a 6-point Likert scale and totaled. Higher scores indicate greater collaboration. For the purposes of this instrument, collaboration is defined as “interactions between nurse and physician that enable the knowledge and skills of both professionals to synergistically influence the patient care provided.”¹ The instrument focuses on 2 factors: (1) communication and (2) clarification of responsibilities.

Date: Measure published in 1985.¹

Perspective: Health Care Professional(s)

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 6, 8, 10
- **Communicate:**
 - *Between health care professional(s) and patient/family:* 1
 - Interpersonal communication:
 - *Within teams of health care professionals:* 2, 3, 5, 6, 8-10
- **Create a proactive plan of care:** 4
- **Teamwork focused on coordination:** 1-10

Development and Testing: The instrument was tested in a sample of 94 physicians. Significant test-retest reliability was established, as was construct validity. Factor analysis confirmed the presence of two distinct factors measuring unique components of collaboration. Concurrent validity was tested by comparison of the CPS to 2 other instruments: (1) Management of Differences Exercise (MODE) and (2) The Health Role Expectation Index (HREI). A correlation was found only between the CPS and the HREI. Predictive validity was assessed by comparing peer reviews of interprofessional practice by nurses for physicians and by physicians for nurses with the CPS scores. Adequate validity correlations were not found for the nurse scale. Authors suggest that further testing for predictive and concurrent validity is warranted.¹

Link to Outcomes or Health System Characteristics: Measure developers indicate that further testing of theory-linked factors related to the instruments is necessary.

Logic Model/Conceptual Framework: None described in the sources identified.

Country: United States

Past or Validated Applications*:

- **Patient Age:** Not Applicable
- **Patient Condition:** Not Applicable

- **Setting:** Not Setting Specific

*Based on the sources listed below.

Notes:

- All instrument items are located in Table 1 of the source article.¹
- This instrument contains 10 items; all 10 were mapped.

Sources:

1. Weiss SJ, Davis HP. Validity and reliability of the collaborative practice scales. *Nurs Res* 1985;34:299-305.
2. Dougherty MB, Larson E. A review of instruments measuring nurse-physician collaboration. *J Nurs Adm* 2005;35(5):244-53.

Measure #8. Breast Cancer Patient and Practice Management Process Measures Surgeon Survey

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			
<i>Interpersonal communication</i>		■	
<i>Information transfer</i>		■	
Facilitate transitions			
<i>Across settings</i>			
<i>As coordination needs change</i>			
Assess needs and goals			
Create a proactive plan of care		■	
Monitor, follow up, and respond to change			
Support self-management goals		■	
Link to community resources			
Align resources with patient and population needs		■	
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Breast Cancer Patient and Practice Management Process Measures Surgeon Survey

Purpose: To evaluate quality of treatment during the initial course of therapy for breast cancer patients and address variation in patient and practice management processes that may be associated with better outcomes.

Format/Data Source: Mailed, self-administered, 17-item survey addressing 5 measures: (1) multidisciplinary clinician communication, (2) availability of clinical information, (3) patient decision support, (4) access to information technology, and (5) practice feedback initiatives.

Date: Measure published in 2010.¹

Perspective: Health Care Professional(s)

Measure Item Mapping:

- **Communicate:**
 - Interpersonal communication:
 - *Across health care teams or settings:* 1-3
 - Information transfer:
 - *Across health care teams or settings:* 4-6
- **Create a proactive plan of care:** 1-3
- **Support self-management goals:** 7, 8, 10-11
- **Align resources with patient and population needs:** 7-8, 10, 11

Development and Testing: The development of the measures was based on a literature review and prior research conducted by the authors. The items were all pretested on a convenience sample of 10 surgeons, and the scales were piloted on a convenience sample of 34 surgeons. Scale reliability testing was conducted, and each of the scales had a Cronbach's alpha of above 9. Confirmatory factor analysis was also conducted for all of the patient management domain items and confirmed the predominant loading of the items on their hypothesized subdomains.¹

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: The measures were based on the Chronic Care Model and a previously developed framework for cancer care quality measures.²

Country: United States

Past or Validated Applications*:

- **Patient Age:** Not Age Specific
- **Patient Condition:** Combined Chronic Conditions, Cancer/Oncology
- **Setting:** Not Setting Specific

*Based on the sources listed below and input from the measure developer.

Notes:

- The original measure did not have individual items numbered. In order to properly reference specific items within this profile, All instrument items are found in Table 1 and 2 of the source article were consecutively numbered.¹
- This instrument contains 17 items; 10 were mapped.

Sources:

1. Katz SJ, Hawley ST, Morrow M, et al. Coordinating cancer care: patient and practice management processes among surgeons who treat breast cancer. *Med Care* 2010;48(1):45-51.
2. Kahn KL, Malin JL, Adams J, et al. Developing a reliable, valid, and feasible plan for quality of care measurement for cancer. How should we measure? *Med Care*. 2002;40(Suppl):III73-III85.

Measure #9a. Care Transitions Measure (CTM-3)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			
<i>Interpersonal communication</i>			
<i>Information transfer</i>			
Facilitate transitions			
<i>Across settings</i>	■		
<i>As coordination needs change</i>			
Assess needs and goals	□		
Create a proactive plan of care			
Monitor, follow up, and respond to change			
Support self-management goals	□		
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management	□		
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Care Transitions Measure (CTM-3)

Purpose: To evaluate the essential processes of care involved in successful care transitions, including information transfer, patient and caregiver preparation, self-management support, empowerment to assert preferences, from a patient-centered perspective.

Format/Data Source: 3-item written survey administered at time of discharge. All questions are answered on a 5-point Likert scale.

Date: Measure published in 2002.¹

Perspective: Patient/Family

Measure Item Mapping:

- **Facilitate transitions:**
 - Across settings: 1-3
- **Assess needs and goals:** 1
- **Support self-management goals:** 2, 3
- **Medication management:** 3

Development and Testing: Key domains and measure items were developed using input from patient focus groups. Psychometric evaluation established content validity, construct validity, absence of floor and ceiling effects, and intra-item variation.¹ The 3-item CTM explained 88 percent of the variance in the 15-item CTM score. No differential item difficulty by age, gender, education, self-rated health, or ethnic group was identified after differential item function analysis.² The CTM is an NQF-endorsed measure and has been applied to a range of high-risk patient populations, including frail older adults, adults with chronic health conditions, cancer patients, and children with special health care needs. Translated Hebrew and Arabic versions of the questionnaire have also been found to be reliable and valid.³

Link to Outcomes or Health System Characteristics: Patients with lower self-rated health status had significantly lower CTM scores, a result that is consistent with previous studies, suggesting that care coordination is especially important for individuals with complex health conditions. The measure also demonstrated the power to discriminate between: (1) patients discharged from the hospital that did/did not experience a subsequent emergency visit or rehospitalization for their index condition and (2) health care facilities with differing levels of commitment to care coordination.⁴

Logic Model/Conceptual Framework: None described in the sources identified.

Country: United States; translations available for use in other countries (see notes below).

Past or Validated Applications*:

- **Patient Age:** Children, Adults, Older Adults
- **Patient Condition:** General Population/Not Condition Specific
- **Setting:** Inpatient Facility, Primary Care Facility

*Based on the sources listed below and input from the measure developer.

Notes:

- All instrument items are located online.⁴
- This instrument contains 3 items; all 3 were mapped.
- Finnish and French translations of the CTM-3 are available online.⁴
- A validated 15-item version (CTM-15) is also available online in English, Spanish, Arabic, Hebrew, and Russian.⁴

Sources:

1. Coleman EA, Smith JD, Frank JC, et al. Development and testing of a measure designed to assess the quality of care transitions. *Int J Integr Care* 2002;2(1):1-9.
2. Parry C, Mahoney E, Chalmers SA, et al. Assessing the quality of transitional care: further applications of the care transitions measure. *Medical Care* 2008;46(3):317-22.
3. Shadmi E, Zisberg A, Coleman EA. Translation and validation of the Care Transition Measure into Hebrew and Arabic. *Int J Quality Health Care* 2009;21(2):97-102.
4. The Care Transitions Program: Improving Quality and Safety During Care Hand-Offs Web site. Available at: <http://www.caretransitions.org/articles.asp>. Accessed: 15 September 2010.
5. Coleman EA, Mahoney E, Parry C. Assessing the quality of preparation for post-hospital care from the patient's perspective: The Care Transitions Measure. *Med Care* 2005; 43(3):246-255.
6. Coleman EA, Parry C, Chalmers S, et al. The central role of performance measurement in improving the quality of transitional care. *Home Health Care Services Quarterly*. 2007; 26(4):93-104.

Measure #9b. Care Transitions Measure (CTM-15)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility	□		
Communicate	□		
<i>Interpersonal communication</i>			
<i>Information transfer</i>	□		
Facilitate transitions			
<i>Across settings</i>	■		
<i>As coordination needs change</i>			
Assess needs and goals	■		
Create a proactive plan of care	□		
Monitor, follow up, and respond to change	□		
Support self-management goals	■		
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management	■		
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Care Transitions Measure (CTM-15)

Purpose: To evaluate the essential processes of care involved in successful care transitions from a patient-centered perspective.

Format/Data Source: 15-item survey administered at the time of, or immediately following, hospital discharge. The items span 4 domains: (1) information transfer, (2) patient and caregiver preparation, (3) self-management support, and (4) empowerment to assert preferences. All questions are answered on a 5-point Likert scale.

Date: Measure published in 2002.¹

Perspective: Patient/Family

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 9
- **Communicate:**
 - *Between health care professional(s) and patient/family:* 1
 - Information transfer:
 - *Between health care professional(s) and patient/family:* 4
- **Facilitate transitions:**
 - Across settings: 1-15
- **Assess needs and goals:** 1-3, 7
- **Create a proactive plan of care:** 7, 12
- **Monitor, follow up, and respond to change:** 12
- **Support self-management goals:** 1, 4-6, 8-11
- **Medication management:** 13-15

Development and Testing: Key domains and measure items were developed using input from patient focus groups. Psychometric evaluation established content validity, construct validity, absence of floor and ceiling effects, and intra-item variation.¹ M plus confirmatory factor analysis supported the CTM-15 factor structure in a more diverse study population (225 patients of varying racial/ethnic background, aged 18-90, in rural settings). No differential item difficulty by age, gender, education, self-rated health, or ethnic group was identified after differential item function analysis.² The CTM is an NQF-endorsed measure and has been applied to a range of high-risk patient populations, including frail older adults, adults with chronic health conditions, cancer patients, and children with special health care needs. Translated Hebrew and Arabic versions of the questionnaire have also been found to be reliable and valid.³

Link to Outcomes or Health System Characteristics: Patients with lower self-rated health status had significantly lower CTM scores, a result that is consistent with previous studies, suggesting that care coordination is especially important for individuals with complex health conditions. The measure also demonstrated the power to discriminate between: (1) patients discharged from the hospital that did/did not experience a subsequent emergency visit or

rehospitalization for their index condition and (2) health care facilities with differing levels of commitment to care coordination.⁴

Logic Model/Conceptual Framework: None described in the sources identified.

Country: United States

Past or Validated Applications*:

- **Patient Age:** Adults, Older Adults
- **Patient Condition:** General Population/Not Condition Specific
- **Setting:** Inpatient Facility, Primary Care Facility, Home Health Care

*Based on the sources listed below and input from the measure developer.

Notes:

- All instrument items are located online.⁴
- This instrument contains 15 items; all 15 were mapped.
- For those interested, Spanish, Arabic, Hebrew, and Russian translations of the CTM-15 are available online.⁴

Sources:

1. Coleman EA, Smith JD, Frank JC, et al. Development and testing of a measure designed to assess the quality of care transitions. *Int J Integr Care* 2002;2(1):1-9.
2. Parry C, Mahoney E, Chalmers SA, et al. Assessing the quality of transitional care: further applications of the care transitions measure. *Medical Care* 2008;46(3):317-22.
3. Shadmi E, Zisberg A, Coleman EA. Translation and validation of the Care Transition Measure into Hebrew and Arabic. *Int J Quality Health Care* 2009;21(2):97-102.
4. The Care Transitions Program: Improving Quality and Safety During Care Hand-Offs Web site. Available at: <http://www.caretransitions.org/articles.asp>. Accessed: 15 September 2010.
5. Coleman EA, Mahoney E, Parry C. Assessing the quality of preparation for post-hospital care from the patient's perspective: The Care Transitions Measure. *Med Care* 2005; 43(3):246-255.
6. Coleman EA, Parry C, Chalmers S, et al. The central role of performance measurement in improving the quality of transitional care. *Home Health Care Services Quarterly*. 2007; 26(4):93-104.

Measure #10. Patient Assessment of Chronic Illness Care (PACIC)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate	■		
<i>Interpersonal communication</i>	□		
<i>Information transfer</i>	□		
Facilitate transitions			
<i>Across settings</i>			
<i>As coordination needs change</i>			
Assess needs and goals	■		
Create a proactive plan of care	■		
Monitor, follow up, and respond to change	□		
Support self-management goals	■		
Link to community resources	■		
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management	□		
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Patient Assessment of Chronic Illness Care (PACIC)

Purpose: To develop a patient self-report instrument that measures the extent to which patients receive clinical services and actions consistent with the Chronic Care Model.

Format/Data Source: A 20-item survey administered to patients with chronic conditions for evaluation of their care within the past 6 months. Scales address 5 topics: (1) Patient Activation; (2) Delivery System Design/Decision Support; (3) Goal Setting; (4) Problem-Solving/Contextual Counseling, and (5) Follow-up/Coordination.

Date: Measure published in 2005.¹

Perspective: Patient/Family

Measure Item Mapping:

- **Communicate:**
 - *Between health care professional(s) and patient/family:* B11, B15, B19, B20
 - Interpersonal communication:
 - *Between health care professional(s) and patient/family:* B1
 - Information transfer:
 - *Between health care professional(s) and patient/family:* B3
 - *Participants not specified:* B9
- **Assess needs and goals:** B1, B2, B7-9, B12, B13
- **Create a proactive plan of care:** B1, B4, B13, B14
- **Monitor, follow up, and respond to change:** B16
- **Support self-management goals:** B4, B6, B7, B8, B10, B13, B14, B17
- **Link to community resources:** B10, B17, B18
- **Medication management:** B3

Development and Testing: Face, construct, and concurrent validity, as well as measurement performance were demonstrated, characterizing the PACIC as a reliable instrument. Test-retest reliability was moderately stable over a three-month interval. Most items strongly related to their respective subscale(s), and the overall model had moderate goodness of fit. The instrument is appropriate across a variety of chronic conditions.¹

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: The Chronic Care Model establishes a framework from which the Patient Assessment of Chronic Illness Care (PACIC) arises.¹

Country: United States

Past or Validated Applications*:

- **Patient Age:** Adults

- **Patient Condition:** Combined Chronic Conditions, General Chronic Conditions, Multiple Chronic Conditions
- **Setting:** Primary Care Facility

*Based on the sources listed below and input from the measure developers.

Notes:

- Instrument items located in the Appendix of the source article.¹
- Instrument items are also located online.³
- This instrument contains 20 items; 19 were mapped.
- A 25-item version is also available, which can be scored according to the “5 As” model of health behavior change.³
- Additional information regarding the measure and how to contact its developers is available online.⁵
- An adapted two-factor structure version of the five-factor structure PACIC (tested in the United States and Europe) was developed and tested in Australia.⁶
- Studies using the PACIC have also been applied to diabetic patient populations, assessing the level of literacy in relation to self-management support.⁷

Sources:

1. Glasgow RE, Wagner EH, Schaefer J, et al. Development and validation of the Patient Assessment of Chronic Illness Care (PACIC). *Med Care* 2005;43(5):436-44.
2. Gensichen J, Serras A, Paulitsch MA, et al. The Patient Assessment of Chronic Illness Care questionnaire: Evaluation in patients with mental disorders in primary care. *Community Ment Health J* 2010 Aug 24. [ePub ahead of print]. No doi number listed.
3. Robert Wood Johnson Foundation Improving Chronic Illness Care Web site. Available at: <http://improvingchroniccare.org/tools/pacic.htm>. Accessed: 17 September 2010.
4. Glasgow RE, Nelson CC, Whitesides H, et al. Use of the Patient Assessment of Chronic Illness Care (PACIC) with diabetic patients: Relationship to patient characteristics, receipt of care, and self-management. *Diabetes Care* 2005;28:2655-61.
5. National Cancer Institute Grid-Enabled Measures Database (GEM), beta. Available at: <https://www.gem-beta.org/public/MeasureDetail.aspx?mid=100&cat=2&mode=m>. Accessed: 24 September 2010.
6. Taggart J, Chan B, Jayasinghe UW, et al. Patients Assessment of Chronic Illness Care (PACIC) in two Australian studies: Structure and utility. *J Eval Clin Pract* 2010 Sep 16 [ePub ahead of print] doi:10.1111/j.1365-2753.2010.01423.x.
7. Wallace AS, Carlson JR, Malone RM, et al. The influence of literacy on patient-reported experiences of diabetes self-management support. *Nurs Res* 2010;59(5):356-63.
8. Schmittdiel J, Mosen DM, Glasgow RE, et al. Patient Assessment of Chronic Illness Care (PACIC) and improved patient-centered outcomes for chronic conditions. *J Gen Int Med* 2008;23(1):77-80.

Measure #11a. Family-Centered Care Self-Assessment Tool – Family Version

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility	■		
Communicate	□		
<i>Interpersonal communication</i>	■		
<i>Information transfer</i>	■		
Facilitate transitions			
<i>Across settings</i>			
<i>As coordination needs change</i>	■		
Assess needs and goals	■		
Create a proactive plan of care	■		
Monitor, follow up, and respond to change	■		
Support self-management goals	■		
Link to community resources	■		
Align resources with patient and population needs	■		
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination	□		
Health care home			
Care management	□		
Medication management			
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Family Centered Care Self-Assessment Tool – Family Version

Purpose: To evaluate practices' provision of family-centered health care from the family perspective.

Format/Data Source: 98-item, written survey with questions across 3 domains: (1) family/provider partnerships, (2) care setting practices and policies, and (3) community systems of services and supports. These 3 domains are further divided into a total of 15 subtopics: (1) the decisionmaking team, (2) supporting the family as the constant in the child's life, (3) family-to-family and peer support, (4) supporting transition to adulthood, (5) sharing successes of the family/provider partnership, (6) giving a diagnosis, (7) ongoing care and support, (8) addressing child/youth development, (9) access to records, (10) appointment schedules, (11) feedback on care setting practices, (12) care setting policies to support family-centered care, (13) addressing culture and language in care, (14) information and referral and community based services, and (15) community systems integration and care coordination. The subtopics are referred to for measure-item mapping.

Date: Measure published in 2008.¹

Perspective: Patient/Family

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 1.1A, 1.1B, 1.1D, 4.2C, 7.1F
- **Communicate:**
 - *Between health care professional(s) and patient/family:* 9.1A
 - Interpersonal communication:
 - *Between health care professional(s) and patient/family:* 1.2B, 1.2C, 1.5, 1.6, 2.1A-D, 3.1F, 7.1B-D, 7.1H, 8.1F
 - Information transfer:
 - *Between health care professional(s) and patient/family:* 1.4, 2.2A, 4.2E, 6.1A-C, 7.1E, 7.1G, 9.1D, 9.1E, 9.2, 12.1
 - *Across health care teams or settings:* 13.1D
 - *Participants not specified:* 4.2F
- **Facilitate transitions:**
 - As coordination needs change: 1.2D, 3.1D, 4.2A-H, 8.1B, 8.1F, 14.2
- **Assess needs and goals:** 1.2B-D, 1.3A-D, 2.1D, 7.5, 8.1B, 13.1A, 13.1B
- **Create a proactive plan of care:** 4.2C, 4.2E, 13.1B
- **Monitor, follow up, and respond to change:** 1.2D, 6.1A, 7.1F, 8.1A, 8.1F, 14.1C-F, 14.2
- **Support self-management goals:** 1.1D, 1.2A, 2.2B, 3.1E, 3.1F, 4.2A, 4.2B, 6.1C, 6.1D, 7.1A, 7.1I, 8.1C-D, 13.1E
- **Link to community resources:** 2.2B, 3.1B-D, 4.1C, 14.1A, 14.1B, 14.2, 15.1A
- **Align resources with patient and population needs:** 1.1C, 3.1C, 3.1F, 4.2D, 4.2H, 7.1I, 7.3, 7.4, 9.1B, 9.1C, 10.1A-D, 12.2, 13.1C
- **Teamwork focused on coordination:** 1.2A

- **Care management:** 15.1B

Development and Testing: The instrument was developed based on 10 components of family-centered care within a framework for partnership between families and professionals. No detailed testing information was described in the sources identified.¹

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: National Center for Family-Centered Care Framework.²

Country: United States

Past or Validated Applications*:

- **Patient Age:** Children
- **Patient Condition:** Combined Chronic Conditions, Children with Special Health Care Needs
- **Setting:** Not Setting Specific

*Based on the sources listed below and input from the measure developer.

Notes:

- All instrument items are available online.¹
- This instrument contains 98 items; 90 were mapped.

Sources:

1. Family Voices, funded by the Maternal and Child Health Bureau (MCBH). *Family Centered Care Self-Assessment Tool – Family Version*. October 2008. Available at: <http://www.familyvoices.org/pub/index.php?topic=fcc>. Accessed: 17 September 2010.
2. National Center for Family-Centered Care. *Family-Centered Care for Children with Special Health Care Needs*. Bethesda, MD: Association for the Care of Children’s Health; 1989.

Measure #11b. Family Centered Care Self-Assessment Tool – Provider Version

CARE COORDINATION MEASURES MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility		■	
Communicate		■	
<i>Interpersonal communication</i>		■	
<i>Information transfer</i>		■	
Facilitate transitions			
<i>Across settings</i>			
<i>As coordination needs change</i>		■	
Assess needs and goals		■	
Create a proactive plan of care		■	
Monitor, follow up, and respond to change		■	
Support self-management goals		■	
Link to community resources		■	
Align resources with patient and population needs		■	
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination		□	
Health care home			
Care management		□	
Medication management			
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Family Centered Care Self-Assessment Tool – Provider Version

Purpose: Family-Centered Care aims to improve the health and well-being of children through a respectful partnership between families and health care professionals. The Provider version aims to evaluate health care staff to determine the quality of care provided to the families.

Format/Data Source: 105-item, written survey administered to providers (health care professionals and staff). The Family-Centered Care Self-Assessment Tool – Provider Version covers 3 domains: (1) Family/Provider Partnerships, (2) Care Setting Practices and Policies, and (3) Community Systems of Services and Supports. These 3 domains are further divided into 15 subtopics: (1) Decision-Making Team, (2) Supporting the Family as the Constant in the Child’s Life, (3) Family-to-Family and Peer Support, (4) Supporting Transition to Adulthood, (5) Sharing Successes of the Family/Provider Partnership, (6) Giving a Diagnosis, (7) Ongoing Care and Support, (8) Addressing Child/Youth Development, (9) Access to Records, (10) Appointment Schedules, (11) Feedback on Care Setting Practices, (12) Care Setting Policies to Support Family-Centered Care, (13) Addressing Culture and Language in Care, (14) Information and Referral and Community-Based Services, and (15) Community Systems Integration and Care Coordination. The subtopics are referred to for measure-item mapping.

Date: Measure published in 2008.¹

Perspective: Health Care Professional(s)

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 1.1A, 1.1B, 1.1D, 4.2C, 7.1F
- **Communicate:**
 - *Between health care professional(s) and patient/family:* 1.2D, 8.1F, 9.1A, 9.1C
 - *Within teams of health care professionals:* 9.1E
 - Interpersonal communication:
 - *Between health care professional(s) and patient/family:* 1.2B, 1.2C, 1.4, 1.5, 4.1A, 7.1B, 7.1D, 7.1F, 7.1H
 - Information transfer:
 - *Between health care professional(s) and patient/family:* 2.2A, 2.2B, 6.1A, 6.1B, 7.1E, 7.1G, 9.1D, 12.1A, 12.1C
 - *Within teams of health care professionals:* 4.2E
 - *Participants not specified:* 4.2F
- **Facilitate transitions:**
 - As coordination needs change: 4.1A-C, 4.2A-H, 8.1B, 8.1F, 14.2
- **Assess needs and goals:** 1.1B, 1.2B-E, 1.3A-E, 2.1A, 2.1D, 7.1D, 7.4, 8.1B, 13.1A, 14.2
- **Create a proactive plan of care:** 4.1A, 4.2C, 4.2E, 13.1B
- **Monitor, follow up, and respond to change:** 1.7, 7.1F, 8.1A, 8.1F, 14.1C-F, 14.2
- **Support self-management goals:** 1.1C, 1.1D, 1.2A, 2.1A, 2.2A, 2.2B, 3.1E, 3.1F, 4.1B, 4.1C, 4.2A, 4.2B, 6.1C, 6.1D, 7.1F, 7.1H, 7.1I, 8.1C-F, 13.1E
- **Link to community resources:** 1.1C, 2.2B, 3.1B-E, 4.1B, 4.1C, 14.1A, 14.1B, 14.2

- **Align resources with patient and population needs:** 1.1C, 1.3A-E, 3.1C, 3.1F, 4.2D, 4.2H, 7.1I, 7.2, 7.3, 9.1B, 9.1C, 10.1A-D, 11.1-11.4, 12.1C, 12.1G, 12.1H, 13.1A-E
- **Teamwork focused on coordination:** 1.2A
- **Care management:** 15.1B

Development and Testing: The instrument was developed and based on 10 principles of family-centered care for children with special health needs within a framework for partnership between families and professionals. No detailed testing information was described in the sources identified.¹

Link to Outcomes or Health System Characteristics: National Center for Family-Centered Care Framework.²

Logic Model/Conceptual Framework: None described in the sources identified.

Country: United States

Past or Validated Applications*:

- **Patient Age:** Children
- **Patient Condition:** Combined Chronic Conditions, Children with Special Health Care Needs
- **Setting:** Not Setting Specific

*Based on the sources listed below and input from the measure developer.

Notes:

- All instrument items are available online.¹
- This instrument contains 105 items; 88 were mapped.

Sources:

1. Family Voices, funded by the Maternal and Child Health Bureau (MCBH). Family Centered Care Self-Assessment Tool – Provider Version. October 2008. Available at: <http://www.familyvoices.org/pub/index.php?topic=fcc>. Accessed: 17 September 2010.
2. National Center for Family-Centered Care. Family-centered care for children with special health care needs. Bethesda, MD: Association for the Care of Children’s Health; 1989.

Measure #12a. ICU Nurse-Physician Questionnaire - Long Version

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate		■	
<i>Interpersonal communication</i>		■	
<i>Information transfer</i>		■	
Facilitate transitions			
<i>Across settings</i>			
<i>As coordination needs change</i>			
Assess needs and goals		■	
Create a proactive plan of care		■	
Monitor, follow up, and respond to change		□	
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination		■	
Health care home			
Care management			
Medication management			
Health IT-enabled coordination		□	

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

ICU Nurse-Physician Questionnaire - Long Version

Purpose: To measure clinician perceptions of collaborative interactions, with a specific focus on leadership, organizational culture, communication, problem-solving, team cohesiveness, and coordination.

Format/Data Source: 218-item survey consisting of 11 sections. Requires approximately 45 minutes to complete.

Date: Measure published in 1991.¹

Perspective: Health Care Professional(s)

Measure Item Mapping:

(Sections II and III are property of Human Synergistics and were not mapped for this profile)

- **Communicate:**
 - *Between health care professional(s) and patient/family:* I.39d-g
 - *Within teams of health care professionals:* I.5, I.17, I.35, I.39a-c, V.II.A.e
 - *Across health care teams or settings:* V.II.B.f, I.16
 - Interpersonal communication:
 - *Within teams of health care professionals:* I.2, I.9, I.11, I.14, I.21, I.23
 - Information transfer:
 - *Between health care professional(s) and patient/family:*
 - *Within teams of health care professionals:* I.3, I.6, I.10, I.12, I.15, I.18, I.22, I.24, I.25, I.28, I.31, I.36, I.38, V.II.A.i, V.II.B.h
 - *Across health care teams or settings:* I.8, I.20
- **Assess needs and goals:** V.1, V.3, V.11a, V.11c
- **Create a proactive plan of care:** I.36, I.38, V.II.A.a, V.II.A.b, V.II.A.h, V.II.B.a, V.II.B.d, V.II.B.e
- **Monitor, follow up, and respond to change:** I.28
- **Teamwork focused on coordination:** I.26, I.27, I.30, I.32, I.33, I.34, IV.1-48, V.9, VIA.1-16, VIB.1-16, V.II.A.d, V.II.A.f, V.II.A.g, V.II.B.b, V.II.B.c, V.II.B.g
- **Health IT-enabled coordination:** V.II.A.c, V.II.B.i

Development and Testing: The instrument demonstrated high reliability and validity for almost all scales. Testing was conducted using a nationally representative sample from 42 medical/surgical intensive care units (ICUs), and findings were further supported by on-site observational evaluation visits. Individual member responses can be aggregated to a unit level for broader evaluation. Factor analysis and analysis of variance were conducted as part of the testing process.¹

Link to Outcomes or Health System Characteristics: A team-satisfaction-oriented culture, strong leadership, open and timely communication, effective coordination, and open collaborative problem-solving, as assessed by the ICU Nurse-Physician Questionnaire, corresponded with better performing health care sites. Performance in these sites was assessed by

on-site evaluations, which consisted of interviews, observation of practice, and comparison with a set of “best” and “worst” practices.¹

Logic Model/Conceptual Framework: Author-developed framework of managerial (leadership, culture) and organizational (coordination, communication, conflict management) factors affecting ICU performance.¹

Country: United States

Past or Validated Applications*:

- **Patient Age:** Not Applicable
- **Patient Condition:** Not Applicable
- **Setting:** Inpatient Facility

*Based on the sources listed below and input from the measure developers.

Notes:

- This instrument is available in nurse and physician versions. All questions are nearly identical in the two versions except for minor wording changes to reflect the appropriate audience. Both versions can be found online.²
- This instrument is also available in a short version, which can be found online.²
- This instrument contains 218 items; 157 were mapped.
- The measure developers believe that this instrument can be successfully used in other settings, beyond ICU units. We included it in the *Atlas* because of its strong relevance to the framework domains, robust reliability and validity, and potential for adaptation to a variety of other health care settings.

Sources:

1. Shortell S, Rousseau DM, Gillies RR, et al. Organizational assessment in Intensive Care Units (ICUs): Construct development, reliability, and validity of the ICU Nurse-Physician Questionnaire. *Med Care* 1991;29(8): 709-27.
2. UC Berkeley School of Public Health: Stephen M. Shortell Research Projects Web site. Available at: <http://shortellresearch.berkeley.edu/ICU%20Questionnaires.htm>. Accessed: 22 September 2010.

Measure #12b. ICU Nurse-Physician Questionnaire - Short Version

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate		■	
<i>Interpersonal communication</i>		■	
<i>Information transfer</i>		■	
Facilitate transitions			
<i>Across settings</i>			
<i>As coordination needs change</i>			
Assess needs and goals		■	
Create a proactive plan of care			
Monitor, follow up, and respond to change		□	
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination		■	
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

ICU Nurse-Physician Questionnaire - Short Version

Purpose: To measure clinician perceptions of collaborative interactions, with a specific focus on leadership, organizational culture, communication, problem-solving, team cohesiveness, and coordination.

Format/Data Source: 85-item survey consisting of 6 sections. Requires approximately 20 minutes to complete.

Date: Measure published in 1991.¹

Perspective: Health Care Professional(s)

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:**
- **Communicate:**
 - *Within teams of health care professionals:* I.3, I.12, I.22
 - Interpersonal communication:
 - *Within teams of health care professionals:* I.1, I.6, I.8, I.10, I.15, I.17
 - Information transfer:
 - *Within teams of health care professionals:* I.2, I.4, I.7, I.9, I.11, I.13, I.16, I.18-21
- **Assess needs and goals:** III.1, III.3, III.11a, III.11c
- **Monitor, follow up, and respond to change:** I.20
- **Teamwork focused on coordination:** II.1-20, III.9, VIA.1-7, VIB.1-7

Development and Testing: The instrument demonstrated high reliability and validity for almost all scales. Testing was conducted using a nationally representative sample from 42 medical/surgical ICUs, and findings were further supported by on-site observational evaluation visits. Individual member responses can be aggregated to a unit level for broader evaluation. Factor analysis and analysis of variance were conducted as part of the testing process.¹

Link to Outcomes or Health System Characteristics: A team-satisfaction-oriented culture, strong leadership, open and timely communication, effective coordination, and open collaborative problem-solving, as assessed by the ICU Nurse-Physician Questionnaire, corresponded with better performing health care sites. Performance in these sites was assessed by on-site evaluations, which consisted of interviews, observation of practice, and comparison with a set of “best” and “worst” practices.¹

Logic Model/Conceptual Framework: Author-developed framework of managerial (leadership, culture) and organizational (coordination, communication, conflict management) factors affecting ICU performance.¹

Country: United States

Past or Validated Applications*:

- **Patient Age:** Not Applicable
- **Patient Condition:** Not Applicable
- **Setting:** Inpatient Facility

*Based on the sources listed below and input from the measure developer.

Notes:

- This instrument is available in nurse and physician versions. All questions are nearly identical in both versions except for minor wording changes to reflect the appropriate audience. Both versions can be found online.²
- This instrument is also available in a long version, which can be found online.²
- This instrument contains 85 items; 69 were mapped.
- The measure developers believe that this instrument can be successfully used in other settings, beyond ICU units. We included it in the *Atlas* because of its strong relevance to the framework domains, robust reliability and validity, and potential for adaptation to a variety of other health care settings.

Sources:

1. Shortell S, Rousseau DM, Gillies RR, et al. Organizational assessment in Intensive Care Units (ICUs): Construct development, reliability, and validity of the ICU Nurse-Physician Questionnaire. *Med Care* 1991;29(8):709-27.
2. UC Berkeley School of Public Health: Stephen M. Shortell Research Projects Web site. Available at: <http://shortellresearch.berkeley.edu/ICU%20Questionnaires.htm>. Accessed: 22 September 2010.

Measure #13. Primary Care Assessment Survey (PCAS)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility	□		
Communicate	■		
<i>Interpersonal communication</i>	□		
<i>Information transfer</i>	□		
Facilitate transitions			
<i>Across settings</i>	■		
<i>As coordination needs change</i>			
Assess needs and goals	□		
Create a proactive plan of care			
Monitor, follow up, and respond to change	□		
Support self-management goals	■		
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Primary Care Assessment Survey (PCAS)

Purpose: To assess the performance of primary care physicians from the patient perspective.

Format/Data Source: 51-item, self-administered survey assessing primary care across 7 domains: (1) accessibility (organizational, financial), (2) continuity (longitudinal, visit-based), (3) comprehensiveness (contextual knowledge of patient, preventive counseling), (4) integration, (5) clinical interaction (clinician-patient communication, thoroughness of physical examinations), (6) interpersonal treatment, and (7) trust. A 3-step mail survey protocol was used with limited telephone followup. All PCAS items are non-visit specific to emphasize primary care in a sustained clinician-patient relationship. Responses were provided on a Likert scale.

Date: Measure published in 1998.¹

Perspective: Patient/Family

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 35
- **Communicate:**
 - *Between health care professional(s) and patient/family:* 12, 28, 30, 32, 33, 42, 46
 - *Across health care teams or settings:* 27
 - Interpersonal communication:
 - *Between health care professional(s) and patient/family:* 31, 35
 - Information transfer:
 - *Participants not specified:* 13
- **Facilitate transitions:**
 - Across settings: 24 - 26
- **Assess needs and goals:** 15, 16
- **Monitor, follow up, and respond to change:** 25, 26
- **Support self-management goals:** 17-24, 34

Development and Testing: Through the use of Likert's method, 5 testing assumptions were met, specifically: (1) item-convergent validity, (2) item-discriminant validity, (3) equal item variance, (4) equal item-scale correlations, and (5) score reliability. Test-retest reliability determined stability of responses. Cronbach's alpha coefficients for each subscale substantially exceeded the recommended value.¹

Link to Outcomes or Health System Characteristics: Strong associations are demonstrated between PCAS scales and outcomes such as patients' adherence to physicians' advice, patients' understanding of and ability to manage a chronic health condition, patients' satisfaction with their primary physicians, and patients' self-reported health improvements.¹

Logic Model/Conceptual Framework: The foundation for the PCAS came from the Institute of Medicine's definition of primary care.¹

Country: United States

Past or Validated Applications*:

- **Patient Age:** Adults, Older Adults
- **Patient Condition:** General Population/Condition Not Specific
- **Setting:** Primary Care Facility

*Based on the sources listed below and input from the measure developers.

Notes:

- The original measure did not have individual items numbered. In order to properly reference specific items within this profile, all instrument items found in Appendix A of the source article were consecutively numbered.¹
- This instrument contains 51 items; 49 were provided in Appendix A (2 were screener items); 22 were mapped.

Sources:

1. Safran DG, Kosinski M, Tarlov AR, et al. The Primary Care Assessment Survey: Tests of data quality and measurement performance. *Med Care* 1998;36(5):728-39.
2. Safran DG, Montgomery JE, Change H, et al. Switching doctors: Predictors of voluntary disenrollment from a primary physician's practice. *J Fam Pract* 2001;50(2):130-36.
3. O'Malley AS, Forrest CB. Beyond the examination room: Primary care performance and the patient-physician relationship for low-income women. *J Gen Int Med* 2002;17:66-74.
4. Montgomery JE, Irish JT, Wilson IB, et al. Primary care experiences of Medicare beneficiaries, 1998 to 2000. *J Gen Int Med* 2004;19:991-8.

Measure #14. National Survey of Children With Special Health Care Needs (CSHCN)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility	□		
Communicate	■		
<i>Interpersonal communication</i>	■		
<i>Information transfer</i>	□		
Facilitate transitions			
<i>Across settings</i>	□		
<i>As coordination needs change</i>	■		
Assess needs and goals	□		
Create a proactive plan of care			
Monitor, follow up, and respond to change			
Support self-management goals			
Link to community resources			
Align resources with patient and population needs	□		
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management	■		
Medication management			
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

National Survey of Children With Special Health Care Needs (CSHCN)

Purpose: To collect information about children with special health care needs (CSHCN) and their families to help guide policymakers, advocates, and researchers.

Format/Data Source: Telephone interview comprised of 11-13 sections (the 2005-2006 version consists of 11 sections, and the 2001 version consists of 13 sections). The sections most relevant to care coordination are Section 5 – Care Coordination, Section 6A – Family Centered Care, and Section 6B – Transition Issues.

Date: Measure administered nationally in 2001 and 2005-2006.¹

Perspective: Patient/Family

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** C6Q08
- **Communicate:**
 - *Across health care teams or settings:* C5Q05, C5Q06, C5Q10
 - Interpersonal communication:
 - *Between health care professional(s) and patient/family:* C6Q03, C6Q0A, C6Q0A_B, C6Q0A_C, C6Q0A_D, C6Q0A_E, C6Q0A_F
 - Information transfer:
 - *Between health care professional(s) and patient/family:* C6Q04
- **Facilitate transitions:**
 - Across settings: C5Q11, C4Q07
 - As coordination needs change: C6Q0A, C6Q0A_B, C6Q0A_C, C6Q0A_D, C6Q0A_E, C6Q0A_F
- **Assess needs and goals:** C6Q0A, C6Q0A_D
- **Align resources with patient and population needs:** S5Q13, S5Q13A
- **Care management:** C5Q09, C5Q12, C5Q13, C5Q14 INDEX, C5Q15, C5Q16 INDEX

Development and Testing: The survey was conceptualized and developed by an expert panel consisting of selected State and Federal Title V program directors, representatives from Family Voices and the Association for Maternal and Child Health Programs, health services researchers, and survey design experts. All questions were pretested in 2000. After it was administered nationally in 2001, the survey was revised based on suggestions made by data users. Each suggested revision was reviewed by a technical expert panel, and all new or substantially altered questions were pretested in 2004.²

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: None described in the sources identified.

Country: United States

Past or Validated Applications*:

- **Patient Age:** Children
- **Patient Condition:** Combined Chronic Conditions, Children with Special Health Care Needs
- **Setting:** Not Setting Specific

*Based on the sources listed below and input from the measure developers.

Notes:

- This survey consists of many sections, but only the sections relevant to care coordination (Section 5– Care Coordination, Section 6A – Family Centered Care, Section 6B – Transition Issues) were mapped for this profile. The full-length instrument as well as a Spanish version can be found online.¹
- The Measure Item Mapping portion of the profile refers to the question items found in the 2005-2006 version of the survey. For those interested in the 2001 version, it can be found online.¹
- The mapped sections of the measure contain 27 items; 22 were mapped.
- The 2001 and 2005-2006 national and State data are publicly available for download online.¹
- The CSHCN survey questions and data have also been used in several published studies. A list of these publications may be found online.¹

Sources:

1. National Survey of Children With Special Health Care Needs Web site. Available at: <http://cshcndata.org/Content/Default.aspx> Accessed: 20 September 2010.
2. Blumberg SJ, Welch BM, Chowdhury SR, et al. Design and operation of the National Survey of Children With Special Health Care Needs, 2005-2006. National Center for Health Statistics. Vital Health Stat 2008;1(45).

Measure #15. Head and Neck Cancer Integrated Care Indicators

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			□
Communicate			
<i>Interpersonal communication</i>			
<i>Information transfer</i>			■
Facilitate transitions			
<i>Across settings</i>			□
<i>As coordination needs change</i>			
Assess needs and goals			
Create a proactive plan of care			
Monitor, follow up, and respond to change			
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			□
Medication management			
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Head and Neck Cancer Integrated Care Indicators

Purpose: To measure the quality of integrated care by assessing current practice for patients with head and neck cancer.

Format/Data Source: 8 integrated care indicators (ICI) and 23 specific indicators (SI) for patients with head and neck cancer.

Date: Measure published in 2007.¹

Perspective: System Representative(s)

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** SI 1
- **Communicate:**
 - Information transfer:
 - *Between health care professional(s) and patient/family:* ICI 8, SI 3, SI 5
 - *Across health care teams or settings:* SI 23
 - *Participants not specified:* SI 2
- **Facilitate transitions:**
 - Across settings: SI 12, SI 15
- **Care management:** ICI 5, ICI 6

Development and Testing: The indicators were developed using the RAND-modified appropriateness method, which involved systematically searching the literature for integrated care recommendations and performing a systematic consensus procedure based on evidence-based guidelines and the opinions of both professionals and patients. The clinimetric characteristics of the developed indicators were tested. All indicators had acceptable reliability values. The content validity of the indicators was guaranteed by the use of the RAND-modified appropriateness method.¹

Link to Outcomes or Health System Characteristics: None described in the source identified.

Logic Model/Conceptual Framework: None described in the source identified.

Country: Netherlands

Past or Validated Applications*:

- **Patient Age:** Adults
- **Patient Condition:** Combined Chronic Conditions, Cancer/Oncology
- **Setting:** Inpatient Facility

*Based on the source listed below.

Notes:

- All ICI items located in Table 1 and all SI items located in Table 2 of the source article.¹
- This instrument contains 31 items; 11 were mapped.

Source:

1. Ouwens MMTJ, Marres HAM, Hermens RRP, et al. Quality of integrated care for patients with head and neck cancer: Development and measurement of clinical indicators. *Head Neck* 2007;29(4):378-86.

Measure #16a. Medical Home Index - Long Version (MHI-LV)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			□
Communicate			■
<i>Interpersonal communication</i>			
<i>Information transfer</i>			□
Facilitate transitions			
<i>Across settings</i>			□
<i>As coordination needs change</i>			□
Assess needs and goals			■
Create a proactive plan of care			■
Monitor, follow up, and respond to change			
Support self-management goals			□
Link to community resources			■
Align resources with patient and population needs			■
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			■
Care management			■
Medication management			
Health IT-enabled coordination			□

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Medical Home Index - Long Version (MHI-LV)

Purpose: To measure the achievement of a medical home in primary care.

Format/Data Source: 25-item survey covering 6 domains: (1) organizational capacity, (2) chronic condition management, (3) care coordination, (4) community outreach, (5) data management, and (6) quality improvement. Responses are formatted based on a continuum from Level 1 to Level 4, which reflects the degree that a practice has achieved components of a medical home. An MHI score is calculated based on the responses to the 25 items.

Date: Measure published in 2003.¹

Perspective: System Representative(s)

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 2.4, 3.1
- **Communicate:**
 - *Between health care professional(s) and patient/family:* 1.2, 2.3, 2.4
 - *Within teams of health care professionals:* 2.3, 2.4
 - *Across health care teams or settings:* 2.3, 2.4
 - *Participants not specified:* 2.2
 - Information transfer:
 - *Between health care professional(s) and patient/family:* 1.3, 2.3
 - *Within teams of health care professionals:* 2.3
 - *Across health care teams or settings:* 2.3
- **Facilitate transitions:**
 - Across settings: 2.3, 2.4
 - As coordination needs change: 2.5.1
- **Assess needs and goals:** 1.1, 1.4, 1.5, 3.1, 3.2, 3.4, 3.5
- **Create a proactive plan of care:** 2.2, 3.1, 3.4
- **Support self-management goals:** 3.3
- **Link to community resources:** 2.3, 2.6, 4.2
- **Align resources with patient and population needs:** 1.6, 2.6, 3.5, 3.6, 4.1
- **Health care home:** 1.1-6.2
- **Care management:** 2.4, 3.1, 3.5
- **Health IT-enabled coordination:** 5.1, 5.2

Development and Testing: The instrument was initially reviewed by a national panel of Medical Home experts. Subsequent testing revealed internal consistency, construct validity, and inter-rater reliability for the MHI in the assessment of primary care practices' implementation of the medical home concept. Psychometric analyses were based on data collected from survey administration in 43 pediatric primary care practices.¹

Link to Outcomes or Health System Characteristics: A study conducted across 43 primary care practices revealed that higher scores on the Medical Home Index and specifically higher

subdomain scores for organizational capacity, care coordination, and chronic-condition management were associated with significant reductions in hospitalizations. Higher chronic-condition management scores were associated with lower emergency department use.²

Logic Model/Conceptual Framework: Medical Home Model.

Country: United States

Past or Validated Applications:

- **Patient Age:** Children, Adults
- **Patient Condition:** Combined Chronic Conditions, Children with Special Health Care Needs, General Population/Not Condition Specific
- **Setting:** Primary Care Facility

*Based on the sources listed below and input from the measure developers.

Notes:

- This instrument also has an available adult version. All questions are nearly identical except for minor wording changes to reflect adult care. Both the pediatric and adult versions can be found online.³
- This instrument is also available in a short version, which can be found online.³
- This instrument contains 25 items; all 25 were mapped.

Sources:

1. Cooley WC, McAllister JW, Sherrieb K, et al. The Medical Home Index: Development and validation of a new practice-level measure of implementation of the medical home. *Ambul Pediatr* 2003;3(4):173-80.
2. Cooley WC, McAllister JW, Sherrieb K, et al. Improved outcomes associated with medical home implementation in primary care. *Pediatrics* 2009;124(1):358-64.
3. Center for Medical Home Improvement (CMHI) Web site. Available at: <http://www.medicalhomeimprovement.org/knowledge/practices.html#measurement>
Accessed: 20 September 2010

Measure #16b. Medical Home Index - Short Version (MHI-SV)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			□
Communicate			■
<i>Interpersonal communication</i>			
<i>Information transfer</i>			
Facilitate transitions			
<i>Across settings</i>			
<i>As coordination needs change</i>			□
Assess needs and goals			□
Create a proactive plan of care			■
Monitor, follow up, and respond to change			
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			□
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			■
Care management			□
Medication management			
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Medical Home Index - Short Version (MHI-SV)

Purpose: To be used as either: (1) an interval measurement in conjunction with the original MHI or (2) a quick “report card” or snapshot of practice quality. The Center for Medical Home Improvement (CMHI) recommends the use of the full MHI for practice improvement purposes and offers this short version for interval measurement and/or when it is not feasible to use the full MHI.

Format/Data Source: 10-item survey that scores a practice on a continuum of care across 3 levels that reflect the degree to which a practice has achieved components of a medical home.

Date: Measure released in 2006.¹

Perspective: System Representative(s)

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 7
- **Communicate:**
 - *Between health care professional(s) and patient/family:* 5
 - *Within teams of health care professionals:* 5
 - *Across health care teams or settings:* 5
 - *Participants not specified:* 4
- **Facilitate transitions:**
 - As coordination needs change: 6
- **Assess needs and goals:** 1, 8
- **Create a proactive plan of care:** 4, 7, 8
- **Align resources with patient and population needs:** 2, 9
- **Health care home:** 1-10
- **Care management:** 5, 7

Development and Testing: The short version did not undergo the same rigorous validation process as the long version, but it was arrived at through the same statistical process applied to the originally validated long version.¹

Link to Outcomes or Health System Characteristics: A study using the related Medical Home Index – Long Version showed that higher MHI scores were associated with reduced hospitalizations.²

Logic Model/Conceptual Framework: Medical Home Model.

Country: United States

Past or Validated Applications:

- **Patient Age:** Children, Adults

- **Patient Condition:** Combined Chronic Conditions, Children with Special Health Care Needs, General Population/Not Condition Specific
- **Setting:** Primary Care Facility

*Based on the sources listed below and input from the measure developers.

Notes:

- This instrument also has an available adult version. All questions are nearly identical except for minor wording changes to reflect adult care. Both the pediatric and adult versions can be found online.²
- This instrument is also available in a long version, which can be found online.¹
- This instrument contains 10 items; all 10 were mapped.

Sources:

1. Center for Medical Home Improvement (CMHI) Web site. Available at: <http://www.medicalhomeimprovement.org/knowledge/practices.html#measurement>
Accessed: 20 September 2010.
2. Cooley WC, McAllister JW, Sherrieb K, et al. Improved outcomes associated with medical home implementation in primary care. *Pediatrics* 2009;124(1):358-64.

Measure #16c. Medical Home Family Index and Survey (MHFIS)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility	■		
Communicate	□		
<i>Interpersonal communication</i>	■		
<i>Information transfer</i>	■		
Facilitate transitions			
<i>Across settings</i>	□		
<i>As coordination needs change</i>	□		
Assess needs and goals	■		
Create a proactive plan of care	■		
Monitor, follow up, and respond to change	■		
Support self-management goals	■		
Link to community resources	■		
Align resources with patient and population needs	□		
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination	□		
Health care home	■		
Care management			
Medication management			
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Medical Home Family Index and Survey (MHFIS)

Purpose: To provide a consumer report on practice performance, on the family experience of care, and detailed clinical, functional, satisfaction, and cost outcomes of child and family.

Format/Data Source: A 25-item Medical Family Home Index and a supplementary 47-item Family/Caregiver Survey. The index tracks to 3 of the 6 original MHI domains: (1) organizational capacity, (2) chronic condition management, and (3) care coordination.

Date: Measure released in 2005.¹

Perspective: Patient/Family

Measure Item Mapping:

(Index items are coded as I 1-25, and survey items are coded S 1-47)

- **Establish accountability or negotiate responsibility:** S 28, S 29, S 31-34, S 36
- **Communicate:**
 - *Between health care professional(s) and patient/family:* S 33
 - *Across health care teams or settings:* S 37
 - Interpersonal communication:
 - *Between health care professional(s) and patient/family:* I 3-6
 - *Participants not specified:* I 11d
 - Information transfer:
 - *Between health care professional(s) and patient/family:* I 7a, I 9, I 13, I 14, S 34
 - *Across health care teams or settings:* I 12a, I 12b
- **Facilitate transitions:**
 - Across settings: I 11a
 - As coordination needs change: I 18
- **Assess needs and goals:** I 2c, I 2d, I 7b, I 7c, S 33
- **Create a proactive plan of care:** I 7a-d, I 8, I 19
- **Monitor, follow up, and respond to change:** I 7d, I 10a, I 10c, I 11a, S 37
- **Support self-management goals:** I 10b, S 28, S 29, S 31, S 32
- **Link to community resources:** I 10b, I 11b, I 16, S 37
- **Align resources with patient and population needs:** I 11b, I 11c
- **Teamwork focused on coordination:** I 19, S 21
- **Health care home:** I 1-25

Development and Testing: The development of the questions and language of the MHFIS involved the input of parents. The MHFIS is not a validated measure but was developed to serve as a companion to the validated MHI. It has been used in a study and was administered to a sample of 300 parents across 10 practices.²

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: Medical Home Model.

Country: United States

Past or Validated Applications*:

- **Patient Age:** Children
- **Patient Condition:** Combined Chronic Conditions, Children With Special Health Care Needs
- **Setting:** Primary Care Facility

*Based on the sources listed below and input from the measure developers.

Notes:

- All instrument items are located online.¹
- This instrument contains 72 items; 32 (25 index items, 7 survey items) were mapped.

Sources:

1. Center for Medical Home Improvement (CMHI) Web site. Available at: <http://www.medicalhomeimprovement.org/knowledge/practices.html#measurement>
Accessed: 20 September 2010.
2. McAllister JW, Sherrieb K, Cooley CW. Improvement in the family-centered medical home enhances outcomes for children and youth with special healthcare needs. *J Ambul Care Manage* 2009;32(3):188-96.

Measure #17a. Primary Care Assessment Tool – Child Expanded Edition (PCAT-CE)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility	□		
Communicate	□		
<i>Interpersonal communication</i>	■		
<i>Information transfer</i>	■		
Facilitate transitions			
<i>Across settings</i>	■		
<i>As coordination needs change</i>			
Assess needs and goals	■		
Create a proactive plan of care			
Monitor, follow up, and respond to change	■		
Support self-management goals	■		
Link to community resources			
Align resources with patient and population needs	■		
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home	■		
Care management			
Medication management	□		
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Primary Care Assessment Tool – Child Expanded Edition (PCAT-CE)

Purpose: To measure pediatric care delivery from the patient/family perspective.

Format/Data Source: Community-based telephone survey (approximately 25 minutes in length). Survey responses are provided by children’s parents and/or guardians. Some questions are designated as specifically related to care coordination. However, other items in other domains may be relevant to care coordination, although they are not explicitly categorized as measuring care coordination. Questions span 4 domains of primary care: (1) longitudinality, (2) accessibility, (3) comprehensiveness, and (4) coordination. Subtopics include: (A) affiliation with place/doctor, (B) first contact – utilization, (C) first contact – access, (D) ongoing care, (E) coordination, (F) coordination (information systems), (G) comprehensiveness (services available), (H) comprehensiveness (services provided), (I) family-centeredness, (J) community orientation, (K) culturally competent, (L) insurance questions, (M) health assessment, and (N) demographic/socioeconomic characteristics. Responses provided on a Likert scale.

Date: Measure published in 1998.¹

Perspective: Patient/Family

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** A3
- **Communicate:**
 - *Between health care professional(s) and patient/family:* E7
 - Interpersonal communication:
 - *Between health care professional(s) and patient/family:* C4, D1-D4, D6, E8, E12
 - Information transfer:
 - *Between health care professional(s) and patient/family:* E1, F1-F3, I2
 - *Across health care teams or settings:* E10, E11
 - *Participants not specified:* D10
- **Facilitate transitions:**
 - Across settings: B3, E6, E9
- **Assess needs and goals:** D7, D9, E8, I1
- **Monitor, follow up, and respond to change:** C8, E7, E11, E12
- **Support self-management goals:** G1-G15, G25, H1, H2, H14-H18
- **Align resources with patient and population needs:** C1-C12, I3, J1
- **Health care home:** A1-A3, B1, B2, B4, D1
- **Medication management:** D13

Development and Testing: Adequate consistency, reliability, and construct validity established via psychometric testing of the survey on a sample of 450 parents/guardians of pediatric patients. The principal components factor analysis yielded 5 separate factors. These corresponded to the instrument’s subdomains: first contact accessibility; coordination of care; characteristics of the professional-patient relationship over-time; comprehensiveness of services available;

comprehensiveness of services received. Overall, psychometric assessment supported the adequacy of the PCAT-CE for assessing the characteristics/quality of primary care in pediatric settings.²

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: Based on a framework of primary care.³

Country: United States

Past or Validated Applications*:

- **Patient Age:** Children
- **Patient Condition:** General Population/Not Condition Specific
- **Setting:** Primary Care Facility

*Based on the sources listed below and input from the measure developers.

Notes:

- All instrument items are available online.¹
- This instrument contains 115 items; 86 were mapped.
- There are 4 expanded versions of this instrument addressing 4 perspectives: (1) child, (2) adult, (3) facility, and (4) physician. There are 4 short versions for each of the 4 perspectives as well.
- Versions of the PCAT tools are also available in Spanish, Catalan, Portuguese, Mandarin Chinese (both People's Republic of China and Taiwan), and Korean.¹
- The PCAT is in the process of being computerized, in administration as well as scoring, for widespread use around the world, including especially Southeast Asia, the Gulf States, several countries in Europe, South Africa, several countries in Latin America (especially Brazil and Uruguay), China and Hong Kong, and others. (B. Starfield, personal communication, September 8, 2010).
- The PCAT includes measures for consumers (i.e. health survey), patients, providers, facility managers and a system tool. All address primary care domains in a comparable way. For further information, please see Appendix IV for contact information or visit the Web site, which provides detailed instructions and implementation use.¹

Sources:

1. Johns Hopkins University Bloomberg School of Public Health. Available at: http://www.jhsph.edu/pcpc/pca_tools.html. Accessed: 20 September 2010.
2. Cassady, Starfield B, Hurtado MP, et al. Measuring consumer experiences with primary care. *Pediatrics* 2000;105:998-1003.
3. Starfield B. *Primary care: concept, evaluation, and policy*. New York: Oxford University Press; 1992.
4. Stevens GD, Shi LY. Racial and ethnic disparities in the quality of primary care for children. *J Fam Pract* 2002;51(6).

Measure #17b. Primary Care Assessment Tool – Adult Expanded Edition (PCAT – AE)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility	□		
Communicate	□		
<i>Interpersonal communication</i>	■		
<i>Information transfer</i>	■		
Facilitate transitions			
<i>Across settings</i>	■		
<i>As coordination needs change</i>			
Assess needs and goals	■		
Create a proactive plan of care			
Monitor, follow up, and respond to change	■		
Support self-management goals	■		
Link to community resources			
Align resources with patient and population needs	■		
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home	■		
Care management			
Medication management	□		
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Primary Care Assessment Tool – Adult Expanded Edition (PCAT-AE)

Purpose: To measure primary care quality and the extent to which it meets consumer needs, as identified from the adult patient perspective.

Format/Data Source: Mailed surveys taking approximately 40 minutes to complete. The validated PCAT-AE covers 5 primary care domains: (1) longitudinality, (2) first contact, (3) coordination, (4) comprehensiveness, and (5) derivative. Within the 5 domains are 7 scales: (1) first contact domain – accessibility, (2) first contact – utilization, (3) longitudinal domain – ongoing care, (4) coordination domain – coordination of services, (5) comprehensiveness domain – services available, (6) comprehensiveness domain – services received, (7) derivative domain – community orientation. Some questions are designated as specifically related to care coordination. However, other items in other domains may be relevant to care coordination, although they are not explicitly categorized as measuring care coordination. Responses provided on a Likert scale, and a total score was determined through the summation of values across the 5 primary care domains.

Date: Measure published in 2001.¹

Perspective: Patient/Family

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** A3
- **Communicate:**
 - *Between health care professional(s) and patient/family:* E7
 - Interpersonal communication:
 - *Between health care professional(s) and patient/family:* C4, D1-D4, D6, E8, E12, I1
 - Information transfer:
 - *Between health care professional(s) and patient/family:* E1, F1-F3, I2
 - *Across health care teams or settings:* E10, E11
 - *Participants not specified:* D10
- **Facilitate transitions:**
 - Across settings: B3, E6, E9
- **Assess needs and goals:** D7, D9, E8, I1
- **Monitor, follow up, and respond to change:** C8, E7, E11, E12
- **Support self-management goals:** G1-G25, H1-H13
- **Align resources with patient and population needs:** C1-C12, I3, J1
- **Health care home:** A1-A3, B1, B2, D1
- **Medication management:** D13

Development and Testing: Factor and reliability analyses were conducted for all scales and domains, which were demonstrated to be both valid and reliable. Tests of Likert scaling assumptions (item-convergent validity, item-discriminant validity, equal item variance, equal

item scale correlation, and score reliability) demonstrated that they were met. One-half of respondents reported the maximum score on the first-contact-utilization scale, indicating that a ceiling effect may be present for this scale; there was no evidence of a floor or ceiling effect for other scales. Tests of alpha coefficients and inter-factor correlations demonstrated that each primary care scale made a unique contribution to the instrument.¹

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: Based on a framework of primary care.²

Country: United States

Past or Validated Applications*:

- **Patient Age:** Adults
- **Patient Condition:** General Population/Not Condition Specific
- **Setting:** Primary Care Facility

*Based on the sources listed below and input from the measure developers.

Notes:

- All instrument items are available online.³
- This instrument contains 131 items; 80 were mapped.
- There are 4 expanded versions of this instrument addressing 4 perspectives: (1) child, (2) adult, (3) facility, and (4) physician. There are 4 short versions for each of the 4 perspectives as well.
- Versions of the PCAT tools are also available in Spanish, Catalan, Portuguese, Mandarin Chinese (both People's Republic of China and Taiwan), and Korean.³
- The PCAT is in the process of being computerized, in administration as well as scoring, for widespread use around the world, including especially Southeast Asia, the Gulf States, several countries in Europe, South Africa, several countries in Latin America (especially Brazil and Uruguay), China and Hong Kong, and others. (B. Starfield, personal communication, September 8, 2010).
- The PCAT includes measures for consumers (i.e. health survey), patients, providers, facility managers and a system tool. All address primary care domains in a comparable way. For further information, please see Appendix IV for contact information or visit the Web site, which provides detailed instructions and implementation use.³

Sources:

1. Shi LY, Starfield BH, Xu J. Validating the Adult Primary Care Assessment Tool. *J Fam Pract* 2001;50:161.
2. Starfield B. *Primary care: Concept, evaluation, and policy*. New York: Oxford University Press; 1992.
3. Johns Hopkins University Bloomberg School of Public Health. Available at: http://www.jhsph.edu/pcpc/pca_tools.html. Accessed: 20 September 2010.
4. Shi LY, Starfield BH, Xu J, et al. Primary care quality: Community health center and health maintenance organization. *South Med J* 2003;96(8):787-95.

Measure #17c. Primary Care Assessment Tool – Facility Expanded Edition (PCAT – FE)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			□
<i>Interpersonal communication</i>			■
<i>Information transfer</i>			■
Facilitate transitions			
<i>Across settings</i>			□
<i>As coordination needs change</i>			
Assess needs and goals			■
Create a proactive plan of care			
Monitor, follow up, and respond to change			■
Support self-management goals			■
Link to community resources			■
Align resources with patient and population needs			■
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			□
Care management			
Medication management			■
Health IT-enabled coordination			□

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Primary Care Assessment Tool – Facility Expanded Edition (PCAT – FE)

Purpose: To measure primary care quality and the extent to which it meets consumer needs, as identified from the facility perspective.

Format/Data Source: 153-item survey with coverage across 4 domains of primary care: (1) longitudinality, (2) accessibility, (3) comprehensiveness, and (4) coordination. Relevant subtopics include: (C) first contact – access, (D) ongoing care, (E) coordination, (F) coordination – information systems, (G) comprehensiveness – services available, (H) comprehensiveness – services provided, (I) family-centeredness, (J) community orientation, (K) culturally competent, and Other. Some questions are designated as specifically related to care coordination. However, other items in other domains may be relevant to care coordination, although they are not explicitly categorized as measuring care coordination. Responses provided on a Likert scale.

Date: Measure published in 1998.¹

Perspective: System Representative(s)

Measure Item Mapping:

- **Communicate:**
 - *Between health care professional(s) and patient/family:* E7
 - Interpersonal communication:
 - *Between health care professional(s) and patient/family:* C4, D2-D4, D6, E8, E12, I1, I4-I10
 - Information transfer:
 - *Between health care professional(s) and patient/family:* D10, E1, F1-F4, I2
 - *Across health care teams or settings:* E10, E11
- **Facilitate transitions:**
 - Across settings: E9
- **Assess needs and goals:** D7, D9, E8, I1, I11-I14
- **Monitor, follow up, and respond to change:** C8, E7, E11, E12, F7
- **Support self-management goals:** G1-G25, H1-H18
- **Link to community resources:** J13-J17, J21-J23
- **Align resources with patient and population needs:** C1-C9, I3, J1, J4-J9, K2-10
- **Health care home:** 14, D1
- **Medication management:** D13, F8, H7
- **Health IT-enabled coordination:** 13

Development and Testing: No testing was described in the sources identified. However, testing information is available for other versions.^{1,2}

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: Based on a framework of primary care.³

Country: United States

Past or Validated Applications*:

- **Patient Age:** Not Applicable
- **Patient Condition:** Not Applicable
- **Setting:** Primary Care Facility

*Based on the sources listed below and input from the measure developer.

Notes:

- All instrument items are located online.¹
- This instrument contains 153 items; 114 were mapped.
- There are 4 expanded versions of this instrument addressing 4 perspectives: (1) child, (2) adult, (3) facility, and (4) physician. There are 4 short versions for each of the 4 perspectives as well.
- The PCAT-FE uses a majority of the same items across the same domains as the PCAT-PE.
- Versions of the PCAT tools are also available in Spanish, Catalan, Portuguese, Mandarin Chinese (both People's Republic of China and Taiwan), and Korean.¹
- The PCAT is in the process of being computerized, in administration as well as scoring, for widespread use around the world, including especially Southeast Asia, the Gulf States, several countries in Europe, South Africa, several countries in Latin America (especially Brazil and Uruguay), China and Hong Kong, and others. (B. Starfield, personal communication, September 8, 2010).
- The PCAT includes measures for consumers (i.e. health survey), patients, providers, facility managers and a system tool. All address primary care domains in a comparable way. For further information, please see Appendix IV for contact information or visit the Web site, which provides detailed instructions and implementation use.¹

Sources:

1. Johns Hopkins University Bloomberg School of Public Health. Available at: http://www.jhsph.edu/pcpc/pca_tools.html. Accessed: 20 September 2010.
2. Shi LY, Starfield BH, Xu J. Validating the Adult Primary Care Assessment Tool. *J Fam Pract* 2000; 50:161.
3. Starfield B. *Primary care: Concept, evaluation, and policy*. New York: Oxford University Press; 1992.
4. Starfield B, Cassady C, Nanda J, et al. Consumer experiences and provider perceptions of the quality of primary care: implications for managed care. *J Fam Pract* 1998;46:216-26.

Measure #17d. Primary Care Assessment Tool – Provider Expanded Edition (PCAT – PE)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate		□	
<i>Interpersonal communication</i>		■	
<i>Information transfer</i>		■	
Facilitate transitions			
<i>Across settings</i>		□	
<i>As coordination needs change</i>			
Assess needs and goals		■	
Create a proactive plan of care			
Monitor, follow up, and respond to change		■	
Support self-management goals		■	
Link to community resources		■	
Align resources with patient and population needs		■	
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home		□	
Care management			
Medication management		■	
Health IT-enabled coordination		□	

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Primary Care Assessment Tool – Provider Expanded Edition (PCAT – PE)

Purpose: To measure primary care quality and the extent to which it meets consumer needs, as identified from the provider perspective.

Format/Data Source: 153-item survey with coverage across 4 domains of primary care: (1) longitudinality, (2) accessibility, (3) comprehensiveness, and (4) coordination. Relevant subtopics include: (C) first contact – access, (D) ongoing care, (E) coordination, (F) coordination – information systems, (G) comprehensiveness – services available, (H) comprehensiveness – services provided, (I) family-centeredness, (J) community orientation, (K) culturally competent, and Other.

Date: Measure published in 1998.¹

Perspective: Health Care Professional(s)

Measure Item Mapping:

- **Communicate:**
 - *Between health care professional(s) and patient/family:* E7
 - Interpersonal communication:
 - *Between health care professional(s) and patient/family:* C4, D2-D4, D6, E8, E12, I1, I4-I10,
 - Information transfer:
 - *Between health care professional(s) and patient/family:* D10, E1, F1-F4, I2
 - *Across health care teams or settings:* E10, E11
- **Facilitate transitions:**
 - Across settings: E9
- **Assess needs and goals:** D7, D9, E8, I1, I11-I14,
- **Monitor, follow up, and respond to change:** C8, E7, E11, E12, F7
- **Support self-management goals:** G1-G25, H1-H18
- **Link to community resources:** J13-J17, J21-J23
- **Align resources with patient and population needs:** C1-C9, I3, J1, J4-J9, K2-10
- **Health care home:** 14
- **Medication management:** D13, F8, H7
- **Health IT-enabled coordination:** 13, D1

Development and Testing: No testing was described in the sources identified. However, testing information is available for other versions.^{1,2}

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: Based on a framework of primary care.³

Country: United States

Past or Validated Applications*:

- **Patient Age:** Not Applicable
- **Patient Condition:** Not Applicable
- **Setting:** Primary Care Facility

*Based on the sources listed below and input from the measure developers.

Notes:

- All instrument items are located online.¹
- This instrument contains 153 items; 114 were mapped.
- There are 4 expanded versions of this instrument addressing 4 perspectives: (1) child, (2) adult, (3) facility, and (4) physician. There are 4 short versions for each of the 4 perspectives as well.
- The PCAT-PE uses a majority of the same items across the same domains as the PCAT-FE.
- Versions of the PCAT tools are also available in Spanish, Catalan, Portuguese, Mandarin Chinese (both People's Republic of China and Taiwan), and Korean.¹
- The PCAT is in the process of being computerized, in administration as well as scoring, for widespread use around the world, including especially Southeast Asia, the Gulf States, several countries in Europe, South Africa, several countries in Latin America (especially Brazil and Uruguay), China and Hong Kong, and others. (B. Starfield, personal communication, September 8, 2010).
- The PCAT includes measures for consumers (i.e. health survey), patients, providers, facility managers and a system tool. All address primary care domains in a comparable way. For further information, please see Appendix IV for contact information or visit the Web site, which provides detailed instructions and implementation use.¹

Sources:

1. Johns Hopkins University Bloomberg School of Public Health. Available at: http://www.jhsph.edu/pcpc/pca_tools.html. Accessed: 20 September 2010.
2. Shi LY, Starfield BH, Xu J. Validating the Adult Primary Care Assessment Tool. *J Fam Pract* 2000; 50:161.
3. Starfield B. *Primary care: Concept, evaluation, and policy*. New York: Oxford University Press; 1992.
4. Starfield B, Cassady C, Nanda J, et al. Consumer experiences and provider perceptions of the quality of primary care: implications for managed care. *J Fam Pract* 1998;46:216-26.

Measure #18. Physician-Pharmacist Collaboration Instrument (PPCI)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility		■	
Communicate			
<i>Interpersonal communication</i>		□	
<i>Information transfer</i>		□	
Facilitate transitions			
<i>Across settings</i>			
<i>As coordination needs change</i>			
Assess needs and goals			
Create a proactive plan of care			
Monitor, follow up, and respond to change			
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination		□	
Health care home			
Care management			
Medication management		□	
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Physician-Pharmacist Collaboration Instrument (PPCI)

Purpose: To assess physician-pharmacist collaborative relationships across three domains: trustworthiness; role specification; relationship initiation.

Surveys can be directed at physicians and pharmacists respectively: questions are identical with provider title (physician/pharmacist) interchanged depending on the study population.

Format/Data Source: 14-item survey that consists of 3 domains of collaboration: (1) trustworthiness, (2) role specification, and (3) relationship initiation.

Date: Measure published in 2005.¹

Perspective: Health Care Professional(s)

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 1, 5-8
- **Communicate:**
 - Interpersonal communication:
 - *Across health care teams or settings:* 3, 11
 - Information transfer:
 - *Across health care teams or settings:* 13
- **Teamwork focused on coordination:** 9, 12
- **Medication management:** 7, 8

Development and Testing: Testing of an initial 27-item version was conducted using results from 340 surveys. Principal component analysis was used to assess the structure and uncover underlying dimensions of the initial instrument. Items were evaluated for inclusion or exclusion and subsequently refined into a 14-item instrument. Validity and reliability were established for the 14-item version of the PPCI based on confirmatory factor analysis and Cronbach's alpha scores, respectively. The authors caution that the survey may not reflect interactions for physicians working with more than 1 pharmacist. The 14-item version is preferred over the 26-item version on the basis of brevity and similar psychometric properties.¹ The sensitivity of the instrument was established through a randomized, intervention trial.²

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: The authors developed a theoretical model of physician-pharmacist collaborative working relationships.³

Country: United States

Past or Validated Applications*:

- **Patient Age:** Not Age Specific

- **Patient Condition:** Combined Chronic Conditions, General Chronic Conditions, General Population/Not Condition Specific
- **Setting:** Primary Care Facility, Not Setting Specific

*Based on the sources listed below and input from the measure developer.

Notes:

- The original measure did not have individual items numbered. In order to properly reference specific items within this profile, all instrument items were consecutively numbered. The instrument was provided by the corresponding author upon request (A.J. Zillich, personal communication, September 9, 2010).
- This instrument contains 14 items; 10 were mapped.

Sources:

1. Zillich AJ, Doucette WR, Carter BL, et al. Development and initial validation of an instrument to measure physician-pharmacist collaboration from the physician perspective. *Value Health* 2005;8(1):59-66.
2. Zillich AJ, Milchak JL, Carter BL, et al. Utility of a questionnaire to measure physician/pharmacist collaborative relationships. *J Am Pharm Assoc* 2006;46:453-58.
3. McDonough R, Doucette W. A conceptual framework for collaborative working relationships between pharmacists and physicians. *J Am Pharm Assoc* 2001;41:682-92.
4. Zillich AJ, McDonough RP, Carter BL, et al. Influential characteristics of physician/pharmacist collaborative relationships. *Ann Pharmacother* 2004;38:764-70.

Measure #19. Patient-Centered Medical Home (PCMH) Survey of Structural Capabilities of Primary Care Practice Sites

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			
<i>Interpersonal communication</i>			
<i>Information transfer</i>			
Facilitate transitions			
<i>Across settings</i>			
<i>As coordination needs change</i>			
Assess needs and goals			
Create a proactive plan of care			
Monitor, follow up, and respond to change			■
Support self-management goals			□
Link to community resources			
Align resources with patient and population needs			■
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			■
Care management			
Medication management			
Health IT-enabled coordination			□

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Patient-Centered Medical Home (PCMH) Survey of Structural Capabilities of Primary Care Practice Sites

Purpose: To measure the prevalence of recommended capabilities for medical home practices.

Format/Data Source: 13-item survey that addresses 13 structural capabilities across four main domains: (1) patient assistance and reminders, (2) culture of quality, (3) enhanced access, and (4) electronic health records.

Date: Measure published in 2008.¹

Perspective: System Representative(s)

Measure Item Mapping:

- **Monitor, follow up, and respond to change:** 2-5
- **Support self-management goals:** 1
- **Align resources with patient and population needs:** 10-12
- **Health care home:** 1-13
- **Health IT-enabled coordination:** 13

Development and Testing: The survey is based on evidence and findings from previously published literature, as well as existing surveys of physician group characteristics. It was revised from its original version to improve validity after cognitive testing by physicians was completed.¹

Link to Outcomes or Health System Characteristics: A survey of 308 adult primary care practices in Massachusetts revealed that larger and network-affiliated practices were more likely than smaller, non-affiliated practices to have implemented recommended medical home components.¹

Logic Model/Conceptual Framework: National Committee for Quality Assurance (NCQA) Standards for a Patient-Centered Medical Home.¹

Country: United States

Past or Validated Applications*:

- **Patient Age:** Not Applicable
- **Patient Condition:** Not Applicable
- **Setting:** Primary Care Facility

*Based on the source listed below and input from the measure developer.

Notes:

- All instrument items are located in the Appendix of the source article.¹
- This instrument contains 13 items; all 13 were mapped.

Source:

1. Friedberg MW, Safran DG, Coltin KL, et al. Readiness for the patient-centered medical home: Structural capabilities of Massachusetts primary care practices. *J Gen Int Med* 2008;24(2):162-9.

Measure #20. Family Medicine Medication Use Processes Matrix (MUPM)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility		□	
Communicate			
<i>Interpersonal communication</i>			
<i>Information transfer</i>		□	
Facilitate transitions			
<i>Across settings</i>			
<i>As coordination needs change</i>			
Assess needs and goals		□	
Create a proactive plan of care			
Monitor, follow up, and respond to change		■	
Support self-management goals		□	
Link to community resources			
Align resources with patient and population needs		□	
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management		■	
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Family Medicine Medication Use Processes Matrix (MUPM)

Purpose: To measure the perceptions of primary care physicians (family practice) in regard to pharmacists' contributions within the practices.

Format/Data Source: 22-item Family Medicine Medication Use Processes Matrix instrument mailed to family practice physicians at 3 times: (1) 3 months, (2) 1 year, and (3) 19 months after pharmacist integration. There are response sections for 5 different health care professionals: (1) family physician, (2) family practice pharmacist, (3) nurse, (4) receptionist, and (5) community pharmacist.

Date: Measure published in 2008.¹

Perspective: Health Care Professional(s)

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 13
- **Communicate:**
 - Information transfer:
 - *Within teams of health care professionals:* 20
 - *Participants not specified:* 17
- **Assess needs and goals:** 4, 9
- **Monitor, follow up, and respond to change:** 9, 11, 12
- **Support self-management goals:** 9, 19
- **Align resources with patient and population needs:** 19
- **Medication management:** 3, 5, 7, 10, 15-18, 20

Development and Testing: The IMPACT Program was used in large scale to develop this 22-item Family Medicine Medication Use Processes Matrix (MUPM). The self-completed questionnaire was pilot tested by 11 pharmacists, nurses, and physicians. Five theoretical groupings were identified: (1) Diagnosis & Prescribing, (2) Monitoring, (3) Administrative/Documentation, (4) Education, and (5) Medication Review. Good internal consistency and test-retest reliability were demonstrated. Preliminary validation suggested the tool can identify differences in how health professionals view their and others' roles in primary care. Cronbach's alpha coefficient was used to determine internal consistency, test-retest reliability scores were calculated using intra-class coefficients, and all were deemed sufficiently valid.¹

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: Development of the MUPM instrument was informed by several frameworks of medication-use processes. The MUPM was developed as part of the Integrating family Medicine and Pharmacy to Advance primary Care Therapeutics (IMPACT) project.¹

Country: United States

Past or Validated Applications*:

- **Patient Age:** Not Applicable
- **Patient Condition:** Not Applicable
- **Setting:** Primary Care Facility

*Based on the sources listed below and input from the measure developer.

Notes:

- This instrument was provided by the corresponding author upon request (B. Farrell, personal communication, September 13, 2010).
- This instrument contains 23 items; 15 were mapped.

Sources:

1. Farrell B, Pottie K, Woodend K, et al. Developing a tool to measure contributions to medication-related processes in family practice. *J Interprof Care* 2008;22(1):17-29.
2. Farrell B, Pottie K, Woodend K, et al. Shifts in expectations: Evaluating physicians' perceptions as pharmacists become integrated into family practice. *J Interprof Care* 2010;24(1):80-9.

Measure #21. Resources and Support for Self-Management (RSSM)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			
<i>Interpersonal communication</i>	□		
<i>Information transfer</i>	□		
Facilitate transitions			
<i>Across settings</i>	□		
<i>As coordination needs change</i>			
Assess needs and goals	■		
Create a proactive plan of care	□		
Monitor, follow up, and respond to change	■		
Support self-management goals	■		
Link to community resources	■		
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management	■		
Medication management	□		
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Resources and Support for Self-Management (RSSM)

Purpose: To measure the receipt of self-management support for chronically ill patients.

Format/Data Source: Adapted the 20-item Patient Assessment of Chronic Illness Care (PACIC) survey, adding new items that addressed domains (including followup and support for community resources) and removing others, for a finalized 17-item instrument. The RSSM portion of the survey contains 17 items spanning 5 areas: (1) individualized assessment, (2) collaborative goal setting, (3) enhancing skills, (4) ongoing followup and support, and (5) community resources.

Date: Measure published in 2008.¹

Perspective: Patient/Family

Measure Item Mapping:

- **Communicate:**
 - Interpersonal communication:
 - *Between health care professional(s) and patient/family:* 10, 15
 - Information transfer:
 - *Between health care professional(s) and patient/family:* 14
- **Facilitate transitions:**
 - Across settings: 9
- **Assess needs and goals:** 1, 2, 4, 5
- **Create a proactive plan of care:** 3, 4
- **Monitor, follow up, and respond to change:** 1, 2, 5, 9-15
- **Support self-management goals:** 1, 6-8, 11
- **Link to community resources:** 11, 16, 17
- **Care management:** 1-15
- **Medication management:** 12, 13

Development and Testing: Two rounds of cognitive testing on 14 participants pilot-tested the RSSM questionnaire. Further testing was performed on a sample of 957 patients with diabetes. Cronbach's alpha coefficients supported construct validity. The RSSM tool exhibited good psychometric properties and was used successfully by respondents of varying education levels.¹

Link to Outcomes or Health System Characteristics: Patients with diabetes who reported higher RSSM scores also reported better self-management behaviors (more frequently checking blood sugar and feet, greater program participation, better diet and nutrition behaviors, and greater physical activity).¹

Logic Model/Conceptual Framework: The Chronic Care Model provided the framework for construction of the RSSM. The model identifies 6 elements of a delivery system that lead to improved care for the chronically ill, including: (1) organization of care within the health system,

(2) clinical information systems, (3) decision support, (4) delivery system design, (5) self-management support, and (6) community resources and policies.¹

Country: United States

Past or Validated Applications*:

- **Patient Age:** Not Age Specific
- **Patient Condition:** Combined Chronic Conditions, General Chronic Conditions
- **Setting:** Primary Care Facility

*Based on the source listed below and input from the measure developer.

Notes:

- All instrument items are located in Table 2 of the source article.¹
- This instrument contains 17 items; all 17 were mapped.

Source:

1. McCormack LA, Williams-Piehota PA, Bann CM, et al. Development and validation of an instrument to measure resources for chronic illness self-management: a model using diabetes. *Diabetes Educator* 2008;34(4):707-18.

Measure #22a. Continuity of Care Practices Survey – Program Level (CCPS-P)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			□
<i>Interpersonal communication</i>			□
<i>Information transfer</i>			■
Facilitate transitions			
<i>Across settings</i>			■
<i>As coordination needs change</i>			□
Assess needs and goals			
Create a proactive plan of care			□
Monitor, follow up, and respond to change			■
Support self-management goals			□
Link to community resources			■
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			■
Medication management			
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Continuity of Care Practices Survey – Program Level (CCPS-P)

Purpose: To evaluate the program-level version of the Continuity of Care Practices Survey (CCPS-P) addressing continuity of care in substance use disorder (SUD) treatment programs.

Format/Data Source: The CCPS-P is a 23-item instrument that addresses 4 continuity of care practice subscales from a program-level perspective. These subscales include: (1) provider continuity, (2) maintain contact, (3) connect to resources, and (4) coordinate care. Responses provided on a Likert scale.

Date: Measure published in 2004.¹

Perspective: System Representative(s)

Measure Item Mapping:

- **Communicate:**
 - *Within teams of health care professionals:* 8D, 8E
 - Interpersonal communication:
 - *Within teams of health care professionals:* 8A
 - Information transfer:
 - *Between health care professional(s) and patient/family:* 9.2, 9.3
 - *Within teams of health care professionals:* 8C
- **Facilitate transitions:**
 - Across settings: 4, 5A-6A, 7A-F, 8B, 9.1-9.4,
 - As coordination needs change: 6B
- **Create a proactive plan of care:** 8B
- **Monitor, follow up, and respond to change:** 5A-6B, 8D, 8E
- **Support self-management goals:** 9.1
- **Link to community resources:** 7B-D
- **Care management:** 10A-C, 11

Development and Testing: All Veterans Administration (VA) intensive SUD treatment programs were identified through telephone interviews. Questionnaires were mailed to directors of these programs to obtain data necessary to examine the reliability and discriminant validity of the CCPS-P. Internal consistency reliability was demonstrated via Cronbach's alpha coefficients, which were moderate to high for 117 of the 129 SUD programs on psychometric characteristics. Preliminary evidence of discriminant validity was also demonstrated. Predictive validity was assessed through regression analyses using data from both the program level and the individual level. Internal reliability of the CCPS subscales was supported across inpatient/residential and outpatient SUD programs for both the program and individual levels.¹

Link to Outcomes or Health System Characteristics: Patients in outpatient, but not inpatient/residential, programs who received more continuity of care, as measured by the CCPS-P and CCPS-I, remained engaged in continuing care for longer periods of time than patients with

weaker continuity of care scores.² Continuity of care practices have also been shown to influence abstinence from substance abuse when mediated through patients' engagement in continuing care.³

Logic Model/Conceptual Framework: None described in the sources identified.

Country: United States

Past or Validated Applications*:

- **Patient Age:** Adults
- **Patient Condition:** Combined Chronic Conditions, Mental Illness & Substance Use Disorders
- **Setting:** Behavioral Health Care Facility

*Based on the sources listed below and input from the measure developer.

Notes:

- Instrument was provided by the corresponding author upon request (J.A. Schaefer, personal communication, September 1, 2010).
- This instrument contains 23 items; all 23 were mapped.
- Further application and testing of the CCPS-P is available.^{2,3}

Sources:

1. Schaefer JA, Cronkite R, Ingudomnukul E. Assessing continuity of care practices in substance use disorder treatment programs. *J Stud Alcohol* 2004;65:513-20.
2. Schaefer JA, Ingudomnukul BA, Harris AHS, et al. Continuity of Care Practices and Substance Use Disorder Patients' Engagement in Continuing Care. *Med Care* 2005;43(12):1234-41.
3. Schaefer JA, Harris AHS, Cronkite RC, et al. Treatment staff's continuity of care practices, patients' engagement in continuing care, and abstinence following outpatient substance-use disorder treatment. *J Stud Alcohol Drugs* 2008;69(5):747-56.

Measure #22b. Continuity of Care Practices Survey – Individual Level (CCPS-I)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility		□	
Communicate		□	
<i>Interpersonal communication</i>		□	
<i>Information transfer</i>		■	
Facilitate transitions			
<i>Across settings</i>		■	
<i>As coordination needs change</i>		□	
Assess needs and goals			
Create a proactive plan of care		□	
Monitor, follow up, and respond to change		■	
Support self-management goals		□	
Link to community resources		■	
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management		□	
Medication management			
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Continuity of Care Practices Survey – Individual Level (CCPS-I)

Purpose: To evaluate the individual-level version of the Continuity of Care Practices Survey (CCPS-I) addressing continuity of care in substance use disorder (SUD) treatment programs.

Format/Data Source: The CCPS-I was reformatted for individual patients but addresses the same 4 continuity of care practice subscales: (1) provider continuity, (2) maintain contact, (3) connect to resources, and (4) coordinate care. Responses were provided on a Likert scale.

Date: Measure published in 2004.¹

Perspective: Health Care Professional(s)

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 5B
- **Communicate:**
 - *Across health care teams or settings:* 9E
 - Interpersonal communication:
 - *Between health care professional(s) and patient/family:* 7A
 - *Within teams of health care professionals:* 7G
 - Information transfer:
 - *Between health care professional(s) and patient/family:* 8.2, 8.3
 - *Across health care teams or settings:* 7I
- **Facilitate transitions:**
 - Across settings: 5A, 7A-I, 8.1-8.4, 9D
 - As coordination needs change: 6
- **Create a proactive plan of care:** 7F, 7H
- **Monitor, follow up, and respond to change:** 9A-C, 9E, 9F
- **Support self-management goals:** 8.1
- **Link to community resources:** 7B-E
- **Care management:** 5B

Development and Testing: All Veterans Administration intensive SUD treatment programs were identified through telephone interviews. Questionnaires were mailed to directors of these programs to obtain data necessary to examine the reliability and discriminant validity of the CCPS-P. Internal consistency reliability was demonstrated via Cronbach's alpha coefficients, which were moderate to high for 117 of the 129 SUD programs on psychometric characteristics. Preliminary evidence of discriminant validity was also demonstrated. Predictive validity was assessed through regression analyses using data from both the program level and the individual level. Internal reliability of the CCPS subscales was supported across inpatient/residential and outpatient SUD programs for both the program and individual levels.¹

Link to Outcomes or Health System Characteristics: Patients in outpatient, but not inpatient/residential, programs who received more continuity of care, as measured by the CCPS-

P and CCPS-I, remained engaged in continuing care for longer periods of time than patients with weaker continuity of care scores.² Continuity of care practices have also been shown to influence abstinence from substance abuse when mediated through patients' engagement in continuing care.³

Logic Model/Conceptual Framework: None described in the sources identified.

Country: United States

Past or Validated Applications*:

- **Patient Age:** Adults
- **Patient Condition:** Combined Chronic Conditions, Mental Illness & Substance Use Disorders
- **Setting:** Behavioral Health Care Facility

*Based on the sources listed below and input from the measure developer.

Notes:

- Instrument was provided by the corresponding author upon request (J.A. Schaefer, personal communication, September 1, 2010).
- This instrument contains 22 items; all 22 were mapped.
- Further application and testing of the CCPS-I is available.^{2,3}

Sources:

1. Schaefer JA, Cronkite R, Ingudomnukul E. Assessing continuity of care practices in substance use disorder treatment programs. *J Stud Alcohol* 2004;65:513-20.
2. Schaefer JA, Ingudomnukul BA, Harris AHS, et al. Continuity of Care Practices and Substance Use Disorder Patients' Engagement in Continuing Care. *Med Care* 2005;43(12):1234-41.
3. Schaefer JA, Harris AHS, Cronkite RC, et al. Treatment staff's continuity of care practices, patients' engagement in continuing care, and abstinence following outpatient substance-use disorder treatment. *J Stud Alcohol Drugs* 2008;69(5):747-56.

Measure #23. Nursing Home Work Environment and Performance Team Survey

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate		■	
<i>Interpersonal communication</i>			
<i>Information transfer</i>		■	
Facilitate transitions			
<i>Across settings</i>			
<i>As coordination needs change</i>			
Assess needs and goals		■	
Create a proactive plan of care		■	
Monitor, follow up, and respond to change		□	
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination		□	
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Nursing Home Work Environment and Performance Team Survey

Purpose: To develop an instrument that will assess work environment and perceived work effectiveness in a nursing home facility.

Format/Data Source: Survey consists of three components of complementary nursing home attributes, including work environment and performance. Responses to the first component were based on a 5-point Likert scale. Responses to the second component were based on a 12-item Likert scale from the LEAP Survey.¹

Date: Measure published in 2009.¹

Perspective: Health Care Professional(s)

Measure Item Mapping:

- **Communicate:**
 - *Within teams of health care professionals:* 1A7, 1A10, 1C8
 - *Across health care teams or settings:* 1C7
- Information transfer:
 - *Within teams of health care professionals:* 1B12
 - *Across health care teams or settings:* 1B13
 - *Participants not specified:* 1B15, 1C2
- **Assess needs and goals:** 1C8, 1D1, 1D5
- **Create a proactive plan of care:** 1A10, 1B10, 1C6, 1C8
- **Monitor, follow up, and respond to change:** 1C2
- **Teamwork focused on coordination:** 1C4, 1D7

Development and Testing: Instrument items were adapted from a previously validated team survey in PACE programs (H. Temkin-Greener, personal communication, September 1, 2010). Reliability and construct validity were demonstrated. Two items were removed through exploratory factor analysis. Redundancy, conceptual independence, and convergent-divergent validity were assessed via Pearson correlation coefficients. Standardized Cronbach's alphas measured internal consistency and indicated high reliability.¹

Link to Outcomes or Health System Characteristics: While controlling for facility characteristics, the primary assignment of staff to residents was significantly associated with fewer quality of care (QC) and high severity deficiencies. Additionally, greater penetration of the self-managed teams within the nursing homes was associated with fewer QC deficiencies.³

Logic Model/Conceptual Framework: The Shortell model was successfully adapted for a previous instrument upon which this study is related.⁴

Country: United States

Past or Validated Applications*:

- **Patient Age:** Older Adults, Adults
- **Patient Condition:** General Population/Not Condition Specific
- **Setting:** Long Term Care Facility

*Based on the sources listed below.

Notes:

- Instrument was provided by the corresponding author upon request (H. Temkin-Greener, personal communication, September 1, 2010).
- This instrument contains 86 items. Only Section 1 was mapped, which contains 46 items; 14 of which were mapped.

Sources:

1. Temkin-Greener H, Zheng N, Katz P, et al. Measuring work environment and performance in nursing homes. *Med Care* 2009; 47(4):482-91.
2. Temkin-Greener H, Cai S, Katz P, et al. Daily practice teams in nursing homes: Evidence from New York State. *Gerontologist* 2009; 49(1):68-80.
3. Temkin-Greener H, Zheng NT, Shubing C, et al. Nursing home environment and organizational performance – association with deficiency citations. *Med Care* 2010; 48(4): 357-364.
4. Shortell S, Rousseau DM. Excerpted from *The Organization and Management of Intensive Care Units* [pamphlet]. 1989.

Measure #24. Measure of Processes of Care (MPOC-28)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate	■		
<i>Interpersonal communication</i>			
<i>Information transfer</i>	■		
Facilitate transitions			
<i>Across settings</i>			
<i>As coordination needs change</i>	□		
Assess needs and goals	■		
Create a proactive plan of care	□		
Monitor, follow up, and respond to change	□		
Support self-management goals	■		
Link to community resources	□		
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination	■		
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Measure of Processes of Care (MPOC-28)

Purpose: To evaluate the quality of care during the habilitation process specific to children and adolescents.

Format/Data Source: Measurement of Processes of Care (MPOC) modified to MPOC-28 in a written survey (questionnaire). The 28-item questionnaire addresses the same 5 areas as the MPOC-20: (1) enabling and partnership, (2) general information, (3) specific information, (4) coordinated care and comprehensive care, and (5) respectful and supportive care. Habilitation is here described as, “a multifaceted service in which contributions are based on learning and experience from different areas, woven together in a complex network. Habilitation services are aimed at children with disabilities themselves, their families and at the network of people around the children. A fundamental factor in family-centered habilitation is that the interests of the child and family should guide the process both in assessing needs and in planning and carrying out the programme.”¹

Date: Measure published in 2002.¹

Perspective: Patient/Family

Measure Item Mapping:

- **Communicate:**
 - *Between health care professional(s) and patient/family:* 18, 19, 24
 - *Across health care teams or settings:* 28
 - Information transfer:
 - *Between health care professional(s) and patient/family:* 6, 8, 9, 20
- **Facilitate transitions:**
 - As coordination needs change: 26
- **Assess needs and goals:** 2-4, 6, 19
- **Create a proactive plan of care:** 10, 22
- **Monitor, follow up, and respond to change:** 5, 26
- **Support self-management goals:** 12-15, 27
- **Link to community resources:** 11, 15
- **Teamwork focused on coordination:** 22, 25, 28

Development and Testing: This instrument was developed and tested in a previous article in reference to a longer version of the instrument, MPOC-56. Construct validity and significance were demonstrated and questions were grouped via five factors: (1) enabling and partnership, (2) general information, (3) specific information, (4) coordinated and comprehensive care, and (5) respectful and supportive care. Differences were compared, applied, and addressed concerning scales between MPOCs. Test-retest reliability with Cronbach’s alpha coefficients, intra-class correlation coefficients, and construct validation were all successfully demonstrated. Internal consistency was confirmed in pilot testing and beyond, while validity was supported by factor analysis.²

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: None described in the sources identified.

Country: United States

Past or Validated Applications*:

- **Patient Age:** Children
- **Patient Condition:** Combined Chronic Conditions, Children with Special Health Care Needs, Other – Children with Disabilities
- **Setting:** Other Setting – Habilitation Departments

*Based on the sources listed below.

Notes:

- All instrument items are located in Appendix 1 of the source article.¹
- This instrument contains 28 items; 22 were mapped.
- 2 other versions are available: (1) MPOC-56 and (2) MPOC-20.³ Testing information on the MPOC-56 is also provided by King.²

Sources:

1. Granat T, Lagander B, Borjesson MC. Parental participation in the habilitation process: Evaluation from a user perspective. *Child Care Health Dev* 2002;28(6):459-67.
2. King SM, Rosenbaum PL, King GA. Parents' perceptions of care giving: development and validation of a measure of processes. *Dev Med Child Neurol* 1996;38:757-72.
3. McMaster University Measure of Processes of Care (MPOC) Web site. Available at: http://www.canchild.ca/en/measures/mpoc56_mpoc20.asp. Accessed: 20 September 2010.

Measure #25. Care Evaluation Scale for End-of-Life Care (CES)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate	■		
<i>Interpersonal communication</i>			
<i>Information transfer</i>			
Facilitate transitions			
<i>Across settings</i>			
<i>As coordination needs change</i>			
Assess needs and goals	■		
Create a proactive plan of care			
Monitor, follow up, and respond to change	□		
Support self-management goals	□		
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination	□		
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Care Evaluation Scale for End-of-Life Care (CES)

Purpose: To develop an instrument that measures the perceptions of palliative and/or end-of-life care from the perspective of the bereaved family.

Format/Data Source: 28-item questionnaire mailed to bereaved families who had a patient in palliative, end-of-life care. 10 subscales cover: (1) physical care by physicians, (2) physical care by nurses, (3) psycho-existential care, (4) help with decisionmaking for patients, (5) help with decisionmaking for family, (6) environment, (7) family burden, (8) cost, (9) availability, and (10) coordination and consistency. Responses were structured on a 6-point Likert scale.

Date: Measure was published in 2004.¹

Perspective: Patient/Family

Measure Item Mapping:

- **Communicate:**
 - *Between health care professional(s) and patient/family:* 10, 11, 13-15
- **Assess needs and goals:** 9, 12, 28
- **Monitor, follow up, and respond to change:** 28
- **Support self-management goals:** 12
- **Teamwork focused on coordination:** 26, 27

Development and Testing: The CES instrument, originally 67 items, was pilot tested and revised to 28 items. Questions were developed from the Sat-Fam-IPC scale and revised after pilot testing and after receipt of written survey comments. Instrument originally in Japanese and translated through a double back-translation to English. It successfully measures aspects of palliative care and areas for improvement through demonstration of a valid Cronbach's alpha coefficient of 0.98 and an intra-class correlation coefficient in the test-retest examination of 0.57. Confirmatory factor analysis was examined and supported construct validity. Convergent and discriminant validity were calculated through correlation coefficients between the CES subscale scores and the perceived experience, yielding satisfactory results. Pearson's correlation coefficients between subscale scores established social desirability of the CES.¹

Link to Outcomes or Health System Characteristics: None described in the source identified.

Logic Model/Conceptual Framework: None described in the source identified.

Country: United States

Past or Validated Applications*:

- **Patient Age:** Not Age Specific
- **Patient Condition:** Combined Chronic Conditions, Cancer/Oncology, Other – End-of-Life
- **Setting:** Inpatient Facility

*Based on the source listed below and input from the measure developer.

Notes:

- All instrument items are located in the Appendix of the source article.¹
- This instrument contains 28 items; 12 were mapped.

Source:

1. Morita T, Hirai K, Sakaguchi Y, et al. Measuring the quality of structure and process in end-of-life care from the bereaved family perspective. *J Pain Symptom Manage* 2004;27(6):492-501.

Measure #26. Oncology Patients’ Perceptions of the Quality of Nursing Care Scale (OPPQNCS)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility	□		
Communicate	■		
<i>Interpersonal communication</i>			
<i>Information transfer</i>	□		
Facilitate transitions			
<i>Across settings</i>	□		
<i>As coordination needs change</i>			
Assess needs and goals	■		
Create a proactive plan of care			
Monitor, follow up, and respond to change	□		
Support self-management goals	□		
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Oncology Patients' Perceptions of the Quality of Nursing Care Scale (OPPQNCS)

Purpose: To develop and test the Oncology Patients' Perceptions of the Quality of Nursing Care Scale (OPPQNCS).

Format/Data Source: 112 initial items within 8 subscales were developed with 59 items achieving content validity from an expert panel review and 41 items comprising the long version. The 8 subscales included: (1) professional knowledge (8 items), (2) continuity (1 item), (3) attentiveness (10 items), (4) coordination (9 items), (5) partnership (8 items), (6) individualization (9 items), (7) rapport (3 items), and (8) caring (11 items). Response provided on 4 – 6 point Likert scales.

Date: Measure published in 2003.¹

Perspective: Patient/Family

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 36, 40
- **Communicate:**
 - *Between health care professional(s) and patient/family:* 5, 25, 40
 - Information transfer:
 - *Between health care professional(s) and patient/family:* 34
- **Facilitate transitions:**
 - Across settings: 38
- **Assess needs and goals:** 17, 26, 33, 35
- **Monitor, follow up, and respond to change:** 14
- **Support self-management goals:** 11, 34

Development and Testing: Content validity achieved through an expert panel review. Construct validity examined using exploratory factor analysis, and internal consistency reliability determined using Cronbach's alpha coefficient. All 41 items of the long version were analyzed using PCA and promax rotation, and 40 items met all criteria. Internal consistency reliability and convergent validity were assessed for each scale. Cronbach's alpha coefficients ranged from 0.82 – 0.97. Pearson product-moment correlation coefficients demonstrate strong, positive correlations as well.² Further testing information is available.¹

Link to Outcomes or Health System Characteristics: One study concludes that patients who receive greater patient-centered nursing interventions are far more likely to exhibit desired health outcomes, which contribute to quality of life.³

Logic Model/Conceptual Framework: The Quality Health Outcomes Model (QHOM) framed the development of several studies surrounding interventions and outcomes linked to the OPPQNCS.³

Country: United States

Past or Validated Applications*:

- **Patient Age:** Adults
- **Patient Condition:** Combined Chronic Conditions, Cancer/Oncology, General Population/Not Condition Specific
- **Setting:** Inpatient Facility, Not Setting Specific

*Based on the sources listed below and input from the measure developer.

Notes:

- All instrument items are located online.⁴
- This instrument contains 41 items; 13 were mapped.
- An OPPQNCS short version (18-items) is also available online.⁴

Sources:

1. Radwin LE, Alster K, Rubin KM. Development and testing of the oncology patients' perceptions of the quality of nursing care scale. *Oncol Nurs Forum* 2003;30(2):283-90.
2. Suhonen R, Schmidt LA, Radwin LE. Measuring individualized nursing care: Assessment of reliability and validity of three scales. *J Adv Nurs* 2007;59(1):77-85.
3. Radwin LE, Cabral HJ, Wilkes G. Relationships between patient-centered cancer nursing interventions and desired health outcomes in the context of the health care system. *Res Nurs Health* 2009;32:4-17.
4. The Oncology Patients' Perception of the Quality of Nursing Care Scale Web site. Available at: http://www.faculty.umb.edu/laurel_radwin/oppqncs.htm Accessed: 28 April 2011.

Measure #27. Care Coordination Services in Pediatric Practices

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			
<i>Interpersonal communication</i>			
<i>Information transfer</i>		□	
Facilitate transitions			
<i>Across settings</i>		□	
<i>As coordination needs change</i>			
Assess needs and goals		□	
Create a proactive plan of care		□	
Monitor, follow up, and respond to change			
Support self-management goals			
Link to community resources		□	
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination		□	
Health care home			
Care management		■	
Medication management			
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Care Coordination Services in Pediatric Practices

Purpose: To assess the frequency at which pediatricians implement care coordination services in the treatment of children with special health care needs.

Format/Data Source: 8-item, self-administered, mailed survey adapted from the 1998 Medical Home Best Practices Survey developed by the Institute for Child Health Policy. Care coordination services inquired about within the survey included: (1) integrating a child's medical care plans with the care plans developed by other providers or organizations, (2) discussing a family's potential needs for non-medical services, (3) scheduling extra time for an office visit when seeing a child with special needs, (4) contacting the school about a child's health and education needs as part of care coordination, (5) meeting with the hospital discharge planning team to assist in a child's transition to the community, and (6) scheduling time with the family to discuss the results of a visit to a specialist.

Date: Measure published in 2004.¹

Perspective: Health Care Professional(s)

Measure Item Mapping:

- **Communicate:**
 - Information transfer:
 - *Between health care professional(s) and patient/family:* 6
- **Facilitate transitions:**
 - Across settings: 5, 7
- **Assess needs and goals:** 3, 8
- **Create a proactive plan of care:** 4
- **Link to community resources:** 3, 8
- **Teamwork focused on coordination:** 2, 3
- **Care management:** 2-5, 7

Development and Testing: This survey, adapted from the 1998 Medical Home Best Practices Survey developed by the Institute for Child Health Policy, was pilot tested prior to use.¹

Link to Outcomes or Health System Characteristics: None described in the source identified.

Logic Model/Conceptual Framework: None described in the source identified.

Country: United States

Past or Validated Applications*:

- **Patient Age:** Children
- **Patient Condition:** General Population/Not Condition Specific
- **Setting:** Inpatient Facility, Primary Care Facility, Other Outpatient Specialty Care Facility

*Based on the source listed below and input from the measure developer.

Notes:

- Instrument items located in Table 1 of the source article.¹
- This instrument contains 8 items; 7 were mapped.

Source:

1. Gupta VB, O'Connor KG, Quezada-Gomez C. Care coordination services in pediatric practices. *Pediatrics* 2004;113(5):1517-21.

Measure #28. Collaboration and Satisfaction About Care Decisions (CSACD)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			
<i>Interpersonal communication</i>		□	
<i>Information transfer</i>			
Facilitate transitions			
<i>Across settings</i>			
<i>As coordination needs change</i>			
Assess needs and goals			
Create a proactive plan of care			
Monitor, follow up, and respond to change			
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination		■	
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Collaboration and Satisfaction About Care Decisions (CSACD)

Purpose: To validate an instrument developed from an earlier Decision About Transfer (DAT) instrument that measures collaboration and satisfaction about decisionmaking in patient care.

Format/Data Source: 9-item questionnaire administered to health care professionals (physicians and nurses) while they actively provide care. Using a 7-point Likert scale the instrument addresses the degree of collaboration between physicians and nurses during the decisionmaking process.

Date: Measure published in 1994.¹

Perspective: Health Care Professional(s)

Measure Item Mapping:

- **Communicate:**
 - Interpersonal communication:
 - *Within teams of health care professionals:* 2
- **Teamwork focused on coordination:** 1-7

Development and Testing: The previously-constructed Decision About Transfer (DAT) instrument conferred criterion-related validity, but reliability could not be calculated for a single question, sparking development of the Collaboration and Satisfaction About Care Decisions (CSACD). The CSACD was developed to contain 7 questions addressing collaboration, 6 critical questions and 1 global. Content validity for collaboration questions of this instrument was supported by a prior literature review,² nurse and physician experts, and potential subjects. After expert review, the instrument was pilot tested via mailed surveys with focus on transfer decisions. Criterion-related validity and construct validity were supported. Internal consistency of the 6 critical-attribute collaboration items was supported with a Cronbach's alpha coefficient of 0.93.¹

Link to Outcomes or Health System Characteristics: Questionnaire responses correlate to patient outcomes concerning length of stay, mortality and morbidity as well as provider outcomes regarding job satisfaction and retention of ICU nurses.¹

Logic Model/Conceptual Framework: A previously-developed conceptual of collaboration.²

Country: United States

Past or Validated Applications*:

- **Patient Age:** Not Applicable
- **Patient Condition:** Not Applicable
- **Setting:** Inpatient Facility

*Based on the sources listed below and input from the measure developer.

Notes:

- For simplification purposes, in order to properly reference specific items within this profile, all instrument items found in Table 1 of the source article were consecutively numbered.¹
- This instrument contains 9 items; 7 were mapped.
- The CSACD was developed to study ICU transfer decisions and outcomes in an ICU, but it could be used in non-ICU settings or to refer to other patient care decisions as well.¹

Sources:

1. Baggs JG. Development of an instrument to measure collaboration and satisfaction about care decisions. *J Adv Nurs* 1994;20: 176-82.
2. Thomas K. Conflict and conflict management. In: MD Dunnette, ed. *Handbook of industrial and organizational psychology*. Chicago: Rand McNally College Publishing Company; 1976. p. 889-935.
3. Baggs JG, Norton SA, Schmitt M, et al. Intensive care unit cultures and end-of-life decision making. *J Crit Care* 2007; 22:159-168.
4. Baggs JG, Schmitt MH, Mushlin AI, et al. The association between nurse-physician collaboration and patient outcomes in three intensive care units. *Crit Care Med* 1999; 27: 1992-8.
5. Dougherty MB, Larson E. A review of instruments measuring nurse-physician collaboration. *J Nurs Adm* 2005;35(5):244-53.

Measure #29. Follow-Up Care Delivery

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate	■		
<i>Interpersonal communication</i>			
<i>Information transfer</i>	□		
Facilitate transitions			
<i>Across settings</i>			
<i>As coordination needs change</i>			
Assess needs and goals			
Create a proactive plan of care			
Monitor, follow up, and respond to change	■		
Support self-management goals	□		
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination	□		
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Follow-Up Care Delivery

Purpose: To assess follow up care delivery for cancer patients in association with physician specialty.

Format/Data Source: A 16-item, cross-sectional survey covering 4 domains: (1) physician communication, (2) care coordination, (3) nursing care, and (4) interactions with office staff.

Date: Measure published in 2009.¹

Perspective: Patient/Family

Measure Item Mapping:

- **Communicate:**
 - *Between health care professional(s) and patient/family:* 1, 2, 4-6, 10
 - Information transfer:
 - *Between health care professional(s) and patient/family:* 9
 - *Across health care teams or settings:* 11
- **Monitor, follow up, and respond to change:** 1-16
- **Support self-management goals:** 4, 9
- **Teamwork focused on coordination:** 12

Development and Testing: The survey was predominantly a compilation of items from previously validated instruments regarding patient experiences with care. All items underwent cognitive and pilot testing prior to implementation. Bivariate associations, chi-squared tests, and multivariable logistic regression models were performed to test associations of specialty with care coordination, nursing care, quality of care, and more.¹

Link to Outcomes or Health System Characteristics: None described in the source identified.

Logic Model/Conceptual Framework: None described in the source identified.

Country: United States

Past or Validated Applications*:

- **Patient Age:** Adults, Older Adults
- **Patient Condition:** Combined Chronic Conditions, Cancer/Oncology
- **Setting:** Primary Care Facility, Other Outpatient Specialty Care Facility

*Based on the source listed below.

Notes:

- For simplification purposes, in order to properly reference specific items within this profile, all instrument items found in Appendix 1 of the source article were consecutively numbered.¹
- This instrument contains 16 items; all 16 were mapped.

Source:

1. Haggstrom DA, Arora NK, Helft P, et al. Follow-up care delivery among colorectal cancer survivors most often seen by primary and subspecialty care physicians. *J Gen Int Med* 2009;24(2):472-79.

Measure #30. Family Satisfaction in the Intensive Care Unit (FS-ICU 24)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate	■		
<i>Interpersonal communication</i>			
<i>Information transfer</i>	□		
Facilitate transitions			
<i>Across settings</i>			
<i>As coordination needs change</i>			
Assess needs and goals	■		
Create a proactive plan of care			
Monitor, follow up, and respond to change			
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination	□		
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Family Satisfaction in the Intensive Care Unit (FS-ICU 24)

Purpose: To discern areas for improvement from evaluation of family satisfaction in intensive care units.

Format/Data Source: The FS-ICU 24 questionnaire was administered upon explanatory conversation and consent to participate. Including demographics, 33 items spanned 3 domains: (1) overall satisfaction, (2) satisfaction with care, and (3) information/decisionmaking. Questions were answered via 5-point Likert scale and converted to numerical values on a scale of 0-100. Summary measures (range 0-100) were calculated for FS-ICU_{total} summary score (higher scores imply greater satisfaction) and on 2 subscales: FS-ICU_{care} and FS-ICU_{dm} for information/decisionmaking.

Date: Measure published in 2009.¹

Perspective: Patient/Family

Measure Item Mapping:

- **Communicate:**
 - *Between health care professional(s) and patient/family:* 16, 21-25
 - Information transfer:
 - *Between health care professional(s) and patient/family:* 26
- **Assess needs and goals:** 11, 12, 20
- **Teamwork focused on coordination:** 13

Development and Testing: An initial version of the questionnaire was tested in ICUs in Canada and was shown to be reliable (correlation coefficient = 0.85) and valid (both content and construct validity). It was able to discriminate between good and poor ratings of ICU quality.^{2,3}

Link to Outcomes or Health System Characteristics: Little evidence is available addressing links between family satisfaction with quality of critical care for their loved ones and family outcomes, such as burden and stress.⁴

Logic Model/Conceptual Framework: Improved family outcome is based on a conceptual framework presented for palliative care.⁴

Country: German-speaking Switzerland and Canada

Past or Validated Applications*:

- **Patient Age:** Children
- **Patient Condition:** General Population/Not Condition Specific
- **Setting:** Inpatient Facility

*Based on the sources listed below and input from the measure developer.

Notes:

- For simplification purposes, in order to properly reference specific items within this profile, all instrument items found online were consecutively numbered.⁵ The last 3 items were free response and were not mapped.
- This instrument contains 24 items; 11 were mapped.
- For the most updated information, please refer to the Web site.⁵
- An alternate version, the original FS-ICU 34, is available online in Portuguese, French, Chinese, English, German, Hebrew, Spanish, and Swiss French. Further developmental information is available.³
- The FS-ICU 24 is also available online in French, English, German, Greek, Portuguese, Spanish, Swedish, and Swiss French.³ Modifications of both forms are provided online for step-down units as well as a chronic respiratory ward.³

Sources:

1. Stricker KH, Kimberger O, Schmidlin K, et al. Family satisfaction in the intensive care unit: What makes the difference? *Int Care Med* 2009;35:2051-59
2. Kryworuchko J, Heyland DK. Using family satisfaction data to improve the processes of care in ICU. *Int Care Med* 2009;35:2015-7.
3. Heyland DK, Tranmer JE. Measuring family satisfaction with care in the intensive care unit: The development of a questionnaire and preliminary results. *J Crit Care* 2001;16(4):142-9.
4. Rothen HU, Stricker KH, Heyland DK. Family satisfaction with critical care: Measurements and messages. *Curr Opin Crit Care* 2010;16:1-9.
5. CARENET. Canadian Researchers at the End of Life Network. Family Satisfaction Survey Web site. Available at: <http://www.thecarenet.ca/familysatisfaction>. Accessed: 16 September 2010.
6. Stricker KH, Niemann S, Bugnon S, et al. Family Satisfaction in the Intensive Care Unit: Cross-cultural adaptation of a questionnaire. *J Crit Care* 2007; 22:204-11.
7. Wall RJ, Engelberg RA, Downey L, et al. Refinement, scoring, and validation of the Family Satisfaction in the Intensive Care Unit (FS-ICU) survey. *Crit Care Med* 2007;35(1):271-79.

Measure #31. Korean Primary Care Assessment Tool (KPCAT)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate	□		
<i>Interpersonal communication</i>			
<i>Information transfer</i>	■		
Facilitate transitions			
<i>Across settings</i>	□		
<i>As coordination needs change</i>			
Assess needs and goals	□		
Create a proactive plan of care			
Monitor, follow up, and respond to change	□		
Support self-management goals	□		
Link to community resources	□		
Align resources with patient and population needs	□		
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Korean Primary Care Assessment Tool (KPCAT)

Purpose: To develop and measure performance in Korean primary care practices.

Format/Data Source: 26-item instrument consisting of 4 multi-item scales and 1 composite scale with 21 items designed to measure performance within Korean primary care practices based upon 4 domains: (1) comprehensiveness, (2) coordination function, (3) personalized care, and (4) family/community orientation. Responses provided on a 5-point Likert scale.

Date: Measure published in 2009.¹

Perspective: Patient/Family

Measure Item Mapping:

- **Communicate:**
 - *Between health care professional(s) and patient/family:* 15, 17
 - Information transfer:
 - *Between health care professional(s) and patient/family:* 18, 21
 - *Across health care teams or settings:* 16
- **Facilitate transitions:**
 - Across settings: 15
- **Assess needs and goals:** 6, 21
- **Monitor, follow up, and respond to change:** 16
- **Support self-management goals:** 7, 9
- **Link to community resources:** 25
- **Align resources with patient and population needs:** 13

Development and Testing: The Korean Primary Care Assessment Tool (KPCAT) was pilot tested regarding content validity on 3 distinct groups of skilled experts in primary care. Three domains (comprehensiveness excluded) demonstrated sufficiently high reliability alpha coefficients. Each item-scale correlation surpassed required minimum values. Further validation was demonstrated in a recent study of 9 South Korean primary care clinics, forthcoming in the International Journal for Quality in Health Care (J.H. Lee, personal communication, September 12, 2010).

Link to Outcomes or Health System Characteristics: None described in source identified.

Logic Model/Conceptual Framework: This is an adaptation of the original PCAT measures, which were based on a framework described by Starfield, 1992. For further information on the framework and development of the PCAT, please see Measure #17.

Country: Korea

Past or Validated Applications*:

- **Patient Age:** Not Age Specific
- **Patient Condition:** General Population/Not Condition Specific
- **Setting:** Primary Care Facility

*Based on the source listed below and input from the measure developer.

Notes:

- The original measure did not have individual items numbered. In order to properly reference specific items within this profile, all instrument items found in Table 2 of the source article were consecutively numbered.¹
- This instrument contains 26 items; 10 were mapped.

Source:

1. Lee JH, Choi YJ, Sung NJ, et al. Development of the Korean primary care assessment tool: Measuring user experience: Tests of data quality and measurement performance. *Int J Quality Health Care* 2009;21(2):103-11.

Measure #32. Primary Care Multimorbidity Hassles for Veterans With Chronic Illnesses

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility	□		
Communicate	■		
<i>Interpersonal communication</i>			
<i>Information transfer</i>	■		
Facilitate transitions			
<i>Across settings</i>	□		
<i>As coordination needs change</i>			
Assess needs and goals	□		
Create a proactive plan of care			
Monitor, follow up, and respond to change	□		
Support self-management goals	□		
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management	■		
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Primary Care Multimorbidity Hassles for Veterans With Chronic Illnesses

Purpose: To evaluate primary care physicians as well as the health care system for veterans with chronic illnesses.

Format/Data Source: 16-item questionnaire that addresses 4 main attributes of primary care: (1) accumulated knowledge of the patient by the clinician, (2) coordination of care, (3) communication, and (4) preference for first contact with their primary care clinician. Responses were provided on a 4-point Likert scale. The items address health care hassles, defined as, “‘troubles’ or ‘bothers’ that patients experience during their encounters with the health care system.”¹

Date: Measure published in 2005.¹

Perspective: Patient/Family

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 13
- **Communicate:**
 - *Within teams of health care professionals:* 15
 - *Across health care teams or settings:* 9, 10
 - Information transfer:
 - *Between health care professional(s) and patient/family:* 1-3, 5, 7, 11, 13
- **Facilitate transitions:**
 - Across settings: 7
- **Assess needs and goals:** 2, 3
- **Monitor, follow up, and respond to change:** 13
- **Support self-management goals:** 5, 13
- **Medication management:** 3-6

Development and Testing: 16-item survey created through Dillman’s Total Design Methodology. Original 26-item survey was pilot tested; items failing to improve item validity were removed. Several questions were added after a focus group session. Good internal consistency demonstrated (Cronbach's alpha coefficient of 0.94), and construct validity was determined with a principal component factor analysis (PCA) with a promax rotation. The previously validated Components of Primary Care Instrument (CPCI) was also included within the survey. Additional information was collected on demographic characteristics.¹

Link to Outcomes or Health System Characteristics: None described in the source identified.

Logic Model/Conceptual Framework: None described in the source identified.

Country: United States

Past or Validated Applications*:

- **Patient Age:** Adults
- **Patient Condition:** Combined Chronic Conditions, General Chronic Conditions, Multiple Chronic Conditions, Mental Illness & Substance Use Disorders
- **Setting:** Primary Care Facility

*Based on the source listed below and input from the measure developer.

Notes:

- The original measure did not have individual items numbered. In order to properly reference specific items within this profile, all instrument items found in Table 3 of the source article were consecutively numbered.¹
- This instrument contains 16 items; 12 were mapped.
- Further data analysis on a recent study in over 4,000 Veterans Administration primary care patients is forthcoming (M.L. Parchman, personal communication, September 10, 2010).

Source:

1. Parchman ML, Hitchcock, Noël P, et al. Primary care attributes, health care system hassles, and chronic illness. *Med Care* 2005;43(11):1123-29.

Measure #33. Primary Care Satisfaction Survey for Women (PCSSW)

CARE COORDINATION MEASURES MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate	□		
<i>Interpersonal communication</i>	■		
<i>Information transfer</i>	■		
Facilitate transitions			
<i>Across settings</i>			
<i>As coordination needs change</i>			
Assess needs and goals	□		
Create a proactive plan of care			
Monitor, follow up, and respond to change	□		
Support self-management goals	□		
Link to community resources	□		
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Primary Care Satisfaction Survey for Women (PCSSW)

Purpose: To assess patient (female) satisfaction with primary care.

Format/Data Source: 29-item, self-administered or telephone-conducted survey, both before and after a primary care visit. Two categories were established: (1) items pertaining to a specific visit and (2) items pertaining to overall health care at the site during the past 12 months. Responses were based on a 5-point Likert scale (excellent-to-poor range) and summed for a total score.

Date: Measure published in 2004.¹

Perspective: Patient/Family

Measure Item Mapping:

- **Communicate:**
 - *Between health care professional(s) and patient/family:* 11i, 11k
 - Interpersonal communication:
 - *Between health care professional(s) and patient/family:* 11h, 11j, 11o
 - Information transfer:
 - *Between health care professional(s) and patient/family:* 12h, 12i
 - *Participants not specified:* 11m
- **Assess needs and goals:** 11o, 12d
- **Monitor, follow up, and respond to change:** 11e
- **Support self-management goals:** 12a, 12c
- **Link to community resources:** 12e

Development and Testing: A focus group determined women's expectations and preferences in primary care, which assisted in the formation of survey items. Additional cognitive testing led to item revision. Each scale within the PCCSW had high internal consistency reliability with Cronbach's alpha coefficient of 0.96. Convergent validity was supported by correlations with the MOS Visit Satisfaction Scale and CAHPS. Discriminant validity and predictive validity were demonstrated through regression analysis.¹

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: None described in the sources identified.

Country: United States

Past or Validated Applications*:

- **Patient Age:** Adults
- **Patient Condition:** General Population/Not Condition Specific
- **Setting:** Primary Care Facility

*Based on the sources listed below and input from the measure developer.

Notes:

- All instrument items are located in Table 2 of the source article.¹
- This instrument contains 29 items; 13 were mapped.

Sources:

1. Scholle SH, Weisman CS, Anderson RT, et al. The development and validation of the Primary Care Satisfaction Survey for Women. *Womens Health Issues* 2004;14:35-50.
2. Scholle SH, Weisman CS, Anderson R, et al. Women's satisfaction with primary care: A new measurement effort from the PHS National Centers of Excellence in Women's Health. *Womens Health Issues* 2000;10(1):1-9.
3. Anderson, RT, Weisman CS, Camacho F, et al. Women's satisfaction with their on-going primary health care services: A consideration of visit-specific and period assessments. *Health Serv Res* 2007;42(2):663-81.

Measure #34. Personal Health Records (PHR)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			□
<i>Interpersonal communication</i>			
<i>Information transfer</i>			□
Facilitate transitions			
<i>Across settings</i>			
<i>As coordination needs change</i>			
Assess needs and goals			
Create a proactive plan of care			
Monitor, follow up, and respond to change			
Support self-management goals			□
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			■

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Personal Health Records (PHR)

Purpose: To evaluate and discern areas for improvement in the patient-centeredness of personal health records (PHR).

Format/Data Source: The framework for evaluation (based on patient-centeredness) includes: (1) respect for patient values, preferences, and expressed needs; (2) information and education; (3) access to care; (4) emotional support to relieve fear and anxiety; (5) involvement of family and friends; (6) continuity and secure transition between health care providers; (7) physical comfort; and (8) coordination of care. For the purpose of this measure, personal health records (PHR) are defined as, “software applications that patients can use to communicate with their clinician, to enter their own health data, and to access information from their medical record and other sources.”¹

Date: Measure published in 2009.¹

Perspective: System Representative(s)

Measure Item Mapping:

- **Communicate:**
 - *Between health care professional(s) and patient/family:* 9, 10
 - Information transfer:
 - *Participants not specified:* 5
- **Support self-management goals:** 1, 5
- **Health IT-enabled coordination:** 1-10

Development and Testing: Literature reviews and personal communications initially identified areas to address within PHR. In-depth, semi-structured interviews were conducted in a variety of PHR settings to develop the 10-item instrument discussing personal health records. Post-interview respondent validation demonstrated sufficient accuracy. When evidence was available for patient preferences, it was compared to existing PHR policies to propose a best practice model.¹

Link to Outcomes or Health System Characteristics: None described in the source identified.

Logic Model/Conceptual Framework: Patient-centeredness was assessed against a framework of care defined within Format/Data Source. A patient-centered policy model was developed with the ideas of patient empowerment and full control of the personal health record.¹

Country: United States

Past or Validated Applications*:

- **Patient Age:** Not Applicable
- **Patient Condition:** Not Applicable
- **Setting:** Not Setting Specific

*Based on the source listed below and input from the measure developer.

Notes:

- All instrument items are located in Table 1 of the source article.¹
- This instrument contains 10 items; all 10 were mapped.

Source:

1. Reti SR, Feldman HJ, Ross SE, et al. Improving personal health records for patient-centered care. *JAMIA* 2010;17:192-5.

Measure #35. Picker Patient Experience (PPE-15)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			
<i>Interpersonal communication</i>	■		
<i>Information transfer</i>	□		
Facilitate transitions			
<i>Across settings</i>			
<i>As coordination needs change</i>			
Assess needs and goals	□		
Create a proactive plan of care			
Monitor, follow up, and respond to change			
Support self-management goals	■		
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination	□		
Health care home			
Care management			
Medication management	□		
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Picker Patient Experience (PPE-15)

Purpose: To develop and test an instrument to measure inpatient care experiences from the patient perspective.

Format/Data Source: A 15-item survey implemented in 5 countries. Items are grouped into 8 dimensions on the basis of face validity: (1) information and education, (2) coordination of care, (3) physical comfort, (4) emotional support, (5) respect for patient preferences, (6) involvement of family and friends, (7) continuity and transition, and (8) overall impression.

Date: Measure published in 2002.¹

Perspective: Patient/Family

Measure Item Mapping:

- **Communicate:**
 - Interpersonal communication:
 - *Between health care professional(s) and patient/family:* 1-4, 8, 11
 - Information transfer:
 - *Between health care professional(s) and patient/family:* 12, 13
- **Assess needs and goals:** 4, 8
- **Support self-management goals:** 6, 9, 14, 15
- **Teamwork focused on coordination:** 3
- **Medication management:** 13, 14

Development and Testing: Items were developed from the Picker adult inpatient questionnaire, and were required to address 4 criteria: (1) patient applicability, (2) high correlation of items, (3) high internal consistency reliability levels, and (4) total item correlations exceeding the recommended 0.3 value. Development included expert consultation, a systematic literature review, organization of patient focus groups, and in-depth interviews to confirm salience in health care encounters. Evidence indicates that the Picker Patient Experience Questionnaire (PPE-15) has high levels of internal consistency reliability. Cronbach's alpha coefficient exceeded the recommended value of 0.7, and Spearman correlations (item-total correlations) were acceptable, except for 1 item, which fell below accepted values in Sweden and the United States.¹

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: None described in the sources identified.

Country: Germany, Sweden, Switzerland, United Kingdom and United States

Past or Validated Applications*:

- **Patient Age:** Adults
- **Patient Condition:** General Population/Not Condition Specific

- **Setting:** Inpatient Facility

*Based on the sources listed below.

Notes:

- All instrument items are located in the Appendix of the source article.¹
- This instrument contains 15 items; 12 were mapped.

Sources:

1. Jenkinson C, Coulter A, Bruster S. The Picker Patient Experience Questionnaire: Development and validation using data from in-patient surveys in five countries. *Int J Qual Health Care* 2002;14(5):353-58.
2. Cleary PD, Edgman-Levitan S, Walker JD, et al. Using patient reports to improve medical care: A preliminary report from 10 hospitals. *Qual Manage Health Care* 1993;2(1):31-8.

Measure #36. Physician Office Quality of Care Monitor (QCM)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			
<i>Interpersonal communication</i>	□		
<i>Information transfer</i>	■		
Facilitate transitions			
<i>Across settings</i>			
<i>As coordination needs change</i>			
Assess needs and goals			
Create a proactive plan of care			
Monitor, follow up, and respond to change	□		
Support self-management goals	□		
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination	□		
Health care home			
Care management			
Medication management	□		
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Physician Office Quality of Care Monitor (QCM)

Purpose: To accurately measure patient perceptions of care quality in the physician's office.

Format/Data Source: 56-item, mailed survey addressing 4 main dimensions of patient satisfaction: (1) evaluation of medical care in geographical areas, (2) beliefs about physician behavior, (3) reasons for postponing physician visits, and (4) attitudes toward the physician and medical care. The QCM identified 7 distinct scales of physician office care, which include: (1) Physician Care, (2) Nursing Care, (3) Front Office Services, (4) Accessibility, (5) Billing, (6) Testing Services, and (7) Facility Characteristics.

Date: Measure published in 1996.¹

Perspective: Patient/Family

Measure Item Mapping:

- **Communicate:**
 - Interpersonal communication:
 - *Between health care professional(s) and patient/family:* 36
 - Information transfer:
 - *Between health care professional(s) and patient/family:* 18, 21, 35
- **Monitor, follow up, and respond to change:** 30, 32
- **Support self-management goals:** 31
- **Teamwork focused on coordination:** 33
- **Medication management:** 30, 43

Development and Testing: After reviewing the literature and published questionnaires, items included in the Physician Office Quality of Care Monitor (QCM) were refined based on patient interviews as well as pilot testing via post-visit mailed surveys. The QCM demonstrated strong construct validity through a Promax oblique rotation, and factor analysis yielded sufficient predictive validity. Internal consistency of the scales supported reliability through Cronbach's alpha coefficients, which exceeded respective correlations and met the guidelines.¹

Link to Outcomes or Health System Characteristics: None described in the source identified.

Logic Model/Conceptual Framework: None described in the source identified.

Country: United States

Past or Validated Applications*:

- **Patient Age:** Not Age Specific
- **Patient Condition:** General Population/Not Condition Specific
- **Setting:** Primary Care Facility, Other Outpatient Specialty Care Facility

*Based on the source listed below.

Notes:

- For simplification purposes, in order to properly reference specific items within this profile, all instrument items found in the Appendix of the source article were consecutively numbered.¹
- This instrument contains 53 forced-choice items; 9 were mapped.

Source:

1. Seibert JH, Strohmeyer JM, Carey RG. Evaluating the physician office visit: In pursuit of a valid and reliable measure of quality improvement efforts. *J Ambul Care Manage* 1996;19(1):17-37.

Measure #37. Patient Perceptions of Care (PPOC)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility	■		
Communicate	■		
<i>Interpersonal communication</i>	■		
<i>Information transfer</i>	■		
Facilitate transitions			
<i>Across settings</i>	□		
<i>As coordination needs change</i>			
Assess needs and goals	■		
Create a proactive plan of care	□		
Monitor, follow up, and respond to change	■		
Support self-management goals	□		
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management	□		
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Patient Perceptions of Care (PPOC)

Purpose: To measure and determine Veterans Administration (VA) patients' perceptions of care in community-based outpatient clinics (CBOCs).

Format/Data Source: Mailed, self-administered, 40-item, cross-sectional survey addressing 8 multi-item scales: (1) access and timeliness of care, (2) patient education/information, (3) patient preferences, (4) emotional support, (5) coordination of care (overall), (6) coordination of care (visit), (7) courtesy, and (8) specialty provider access. The Picker-Commonwealth approach was used to measure of patient perceptions of care.

Date: Measure published in 2002.¹

Perspective: Patient/Family

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 13, 14, 28-31, 34
- **Communicate:**
 - *Between health care professional(s) and patient/family:* 8, 9, 15, 16, 20, 30, 31
 - Interpersonal communication:
 - *Between health care professional(s) and patient/family:* 18, 19, 27
 - Information transfer:
 - *Between health care professional(s) and patient/family:* 10-12, 14, 30, 31, 39, 40
 - *Across health care teams or settings:* 26
 - *Participants not specified:* 24, 25
- **Facilitate transitions:**
 - Across settings: 33
- **Assess needs and goals:** 14, 15, 17,
- **Create a proactive plan of care:** 28
- **Monitor, follow up, and respond to change:** 26, 32, 33
- **Support self-management goals:** 17, 28
- **Medication management:** 11, 12

Development and Testing: This measure is based on components of the 1998 VA National Outpatient Customer Satisfaction Survey, conducted by the VA National Performance Data Resource Center.¹ Similar items have been used in the Veterans Satisfaction Survey.²

Link to Outcomes or Health System Characteristics: Delivery of care through VA Community-based Outpatient Clinics (CBOCs) was associated with small, but significant improvements in the number of reported problems with care, as measured through the PPOC, over delivery at VA medical centers, even when controlling for patient health status.¹ Two domains of patient-centered care measured in the PPOC—communication between patients and providers and continuity of care—were also associated with better compliance rates for 12 recommended preventive care services at VA facilities.²

Logic Model/Conceptual Framework: The measures of patient perceptions of care included in the PPOC are based on the Picker-Commonwealth approach.¹

Country: United States

Past or Validated Applications*:

- **Patient Age:** Adults
- **Patient Condition:** General Population/Not Condition Specific
- **Setting:** Primary Care Facility, Other Outpatient Specialty Care Facility, Behavioral Health Care Facility

*Based on the sources listed below.

Notes:

- For simplification purposes, in order to properly reference specific items within this profile, all instrument items found in Appendix A of the source article were consecutively numbered.¹
- This instrument contains 40 items; 26 were mapped.
- Both the 1998 VA National Outpatient Customer Satisfaction Survey, conducted by the VA National Performance Data Resource Center, and the 1999 Veterans Satisfaction Survey (VSS) contained nearly identical items addressing patient-centered care. Only the portions of the VA surveys that address patient-centered care, and which were reported in the sources listed in this profile, are described here as the Patient Perceptions of Care Survey.^{1,2}

Sources:

1. Borowsky SJ, Nelson DB, Fortney JC, et al. VA Community-Based Outpatient Clinics: Performance measures based on patient perceptions of care. *Med Care* 2002;40(7):578-86.
2. Flach SD, McCoy KD, Vaughn TE, et al. Does patient-centered care improve provision of preventive services? *J Gen Int Med* 2004;19:1019-26.

Measure #38a. PREPARED Survey – Patient Version

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate	□		
<i>Interpersonal communication</i>			
<i>Information transfer</i>	■		
Facilitate transitions			
<i>Across settings</i>	■		
<i>As coordination needs change</i>			
Assess needs and goals	□		
Create a proactive plan of care	□		
Monitor, follow up, and respond to change			
Support self-management goals	■		
Link to community resources	■		
Align resources with patient and population needs	■		
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management	■		
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

PREPARED Survey – Patient Version

Purpose: To gather information on the quality of process and outcomes of discharge planning activities undertaken in the acute hospital setting from the patient perspective.

Format/Data Source: 49-item questionnaire covering 4 key domains: (1) information exchange (community services and equipment), (2) medication management, (3) preparation for coping after discharge, and (4) control of discharge circumstances.

Date: Measure released in 1998.¹

Perspective: Patient/Family

Measure Item Mapping:

- **Communicate:**
 - *Between health care professional(s) and patient/family:* 2.4
 - Information transfer:
 - *Between health care professional(s) and patient/family:* 2.1, 2.2, 2.5-2.7, 3.3
- **Facilitate transitions:**
 - Across settings: 3.1-3.3
- **Assess needs and goals:** 5.5
- **Create a proactive plan of care:** 2.3
- **Support self-management goals:** 2.7, 3.2, 3.3, 5.2, 6.2
- **Link to community resources:** 2.6, 3.1, 5.5
- **Align resources with patient and population needs:** 2.6, 3.1, 5.5
- **Medication management:** 2.1-2.3, 2.5

Development and Testing: Initial instrument developed based on extensive interviews with hospital staff, patients, and patient carers. The draft instrument was then reviewed by an expert panel of health professionals, a questionnaire layout designer, discharge planning staff, a health economist, and a qualitative researcher to further test for face and content validity. The instrument was then pilot tested, and factor analysis was conducted on patient and carer responses to the process questions. The validity of the instrument was established by comparing responses with interview data and by correlating the process and outcome domains. Divergent validity of the instrument was established by comparing responses to MOS SF-36, a measure of physical and mental health scores.²

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: None described in the sources identified.

Country: Australia

Past or Validated Applications*:

- **Patient Age:** Adults, Older Adults

- **Patient Condition:** General Population/Not Condition Specific
- **Setting:** Inpatient Facility, Primary Care Facility

*Based on the sources listed below and input from measure developer.

Notes:

- The PREPARED instrument is available in 6 versions: (1) Australian Patient Version, (2) Australian Carer Version, (3) Australian Residential Care Staff Version, (4) Australian Community Service Provider Version, (5) Australian Medical Practitioner Version, and (6) American Medical Practitioner Version. All of the Australian instruments can be found online.¹
- This instrument contains 49 items; 13 were mapped.

Sources:

1. International Centre for Allied Health Evidence (iCAHE) Web site. Available at: <http://www.unisa.edu.au/cahe/Resources/DCP/Information.asp>. Accessed: 21 September 2010
2. Grimmer K, Moss J. The development, validity and application of a new instrument to assess the quality of discharge planning activities from the community perspective. *Int J Qual Health Care* 2001;13(2):109-16.
3. Grimmer KA, Moss JR, Gill TK. Discharge planning quality from the carer perspective. *Qual Life Res* 2000;9:1005-13.

Measure #38b. PREPARED Survey – Carer Version

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			
<i>Interpersonal communication</i>	□		
<i>Information transfer</i>	■		
Facilitate transitions			
<i>Across settings</i>	■		
<i>As coordination needs change</i>			
Assess needs and goals	□		
Create a proactive plan of care			
Monitor, follow up, and respond to change			
Support self-management goals	□		
Link to community resources	□		
Align resources with patient and population needs	□		
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management	□		
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

PREPARED Survey – Carer Version

Purpose: To gather information on the quality of process and outcomes of discharge planning activities undertaken in the acute hospital setting from the carer perspective.

Format/Data Source: 43-item questionnaire covering 4 key domains: (1) information exchange (community services and equipment), (2) medication management, (3) preparation for coping after discharge, and (4) control of discharge circumstances.

Date: Measure released in 1998.¹

Perspective: Patient/Family

Measure Item Mapping:

- **Communicate:**
 - Interpersonal communication:
 - *Between health care professional(s) and patient/family:* 3.3
 - Information transfer:
 - *Between health care professional(s) and patient/family:* 2.1-2.5, 3.4
- **Facilitate transitions:**
 - Across settings: 3.1-3.3
- **Assess needs and goals:** 5.5
- **Support self-management goals:** 2.5, 3.2
- **Link to community resources:** 2.4, 3.1
- **Align resources with patient and population needs:** 2.4, 3.1
- **Medication management:** 2.1, 2.2

Development and Testing: Initial instrument developed based on extensive interviews with hospital staff, patients, and patient carers. The draft instrument was then reviewed by an expert panel of health professionals, a questionnaire layout designer, discharge planning staff, a health economist, and a qualitative researcher to further test for face and content validity. The instrument was then pilot tested, and factor analysis was conducted on patient and carer responses to the process questions. The validity of the instrument was established by comparing responses with interview data and by correlating the process and outcome domains. Divergent validity of the instrument was established by comparing responses to MOS SF-36, a measure of physical and mental health scores.²

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: None described in the sources identified.

Country: Australia

Past or Validated Applications*:

- **Patient Age:** Adults, Older Adults

- **Patient Condition:** General Population/Not Condition Specific
- **Setting:** Inpatient Facility, Primary Care Facility

*Based on the sources listed below and input from the measure developer.

Notes:

- The PREPARED instrument is available in 6 versions: (1) Australian Patient Version, (2) Australian Carer Version, (3) Australian Residential Care Staff Version, (4) Australian Community Service Provider Version, (5) Australian Medical Practitioner Version, and (6) American Medical Practitioner Version. All of the Australian instruments can be found online.¹
- This instrument contains 43 items; 10 were mapped.

Sources:

1. International Centre for Allied Health Evidence (iCAHE) Web site. Available at: <http://www.unisa.edu.au/cahe/Resources/DCP/Information.asp>. Accessed: 21 September 2010.
2. Grimmer K, Moss J. The development, validity and application of a new instrument to assess the quality of discharge planning activities from the community perspective. *Int J Qual Health Care* 2001;13(2):109-16.
3. Grimmer KA, Moss JR, Gill TK. Discharge planning quality from the carer perspective. *Qual Life Res* 2000;9:1005-13.

Measure #38c. PREPARED Survey – Residential Care Staff Version

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility		□	
Communicate			
<i>Interpersonal communication</i>			
<i>Information transfer</i>		■	
Facilitate transitions			
<i>Across settings</i>		□	
<i>As coordination needs change</i>			
Assess needs and goals			
Create a proactive plan of care			
Monitor, follow up, and respond to change			
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management		□	
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

PREPARED Survey – Residential Care Staff Version

Purpose: To gather information on the quality of process and outcomes of discharge planning activities undertaken in the acute hospital setting from the residential care staff perspective.

Format/Data Source: 14-item questionnaire.

Date: Measure released in 1998.¹

Perspective: Health Care Professional(s)

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 2
- **Communicate:**
 - Information transfer:
 - *Across health care teams or settings:* 1, 3, 4, 6
- **Facilitate transitions:**
 - Across settings: 7, 8
- **Medication management:** 4

Development and Testing: No testing described in sources identified. However, testing information is available for related measures.²

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: None described in the sources identified.

Country: Australia

Past or Validated Applications*:

- **Patient Age:** Adults, Older Adults
- **Patient Condition:** General Population/Not Condition Specific
- **Setting:** Inpatient Facility, Primary Care Facility, Long Term Care Facility, Not Setting Specific

*Based on the sources listed below and input from the measure developer.

Notes:

- The PREPARED instrument is available in 6 versions: (1) Australian Patient Version, (2) Australian Carer Version, (3) Australian Residential Care Staff Version, (4) Australian Community Service Provider Version, (5) Australian Medical Practitioner Version, and (6) American Medical Practitioner Version. All of the Australian instruments can be found online.¹
- This instrument contains 14 items; 7 were mapped.

Sources:

1. International Centre for Allied Health Evidence (iCAHE) Web site. Available at: <http://www.unisa.edu.au/cahe/Resources/DCP/Information.asp>. Accessed: 21 September 2010
2. Grimmer K, Moss J. The development, validity and application of a new instrument to assess the quality of discharge planning activities from the community perspective. *Int J Qual Health Care* 2001;13(2):109-16.

Measure #38d. PREPARED Survey – Community Service Provider Version

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility		□	
Communicate			
<i>Interpersonal communication</i>			
<i>Information transfer</i>		■	
Facilitate transitions			
<i>Across settings</i>		■	
<i>As coordination needs change</i>			
Assess needs and goals		□	
Create a proactive plan of care			
Monitor, follow up, and respond to change			
Support self-management goals		□	
Link to community resources			
Align resources with patient and population needs		□	
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

PREPARED Survey – Community Service Provider Version

Purpose: To gather information on the quality of process and outcomes of discharge planning activities undertaken in the acute hospital setting from the community service provider perspective.

Format/Data Source: 30-item questionnaire

Date: Measure released in 1998.¹

Perspective: Health Care Professional(s)

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 4a
- **Communicate:**
 - Information transfer:
 - *Between health care professional(s) and patient/family:* 4b
 - *Across health care teams or settings:* 1, 6, 7a, 8c, 10, 12a
- **Facilitate transitions:**
 - Across settings: 2, 5a, 5b, 9, 15
- **Assess needs and goals:** 2, 9
- **Support self-management goals:** 16a
- **Align resources with patient and population needs:** 7c, 8b

Development and Testing: No testing described in sources identified. However, testing information is available for related measures.²

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: None described in the sources identified.

Country: Australia

Past or Validated Applications*:

- **Patient Age:** Adults, Older Adults
- **Patient Condition:** General Population/Not Condition Specific
- **Setting:** Inpatient Facility, Primary Care Facility, Long Term Care Facility, Not Setting Specific

*Based on the sources listed below and input from the measure developer.

Notes:

- The PREPARED instrument is available in 6 versions: (1) Australian Patient Version, (2) Australian Carer Version, (3) Australian Residential Care Staff Version, (4) Australian Community Service Provider Version, (5) Australian Medical Practitioner Version, and

(6) American Medical Practitioner Version. All of the Australian instruments can be found online.¹

- This instrument contains 30 items; 16 were mapped.

Sources:

1. International Centre for Allied Health Evidence (iCAHE) Web site. Available at: <http://www.unisa.edu.au/cahe/Resources/DCP/Information.asp>. Accessed: 21 September 2010
2. Grimmer K, Moss J. The development, validity and application of a new instrument to assess the quality of discharge planning activities from the community perspective. *Int J Qual Health Care* 2001;13(2):109-16.

Measure #38e. PREPARED Survey – Medical Practitioner Version

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility		□	
Communicate		□	
<i>Interpersonal communication</i>			
<i>Information transfer</i>		■	
Facilitate transitions			
<i>Across settings</i>		□	
<i>As coordination needs change</i>			
Assess needs and goals		□	
Create a proactive plan of care		□	
Monitor, follow up, and respond to change			
Support self-management goals		□	
Link to community resources		□	
Align resources with patient and population needs		□	
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management		□	
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

PREPARED Survey – Medical Practitioner Version

Purpose: To gather information on the quality of process and outcomes of discharge planning activities undertaken in the acute hospital setting from the medical practitioner perspective.

Format/Data Source: 19-item questionnaire

Date: Measure released in 1998.¹

Perspective: Health Care Professional(s)

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 5
- **Communicate:**
 - *Across health care teams or settings:* 11
 - Information transfer:
 - *Across health care teams or settings:* 1-4, 6, 8-9
- **Facilitate transitions:**
 - Across settings: 7, 15
- **Assess needs and goals:** 7, 10
- **Create a proactive plan of care:** 15
- **Support self-management goals:** 15
- **Link to community resources:** 12
- **Align resources with patient and population needs:** 12
- **Medication management:** 11

Development and Testing: The measure was developed through a process that included a literature review, focus groups, and pilot surveys. A small group of general medical practitioners in Adelaide and Sydney were given the draft measure and asked to comment on layout, item wording, and question intent. Minor revisions were made based on the feedback received.²

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: None described in the sources identified.

Country: Australia

Past or Validated Applications*:

- **Patient Age:** Adults, Older Adults
- **Patient Condition:** General Population/Not Condition Specific
- **Setting:** Inpatient Facility, Primary Care Facility, Long Term Care Facility, Not Setting Specific

*Based on the sources listed below and input from the measure developer.

Notes:

- The PREPARED instrument is available in 6 versions: (1) Australian Patient Version, (2) Australian Carer Version, (3) Australian Residential Care Staff Version, (4) Australian Community Service Provider Version, (5) Australian Medical Practitioner Version, and (6) American Medical Practitioner Version. All of the Australian instruments can be found online.¹
- This instrument contains 19 items; 13 were mapped.

Sources:

1. International Centre for Allied Health Evidence (iCAHE) Web site. Available at: <http://www.unisa.edu.au/cahe/Resources/DCP/Information.asp>. Accessed: 21 September 2010
2. Graumlich JF, Grimmer-Somers K, Aldag JC. Discharge planning scale: Community physicians' perspective. *J Hosp Med* 2008;3(6):455-64.
3. Grimmer K, Moss J. The development, validity and application of a new instrument to assess the quality of discharge planning activities from the community perspective. *Int J Qual Health Care* 2001;13(2):109-16.

Measure #38f. PREPARED Survey – Modified Medical Practitioner Version

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate		□	
<i>Interpersonal communication</i>			
<i>Information transfer</i>		■	
Facilitate transitions			
<i>Across settings</i>		□	
<i>As coordination needs change</i>			
Assess needs and goals		□	
Create a proactive plan of care		□	
Monitor, follow up, and respond to change			
Support self-management goals		□	
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management		□	
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

PREPARED Survey – Modified Medical Practitioner Version

Purpose: To measure qualities of hospital discharge from the outpatient (primary care) physician perspective.

Format/Data Source: 8-item questionnaire mailed via US Mail to primary care physicians, covering 2 key domains: (1) timeliness of communication and (2) adequacy of discharge plan/transmission.

Date: Measure published in 2008.¹

Perspective: Health Care Professional(s)

Measure Item Mapping:

- **Communicate:**
 - *Across health care teams or settings:* 7
 - Information transfer:
 - *Across health care teams or settings:* 1-3, 5, 6
- **Facilitate transitions:**
 - Across settings: 4, 8
- **Assess needs and goals:** 4
- **Create a proactive plan of care:** 8
- **Support self-management goals:** 8
- **Medication management:** 6, 7

Development and Testing: Items were selected from the previously validated PREPARED Medical Practitioner survey.³ All items with nominal response categories that lacked graded or ordinal characteristics were excluded. Additionally, one item that had proven to have large proportions of missing responses because respondents checked “not applicable” in past studies was also excluded. Scale analysis was conducted on a total of 8 items after item reduction was completed. The 8-item scale proved to be internally consistent with a Cronbach’s alpha of 0.86. Principal component analysis identified 2 components (timeliness of communication and adequacy of discharge plan/transmission). Construct validity of the measure was also verified.¹

Link to Outcomes or Health System Characteristics: None described in the source identified.

Logic Model/Conceptual Framework: None described in the source identified.

Country: United States

Past or Validated Applications*:

- **Patient Age:** Adults
- **Patient Condition:** General Population/Not Condition Specific
- **Setting:** Inpatient Facility, Primary Care Facility

*Based on the sources listed below and input from the measure developer.

Notes:

- All instrument items are located in Table 2 of the source article.¹
- The instrument was adapted from the PREPARED medical practitioner version developed by Professor Grimmer-Somers.
- A patient version, adapted from the PREPARED patient version is also available² and was administered via telephone survey (J.F. Graumlich , personal communication, February 18, 2011)..
- This instrument contains 8 items; all 8 were mapped.

Source:

1. Graumlich JF, Grimmer-Somers K, Aldag JC. Discharge planning scale: Community physicians' perspective. *J Hosp Med* 2008; 3(6): 455-464.
2. Graumlich JF, Novotny NL, Aldag JC. Brief scale measuring patient preparedness for hospital discharge to home: psychometric properties. *J Hosp Med* 2008; 3(6):446-454. PMID: 19084894
3. Grimmer K, Moss J. The development, validity and application of a new instrument to assess the quality of discharge planning activities from the community perspective. *Int J Qual Health Care* 2001; 13(2):109-16.

Measure #39. Health Tracking Household Survey

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			
<i>Interpersonal communication</i>	□		
<i>Information transfer</i>	□		
Facilitate transitions			
<i>Across settings</i>			
<i>As coordination needs change</i>			
Assess needs and goals			
Create a proactive plan of care			
Monitor, follow up, and respond to change	□		
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination	□		
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Health Tracking Household Survey

Purpose: To assess whether continuity of care and referral source are associated with better coordination of care from the patient perspective.

Format/Data Source: 3-item telephone survey focusing on 3 major aspects of coordination: (1) whether the primary care physician is informed of care the patient received from an outside specialist, (2) whether the primary care physician discussed with the patient what happened at the most recent visit to the specialist, and (3) whether different doctors caring for a patient's chronic condition work well together to coordinate that care.

Date: Measure administered nationally in 2007.¹

Perspective: Patient/Family

Measure Item Mapping:

- **Communicate:**
 - Interpersonal communication:
 - *Between health care professional(s) and patient/family:* 2
 - Information transfer:
 - *Across health care teams or settings:* 1
- **Monitor, follow up, and respond to change:** 1,2
- **Teamwork focused on coordination:** 3

Development and Testing: Coordination measures were adapted from validated surveys and underwent cognitive interview testing to ensure that respondents understood and felt capable of answering the items.¹

Link to Outcomes or Health System Characteristics: Higher ratings of care coordination were associated with (1) continuity of visits with the same primary care physician and (2) primary care physician as the referral source.¹

Logic Model/Conceptual Framework: None described in the source identified.

Country: United States

Past or Validated Applications*:

- **Patient Age:** Adults
- **Patient Condition:** Combined Chronic Conditions, General Chronic Conditions, General Population/Not Condition Specific
- **Setting:** Primary Care Facility, Other Outpatient Specialty Care Facility

*Based on the sources listed below and input from the measure developer.

Notes:

- All instrument items are located in Figure 1 of the source article.¹
- This instrument contains 3 items; all 3 were mapped.

- One item was adapted from the PCAT, originally developed by Cassidy and Starfield (see Measure 17).
- This instrument was developed by The Center for Studying Health System Change (HSC). Information on the broader 2007 survey can be found online.²

Sources:

1. O'Malley AS, Cunningham PJ. Patient experiences with coordination of care: the benefit of continuity and primary care physician as referral source. *J Gen Int Med* 2008;24(2):170-77.
2. Health System Change (HSC) Web Site. Available at: <http://www.hschange.org/CONTENT/1091/>. Accessed: 20 September 2010.

Measure #40. Adapted Picker Institute Cancer Survey

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility	□		
Communicate			
<i>Interpersonal communication</i>	□		
<i>Information transfer</i>	■		
Facilitate transitions			
<i>Across settings</i>	■		
<i>As coordination needs change</i>			
Assess needs and goals	□		
Create a proactive plan of care	■		
Monitor, follow up, and respond to change	□		
Support self-management goals	□		
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination	□		
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Adapted Picker Institute Cancer Survey

Purpose: To assess patients' experiences with cancer care, health-related quality of life, comorbid illnesses, and sociodemographic characteristics.

Format/Data Source: 34-item telephone interview covering 7 different question domains: (1) coordination of care, (2) confidence in providers, (3) treatment information, (4) health information, (5) access to cancer care, (6) psychosocial care, and (7) symptom control.

Date: Measure published in 2005.¹

Perspective: Patient/Family

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 1,5
- **Communicate:**
 - Interpersonal communication:
 - *Between health care professional(s) and patient/family:* 9, 13
 - Information transfer:
 - *Between health care professional(s) and patient/family:* 1, 6, 7, 14-23
 - *Across health care teams or settings:* 2-4
- **Facilitate transitions:**
 - Across settings: 16, 24-26
- **Assess needs and goals:** 13,15
- **Create a proactive plan of care:** 7, 28, 29
- **Monitor, follow up, and respond to change:** 3
- **Support self-management goals:** 23
- **Teamwork focused on coordination:** 8

Development and Testing: Questions were obtained from a survey designed by the Picker Institute and were adapted for a telephone interview. The instrument was pilot tested on a sample of 50 patients. Principal factor analysis was conducted to group questions into 6 different domains of care. All domains had moderate to high internal consistency (Cronbach's alpha ranged from 0.55 to 0.82).¹

Link to Outcomes or Health System Characteristics: Worse physical, functional, and disease-specific well-being as measured by the Trials Outcomes Index were found to be associated with higher adjusted problem scores for coordination of care, confidence in providers, and health information.¹

Logic Model/Conceptual Framework: None described in the source identified.

Country: United States

Past or Validated Applications*:

- **Patient Age:** Adults
- **Patient Condition:** Combined Chronic Conditions, Cancer/Oncology
- **Setting:** Inpatient Facility

*Based on the source listed below.

Notes:

- The original measure did not have individual items numbered. In order to properly reference specific items within this profile, all instrument items found in the Appendix of the source article were consecutively numbered.¹
- This instrument contains 34 items; 25 were mapped.

Source:

1. Ayanian JZ, Zaslavsky AM, Guadagnoli E, et al. Patients' perceptions of quality of care for colorectal cancer by race, ethnicity, and language. *J Clin Oncol* 2005;23(27):6576-86.

Measure #41a. Ambulatory Care Experiences Survey (ACES)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			
<i>Interpersonal communication</i>	■		
<i>Information transfer</i>	■		
Facilitate transitions			
<i>Across settings</i>			
<i>As coordination needs change</i>			
Assess needs and goals	■		
Create a proactive plan of care			
Monitor, follow up, and respond to change	□		
Support self-management goals	□		
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Ambulatory Care Experiences Survey (ACES)

Purpose: To measure patient experiences with individual primary care physicians and their practices.

Format/Data Source: 34-item survey that covers two broad domains: (1) quality of physician-patient interactions and (2) organizational features of care.

Date: Measure developed in 2002.¹

Perspective: Patient/Family

Measure Item Mapping:

- **Communicate:**
 - Interpersonal communication:
 - *Between health care professional(s) and patient/family:* 6, 7, 10, 19
 - Information transfer:
 - *Between health care professional(s) and patient/family:* 9, 11, 15, 22
 - *Across health care teams or settings:* 21
 - *Participants not specified:* 12, 20, 26
- **Assess needs and goals:** 13, 14, 16
- **Monitor, follow up, and respond to change:** 22
- **Support self-management goals:** 11, 17

Development and Testing: ACES demonstrated high internal consistency reliability with a Cronbach's alpha >0.70. Physician-level reliability was also established with a sample size of 45 patients per physician.²

Link to Outcomes or Health System Characteristics: ACES has been used in several published studies that report its associations with important outcomes of care and organizational factors. A list of these publications may be found online.¹

Logic Model/Conceptual Framework: The Institute of Medicine definition of primary care was utilized as the measure's underlying conceptual model for measurement.²

Country: United States

Past or Validated Applications*:

- **Patient Age:** Children, Adults, Older Adults
- **Patient Condition:** General Population/Not Condition Specific
- **Setting:** Primary Care Facility

*Based on the sources listed below and input from the measure developers.

Notes:

- Instrument was provided by the authors upon request (A. Li, personal communication, September 9, 2010). The 2005 version was mapped for this profile.

- This instrument contains 34 items; 16 were mapped.
- The ACES survey is administered in Massachusetts every two years and annually in California as part of the California Cooperative Healthcare Reporting Initiative.
- A pediatric version of ACES is also available. The content is primarily the same as the adult version with the exception of a few items as well as the item stems (A.Li, personal communication, April 11, 2011).

Sources:

1. Tufts Medical Center: Institute for Clinical Research and Health Policy Studies Web site. Available at: http://160.109.101.132/icrhps/resprog/thi/aces_publist.asp Accessed: 21 September 2010.
2. Safran DG, Karp M, Coltin K, et al. Measuring patients' experiences with individual primary care physicians. *J Gen Int Med* 2006;21(1):13-21.

Measure #41b. Primary Care Provider Ambulatory Care Experiences Survey (PCP ACES)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			
<i>Interpersonal communication</i>	□		
<i>Information transfer</i>	□		
Facilitate transitions			
<i>Across settings</i>			
<i>As coordination needs change</i>			
Assess needs and goals	□		
Create a proactive plan of care			
Monitor, follow up, and respond to change			
Support self-management goals	□		
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Primary Care Provider Ambulatory Care Experiences Survey (PCP ACES)

Purpose: To evaluate patients' experiences with self-management support for chronic conditions.

Format/Data Source: This 5-item component on self-management support¹ for those patients with chronic conditions is intended for use with the Ambulatory Care Experiences Survey (ACES, measure 41a).² The self-management support items are used to create a composite measure ranging from 1 to 100, with higher scores indicating better support. (Note: Information in this profile focuses on the new self-management support composite, but is closely related to the ACES survey. See the profile for measure 41a for information on the ACES survey).

Date: Measure released in 2009.¹

Perspective: Patient/Family

Measure Item Mapping:

- Interpersonal communication: 1, 5
 - *Between health care professional(s) and patient/family:* 1, 5
- Information transfer: 4
 - *Across health care teams or settings:* 4
- **Assess needs and goals:** 2, 5
- **Support self-management goals:** 1, 3

Development and Testing: Psychometric analyses demonstrated acceptable internal consistency (>0.70). Cronbach's alpha for the self-management support composite was 0.75 among primary care respondents and 0.71 among specialist respondents. Overall Cronbach's alpha was 0.73. The minimum sample size required for medical groups to provide a reliable and stable estimate of self-management support using this composite was 199 patients (across all chronic conditions).¹

Link to Outcomes or Health System Characteristics: Among more than 80,000 patients surveyed from 173 medical groups in California, bivariate analyses showed that self-management support scores were significantly greater when additional medical professionals were involved in care for a chronic condition ($p < 0.001$). For example, participation of other physicians, nurses, nurse practitioners, physical therapists or nutritionists in addition to the general or specialist physician directing care. This relationship was observed for each of the eight types of chronic conditions analyzed (arthritis, asthma, back pain, cancer, cardiovascular disease, depression, diabetes and hypertension).¹

Logic Model/Conceptual Framework: None described in the sources identified.

Country: United States

Past or Validated Applications*:

- **Patient Age:** Adult
- **Patient Condition:** Combined Chronic Conditions, General Chronic Conditions
- **Setting:** Primary Care Facilities; Other Outpatient Specialty Care Facilities

*Based on the sources listed below and input from the measure developers.

Notes:

- All instrument items are located in the text of the source article. Items are numbered sequentially in the order in which they appear.¹
- This instrument contains 5 items, of which 5 were mapped.
- The 5-item self-management support component profiled here is intended for use with the Ambulatory Care Experiences Survey (ACES). See the ACES profile (measure #41a) for further information about that instrument.

Sources:

1. Sequist TD, von Glahn T, Li A, et al. Statewide evaluation of measuring physician delivery of self-management support in chronic disease care. *J Gen Intern Med* 2009;24(8):939-45.
2. Safran DG, Karp M, Coltin K, et al. Measuring patients' experiences with individual primary care physicians. Results of a statewide demonstration project. *J Gen Intern Med* 2006;21(1):13-21.

Measure #42. Patient Perception of Continuity Instrument (PC)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility	□		
Communicate			
<i>Interpersonal communication</i>	■		
<i>Information transfer</i>	□		
Facilitate transitions			
<i>Across settings</i>	□		
<i>As coordination needs change</i>			
Assess needs and goals	□		
Create a proactive plan of care			
Monitor, follow up, and respond to change			
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management	□		
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Patient Perception of Continuity Instrument (PC)

Purpose: To measure longitudinal care using patient perceptions.

Format/Data Source: Mailed questionnaire consisting of 23 statements describing various aspects of an ongoing patient-physician longitudinal relationship. Questions cover two main factors: (1) structure of health care delivery (11 items) and (2) interpersonal relationship between physician and patients (12 items).

Date: Measure published in 1988.¹

Perspective: Patient/Family

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 2H, 2K
- **Communicate:**
 - Interpersonal communication:
 - *Between health care professional(s) and patient/family:* 2B, 2C, 2E, 2G
 - Information transfer:
 - *Across health care teams or settings:* 1B, 1G
- **Facilitate transitions:**
 - Across settings: 2J, 2M
- **Assess needs and goals:** 1H
- **Medication management:** 1D

Development and Testing: Face validity of the 23 statements included in the questionnaire was established by a comprehensive review conducted by a group of board-certified family physicians. The Cronbach's alpha was calculated at 0.86, indicating a high degree of internal consistency. A principal component factor analysis was conducted and revealed two main factors (structure of health care delivery and interpersonal relationship between physician and patients).^{1,2}

Link to Outcomes or Health System Characteristics: There was no correlation between the PC measure and the calculated Usual Provider Continuity (UPC) and Continuity of Care (COC) values, two commonly used quantitative definitions of provider continuity. Patient perception of continuity, as measured by the PC instrument, was strongly and significantly associated with patient satisfaction, but was not associated with costs.¹

Logic Model/Conceptual Framework: None described in the sources identified.

Country: United States

Past or Validated Applications*:

- **Patient Age:** Adults
- **Patient Condition:** General Population/Not Condition Specific

- **Setting:** Primary Care Facility

*Based on the sources listed below and input from the measure developer.

Notes:

- All instrument items are located online.²
- This instrument contains 23 items; 12 were mapped.

Sources:

1. Chao J. Continuity of care: Incorporating patient perceptions. *Fam Med* 1988;20:333-337.
2. Toolkit of Instruments to Measure End-of-Life Care (TIME) Web site. Available at: <http://www.chcr.brown.edu/pcoc/CONTIN.HTM#Chao%20scale>. Accessed: 13 September 2010.

Measure #43. Jefferson Scale of Attitudes Toward Physician-Nurse Collaboration

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility		■	
Communicate		□	
<i>Interpersonal communication</i>		□	
<i>Information transfer</i>			
Facilitate transitions			
<i>Across settings</i>		□	
<i>As coordination needs change</i>			
Assess needs and goals		□	
Create a proactive plan of care			
Monitor, follow up, and respond to change			
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination		□	
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Jefferson Scale of Attitudes Toward Physician-Nurse Collaboration

Purpose: To evaluate the effectiveness of programs developed to foster physician-nurse collaboration and to study group differences on attitudes toward inter-personal collaboration.

Format/Data Source: 15-item survey that addresses 5 areas of physician-nurse interaction: (1) authority, (2) autonomy, (3) responsibility for patient monitoring, (4) collaborative decisionmaking, and (5) role expectations.

Date: Measure published in 1999.¹

Perspective: Health Care Professional(s)

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 4, 13-15
- **Communicate:**
 - *Within teams of health care professionals:* 6
 - Interpersonal communication:
 - *Within teams of health care professionals:* 11
- **Facilitate transitions:**
 - Across settings: 6
- **Assess needs and goals:** 8
- **Teamwork focused on coordination:** 1

Development and Testing: Survey items were first developed based on a review of the literature. Construct validity of survey established by the consistency of the extracted factor structure of the survey. The alpha reliability estimates of the scale for medical and nursing students were 0.84 and 0.85.¹ Reliability coefficients were also high when testing was conducted in different countries (0.70 for nurses in Israel and Italy and 0.86 for physicians Mexico).²

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: None described in the sources identified.

Country: United States, Israel, Italy, Mexico

Past or Validated Applications*:

- **Patient Age:** Not Applicable
- **Patient Condition:** Not Applicable
- **Setting:** Not Setting Specific

*Based on the sources listed below and input from the measure developer.

Notes:

- All instrument items located in Table 1 of the source article.¹

- This instrument contains 15 items; 9 were mapped.
- This instrument is a modified version of the original Jefferson Survey of Attitudes Toward Physician-Nurse Collaboration.³

Sources:

1. Hojat M, Fields SK, Veloski J, et al. Psychometric properties of an attitude scale measuring physician-nurse collaboration. *Eval Health Prof* 1999; 22:208-20.
2. Hojat M, Gonnella JS, Nasca TJ, et al. Comparisons of American, Israeli, Italian, and Mexican physicians and nurses on the total and factor scores of the Jefferson Scale of Attitudes toward Physician-Nurse Collaborative Relationships. *Int J Nurs Stud* 2003; 40:427-435.
3. Hojat M, Herman MW. Developing an instrument to measure attitudes toward nurses: Preliminary psychometric findings. *Psychol Rep* 1985; 56:571-79.
4. Ward J, Schaal M, Sullivan J, et al. The Jefferson Scale of Attitudes toward Physician-Nurse Collaboration: A study with undergraduate nursing students. *J Interprof Care* 2008; 22(4):375-86.
5. Hojat M, Nasca TJ, Cohen MJM, et al. Attitudes toward physician-nurse collaboration a cross-cultural study of male and female physicians and nurses in the United States and Mexico. *Nurs Res* 2001; 50:123-128.
6. Hojat M, Fields SK, Rattner SL, et al. Attitudes toward physician-nurse alliance: Comparisons of medical and nursing students. *Acad Med* 1997; 1072:s1-s3.

Measure #44. Clinical Microsystem Assessment Tool (CMAT)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			
<i>Interpersonal communication</i>			
<i>Information transfer</i>			■
Facilitate transitions			
<i>Across settings</i>			
<i>As coordination needs change</i>			
Assess needs and goals			□
Create a proactive plan of care			
Monitor, follow up, and respond to change			□
Support self-management goals			
Link to community resources			□
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			□
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			□

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Clinical Microsystem Assessment Tool (CMAT)

Purpose: To allow an organization to compare its characteristics to those considered key to successful integration.

Format/Data Source: 10-item questionnaire covering the 10 success characteristics related to high performance: (1) leadership, (2) organizational support, (3) staff focus, (4) education and training, (5) interdependence, (6) patient focus, (7) community and market focus, (8) performance results, (9) process improvement, and (10) information and information technology.

Date: Measure developed in 2001.¹

Perspective: System Representative(s)

Measure Item Mapping:

- **Communicate:**
 - Information transfer:
 - *Between health care professional(s) and patient/family:* 10A
 - *Within teams of health care professionals:* 2, 10B
- **Assess needs and goals:** 6
- **Monitor, follow up, and respond to change:** 9
- **Link to community resources:** 7
- **Teamwork focused on coordination:** 5
- **Health IT-enabled coordination:** 10C

Development and Testing: Developed through a systematic analysis of 20 high-performing clinical microsystems in North America. An adaptation of the CMAT, the Clinical Microsystems Assessment Diagnostic (CMAD) has been field tested and utilized in the Neonatal Intensive Care Unit (NICU) setting. (N. Huber, personal communication, September 11, 2010).

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: The following definition of microsystems in health care was utilized: “A clinical microsystem is a small group of people who work together on a regular basis to provide care to discrete subpopulations of patients. It has clinical and business aims, linked processes, and a shared information environment, and it produces performance outcomes. Microsystems evolve over time and are often embedded in larger organizations. They are complex adaptive systems, and as such they must do the primary work associated with core aims, meet the needs of internal staff, and maintain themselves over time as clinical units.”¹The concept of the clinical microsystem is also being used by the Institute of Medicine’s *Crossing the Quality Chasm Report*, The Institute for Healthcare Improvement’s (IHI) Idealized Design of Clinical Office Practice program, and the IHI’s Pursuing Perfection program.

Country: United States

Past or Validated Applications*:

- **Patient Age:** Not Applicable
- **Patient Condition:** Not Applicable
- **Setting:** Not Setting Specific

*Based on the sources listed below and input from the measure developers.

Notes:

- All instrument items located online.^{1,2}
- The 2001 CMAT was adapted into a diagnostic assessment, the CMAD, in 2006. It includes additional leadership diagnostic survey questions and open ended questions for each of the 10 success characteristics. For more information, see Appendix IV.
- This CMAT contains 12 items; 8 were mapped.

Sources:

1. Institute for Healthcare Improvement (IHI) Web site. Available at: <http://www.ihl.org/IHI/Topics/Improvement/ImprovementMethods/Tools/ClinicalMicrosystemAssessmentTool.htm> Accessed: 13 September 2010.
2. California Department of Healthcare Services Web site. Available at: <http://www.dhcs.ca.gov/provgovpart/initiatives/nqi/Documents/MSAssessmentFinal.pdf> Accessed: 13 September 2010.
3. Nelson EC, Batalden PB, Huber TP, et al. Microsystems in health care: Part 1. Learning from high-performing front-line clinical units. *Jt Comm J Qual Improv* 2002;28(9):472-93.
4. Armitage GD, Suter ES, Oelke ND, et al. Health systems integration: State of the evidence. *Int J Integr Care* 2009;19:1-11.

Measure #45. Components of Primary Care Index (CPCI)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility	■		
Communicate	□		
<i>Interpersonal communication</i>	■		
<i>Information transfer</i>	■		
Facilitate transitions			
<i>Across settings</i>			
<i>As coordination needs change</i>			
Assess needs and goals	□		
Create a proactive plan of care			
Monitor, follow up, and respond to change	□		
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home	□		
Care management			
Medication management			
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Components of Primary Care Index (CPCI)

Purpose: To measure the major components of primary care from the perspective of the patient.

Format/Data Source: 19-item survey to be completed by the patient immediately following a visit with a physician. The survey covers 7 components of primary care: (1) comprehensiveness of care, (2) accumulated knowledge, (3) interpersonal communication, (4) coordination of care, (5) first-contact care, (6) continuity of care, and (7) longitudinality.

Date: Measure published in 1997.¹

Perspective: Patient/Family

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 1, 14, 19
- **Communicate:**
 - *Across health care teams or settings:* 11
 - Interpersonal communication:
 - *Between health care professional(s) and patient/family:* 6, 5, 8
 - Information transfer:
 - *Between health care professional(s) and patient/family:* 7
 - *Across health care teams or settings:* 2, 10, 12
- **Assess needs and goals:** 4
- **Monitor, follow up, and respond to change:** 12, 13
- **Health care home:** 18

Development and Testing: A panel of experts consisting of practicing physicians, a health services researcher-biostatistician, a psychometrician-biostatistician, a sociologist, and a nurse administrator evaluated the content validity of the instrument. Revisions to the survey items were based on the panel's discussion and comments. The instrument was pilot tested with a sample of 43 patients from 3 different sites. Factor analysis was conducted and demonstrated good internal consistency reliabilities of 4 factors. The Cronbach's alpha for each factor was: patient preferences for their regular physician (0.74), interpersonal communication (0.68), accumulated knowledge of patient (0.75), and coordination of care (0.79). The validity of the instrument was established by demonstrating that CPCI scale scores are associated with 3 satisfaction measures consistent with theoretically derived hypotheses about the primary care concepts measured.¹

Link to Outcomes or Health System Characteristics: Adjusted linear regressions demonstrated that higher CPCI care coordination scale scores were highly associated with increased continuity of care as measured by the Continuity of Care Index (COC).² Higher CPCI scale scores for primary care communication and coordination of care were associated with lower patient hassle scores as measured by a 16-item health care systems hassles scale.³ CPCI scale scores for interpersonal communication and coordination of care were shown to be significantly associated with the delivery of preventive screening services.⁴ In a population of women veteran patients, CPCI scores were higher for coordination if their provider offered gynecologic services or enrolled patients in a women's clinic.⁵

Logic Model/Conceptual Framework: Survey questions were modeled based on the 1994 Institute of Medicine (IOM) definition of primary care as well as the core elements of the 1978 IOM components of access, continuity, coordination, interpersonal communication, and comprehensive care.

Country: United States

Past or Validated Applications*:

- **Patient Age:** Children, Adults, Not Age Specific
- **Patient Condition:** General Population/Not Condition Specific
- **Setting:** Primary Care Facility, Other Outpatient Specialty Care Facility

*Based on the sources listed below.

Notes:

- All instrument items are located in Table 2 of the source article.¹
- This instrument contains 19 items; 14 were mapped.

Sources:

1. Flocke SA. Measuring attributes of primary care: Development of a new instrument. *J Fam Pract* 1997;45(1):64-75.
2. Christakis DA, Wright JA, Zimmerman FJ, et al. Continuity of care is associated with well-coordinated care. *Ambul Pediatr* 2003;3(2):82-86.
3. Parchman ML, Noel PH, Lee S. Primary care attributes, health care system hassles, and chronic illness. *Med Care* 2005;43(11):1123-8.
4. Flocke SA, Stange KC, Zyzanski SJ. The association of attributes of primary care with the delivery of clinical preventive services. *Med Care* 1998;36(8):AS21-30.
5. Bean-Mayberry BA, Change CH, McNeil MA, et al. Ensuring high-quality primary care for women: Predictors of success. *Womens Health Issues* 2006;16:22-9.

Measure #46. Relational Coordination Survey

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility		□	
Communicate		■	
<i>Interpersonal communication</i>			
<i>Information transfer</i>			
Facilitate transitions			
<i>Across settings</i>			
<i>As coordination needs change</i>			
Assess needs and goals		□	
Create a proactive plan of care			
Monitor, follow up, and respond to change			
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination		□	
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Relational Coordination Survey

Purpose: To determine the impact of relational coordination on quality of care by measuring dimensions of communication and relationships among health care providers and testing their impact on performance.

Format/Data Source: 7-item survey consisting of 4 communication dimensions (frequent, timely, accurate, problem solving) and 3 relationship dimensions (shared goals, shared knowledge, mutual respect).

Date: Measure published in 2000.¹

Perspective: Health Care Professional(s)

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 5, 6
- **Communicate:**
 - *Across health care teams or settings:* 1-3
- **Assess needs and goals:** 7
- **Teamwork focused on coordination:** 4, 7

Development and Testing: The Cronbach's alphas for the individual dimensions of relational coordination ranged from 0.717 to 0.840, and the overall index of relational coordination had a Cronbach's alpha of 0.849.¹

Link to Outcomes or Health System Characteristics: Higher levels of relational coordination among care providers was significantly associated with improved quality of care (measured by a quality-of-care index developed from 25 questionnaire items from the Service Quality Questionnaire pertaining to the patient's acute-care experience). Postoperative freedom from pain associated with the overall index of relational coordination. Frequency of communication, shared goals, shared knowledge, and mutual respect were significantly associated with patient freedom from pain.¹

Logic Model/Conceptual Framework: This instrument is based on the concept of relational coordination which is defined as, "coordination that is carried out by front-line workers with an awareness of their relationship to the overall work process and to other participants in that process."² Health care settings characterized by high levels of uncertainty, interdependence, and time constraints can utilize relational coordination to improve quality and efficiency of performance by improving the exchange of information relevant to the care of a given patient.

Country: United States

Past or Validated Applications*:

- **Patient Age:** Older Adults, Adults, Not Age Specific
- **Patient Condition:** Combined Chronic Conditions, General Chronic Conditions, Other – total joint arthroplasty, General Population/Not Condition Specific

- **Setting:** Inpatient Care Facility, Primary Care Facility, Long Term Care Facility

*Based on the sources listed below and input from the measure developers.

Notes:

- All instrument items are located online.³
- This instrument contains 7 items; all 7 were mapped.
- The Measure Item Mapping portion of the profile refers to the question items found in the Relational Coordination Survey for Patient Care. For those interested in either the Short Form Relational Coordination Survey for Nursing Homes or the Relational Coordination Survey for Patient Care, by Individual Patient, both can be found online.²
- The Relational Coordination Survey has also been tested in non-healthcare settings, including airlines, criminal justice and early childhood (J.H. Gittell, personal communication, April 14, 2011).

Sources:

1. Gittell JH, Fairfield KM, Bierbaum B, et al. Impact of relational coordination on quality of care, postoperative pain and functioning, and length of stay. *Med Care* 2000;38(8):807-19.
2. Gittell JH. Organizing work to support relational coordination. *Int J Hum Resour Man* 2000;11(3):517-39.
3. Relational Coordination Web site. Available at: <http://www.jodyhoffergittell.info/content/rc.html>. Accessed: 13 September 2010.
4. Gittell JH. Coordinating mechanisms in care provider groups: Relational coordination as a mediator and input uncertainty as a moderator of performance outcomes. *Mgt Science* 2002; 48(11): 1408-1426.
5. Weinberg, D, Lusenhop, W, Gittell, et al. Coordination between formal care providers and informal caregivers. *Health Care Manage R* 2007; 32(2): 140-150.
6. Gittell JH, Weinberg, DB, Bennett, et al. Is the doctor in? A relational approach to job design and the coordination of work. *Hum Resource Manage* 2006; 47(4): 729-755.
7. Gittell, JH, Weinberg, D, Pfefferle, S, Bishop, C. Impact of relational coordination on job satisfaction and quality of care: A study of nursing homes. *Hum Resource Manage* 2008; 18(2): 154-170.
8. Havens, DS, Vasey, J, Gittell, JH, Lin, W. Relational coordination among nurses and other providers: Impact on the quality of care. *J Nurs Manage* 2010; 18: 926-937.

Measure #47. Fragmentation of Care Index (FCI)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			
<i>Interpersonal communication</i>			
<i>Information transfer</i>			
Facilitate transitions			
<i>Across settings</i>			
<i>As coordination needs change</i>			
Assess needs and goals			
Create a proactive plan of care			
Monitor, follow up, and respond to change			
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			■*
Care management			
Medication management			
Health IT-enabled coordination			

Legend:

■ = ≥ 3 corresponding measure items

□ = 1-2 corresponding measure items

*The use of a filled square for this measure indicates that it is a composite measure

Fragmentation of Care Index (FCI)

Purpose: To determine whether referrals to specialists for outpatient screening for coexisting conditions were offset by the potentially deleterious effects of care fragmentation.

Format/Data Source: The FCI is calculated using an equation that utilizes data on: (1) the total number of visits, (2) the total number of clinics visited, and (3) the total number of visits to a specific clinic being examined. The FCI can range from 0 (all visits were made to the same clinic) to 1 (all visits took place at a different clinic).

Date: Measure published in 2010.¹

Perspective: System Representative(s)

Measure Item Mapping:

- **Health Care Home:** composite measure

Development and Testing: Development of the FCI was based on the previously validated Continuity of Care Index described by Bice and Boxerman.²

Link to Outcomes or Health System Characteristics: Univariate analysis revealed a significant association between the FCI and the number of emergency department (ED) visits. The number of ED visits increased as the FCI increased (incidence rate ratio of 1.18; 95% CI 1.12-1.25).¹

Logic Model/Conceptual Framework: None described in the sources identified.

Country: United States

Past or Validated Applications*:

- **Patient Age:** Adults
- **Patient Condition:** Combined Chronic Conditions, General Chronic Conditions, Multiple Chronic Conditions
- **Setting:** Primary Care Facility, Other Outpatient Specialty Care Facility

*Based on the sources listed below and input from the measure developer.

Notes:

- Formula located in the Methods section of the source article.¹

Sources:

1. Liu CW, Einstadter D, Cebul RD. Care fragmentation and emergency department use among complex patients with diabetes. *Am J Manage Care* 2010;16(6):413-20.
2. Bice TW, Boxerman SB. A quantitative measure of continuity of care. *Med Care* 1977;15(4):347-9.

Measure #48. After-Death Bereaved Family Member Interview

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility	■		
Communicate	□		
<i>Interpersonal communication</i>	■		
<i>Information transfer</i>	■		
Facilitate transitions			
<i>Across settings</i>			
<i>As coordination needs change</i>			
Assess needs and goals			
Create a proactive plan of care			
Monitor, follow up, and respond to change			
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management	■		
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

After-Death Bereaved Family Member Interview

Purpose: To assess the quality of end-of-life care from the perspective of the family of individuals who have died in a hospice, hospital, or nursing home setting.

Format/Data Source: Structured interview protocol consisting of 53 questions covering 7 different domains of care: (1) physical comfort and emotional support, (2) inform and promote shared decisionmaking, (3) encourage advanced care planning, (4) focus on individual, (5) attend to the emotional and spiritual needs of the family, (6) provide coordination of care, and (7) support the self-efficacy of the family.

Date: Measure released in 2000.¹

Perspective: Patient/Family

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** C2, C2a, D6, D7
- **Communicate:**
 - *Between health care professional(s) and patient/family:* D15a, F1
 - Interpersonal communication:
 - *Between health care professional(s) and patient/family:* C1, C1a, C1b
 - Information transfer:
 - *Between health care professional(s) and patient/family:* C1c, C1d, D26, D26a, D27, D27a, D28, D28a, E1
 - *Across health care teams or settings:* D18
- **Medication management:** D12, D12a, D15, D25, D28, D28a

Development and Testing: The instrument has been tested for all three settings (hospice, hospital, and nursing home) and it proved to be both reliable and valid.¹ Cronbach's alpha exceeded 0.70 for all domains with more than 4 items except for the Coordination of Care domain. For test-retest reliability, the Kappa and intra-class correlation statistics revealed evidence of stability of the reported responses.²

Link to Outcomes or Health System Characteristics: For each proposed score, bereaved family members of decedents who were under hospice care reported fewer problems, a higher rating of care, and improved self-efficacy.²

Logic Model/Conceptual Framework: The instrument is based on a conceptual model of patient focused, family-centered medical care. The model was developed based on results from a qualitative literature review of expert guidelines and from focus groups with bereaved family members across different settings of care.²

Country: United States

Past or Validated Applications*:

- **Patient Age:** Adults, Older Adults

- **Patient Condition:** Other – End-of-life
- **Setting:** Inpatient Facility, Long Term Care Facility, Home Health Care

*Based on the sources listed below and input from the measure developer.

Notes:

- All instrument items are available online.¹
- This instrument has 3 versions (hospice, hospital, and nursing home). All questions are nearly identical except for minor wording changes related to the setting. The hospice version has one additional question (D29b) not found in the other versions, and thus has a total of 54 questions.
- This instrument contains 53 items; 25 were mapped.

Sources:

1. Toolkit to measure end-of-life care (TIME): After-Death Bereaved Family Interview. Available at: <http://www.chcr.brown.edu/pcoc/linkstoinstrumhtm.htm>. Accessed: 7 October 2010.
2. Teno JM, Clarridge B, Case V, et al. Validation of toolkit After-Death Bereaved Family Member Interview. *J Pain Symptom Manage* 2001;22(3):752-8.
3. Toolkit of instruments to measure end-of-life care (TIME): After-Death Bereaved Family Member Interview. Providence, RI: Brown University; Copyright 1998-2004,

Measure #49. Schizophrenia Quality Indicators for Integrated Care

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			
<i>Interpersonal communication</i>			
<i>Information transfer</i>	□		□
Facilitate transitions			
<i>Across settings</i>			□
<i>As coordination needs change</i>			
Assess needs and goals			□
Create a proactive plan of care			□
Monitor, follow up, and respond to change			□
Support self-management goals			□
Link to community resources			
Align resources with patient and population needs			□
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			□
Medication management			
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Schizophrenia Quality Indicators for Integrated Care

Purpose: To develop a set of quality indicators for schizophrenia care to be used for continuous quality monitoring.

Format/Data Source: 12 structural and 22 quality indicators from a variety of source data (administrative data, additional provider data, patient survey).

Date: Measure published in 2010.¹

Perspective: System Representative(s); 1 item from Patient/Family perspective

Measure Item Mapping:

- **Communicate:**
 - Information transfer:
 - *Between health care professional(s) and patient/family:* Q18
 - *Across health care teams or settings:* S5
- **Facilitate transitions:**
 - Across settings: S5
- **Assess needs and goals:** Q12
- **Create a proactive plan of care:** Q15
- **Monitor, follow up, and respond to change:** Q4
- **Support self-management goals:** Q19
- **Align resources with patient and population needs:** S12
- **Care management:** Q13

Development and Testing: A systematic literature search was conducted to identify potentially relevant validated quality indicators. Two investigators independently selected all relevant quality indicators, and all were described based on the framework by Hermann and Palmer.² The final selection of indicators was conducted by a panel of stakeholders consisting of psychiatric experts, representatives of a service user, and a family advocacy organization. None of the selected indicators was validated in experimental studies, but evidence and validation base played only a subordinate role for indicator prioritization by stakeholders.¹

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: Hermann and Palmer framework used to describe identified indicators.²

Country: Germany

Past or Validated Applications*:

- **Patient Age:** Not Age Specific
- **Patient Condition:** Combined Chronic Conditions, Mental Illness & Substance Use Disorders

- **Setting:** Not Setting Specific

*Based on the sources listed below and input from the measure developer.

Notes:

- All instrument items are located in Tables 2 and 3 of the source article.¹
- This instrument contains 34 items; 8 were mapped.

Sources:

1. Weinmann S, Roick C, Martin L, et al. Development of a set of schizophrenia quality indicators for integrated care. *Epidemiol Psychiatr Soc* 2010;19(1):52-62.
2. Hermann RC, Palmer H, Leff S, et al. Achieving consensus across diverse stakeholders on quality measures for mental health care. *Med Care* 2004;42:1246-53.

Measure #50. Degree of Clinical Integration Measures

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			
<i>Interpersonal communication</i>			
<i>Information transfer</i>			□
Facilitate transitions			
<i>Across settings</i>			□
<i>As coordination needs change</i>			
Assess needs and goals			
Create a proactive plan of care			
Monitor, follow up, and respond to change			
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			■

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Degree of Clinical Integration Measures

Purpose: To measure functional integration, which is defined as the extent to which patient care services are coordinated across various functions, activities, and operating units of a system.

Format/Data Source: 17 measures used to assess 6 dimensions of clinical integration: (1) clinical protocol development, (2) medical records uniformity and accessibility, (3) clinical outcomes data collection and utilization, (4) clinical programming and planning efforts, (5) shared clinical support services, and (6) shared clinical services lines.

Date: Measures published in 1994.¹

Perspective: System Representative(s)

Measure Item Mapping:

- **Communicate:**
 - Information transfer:
 - *Across health care teams or settings:* 8,9
- **Facilitate transitions:**
 - Across settings: 16,17
- **Health IT-enabled coordination:** 3-7

Development and Testing: Measures were developed based on a literature review, interaction with the study research advisory group committee, and site visits.¹

Link to Outcomes or Health System Characteristics: None described in the source identified.

Logic Model/Conceptual Framework: Builds on the work of models and frameworks of vertically integrated health systems.¹

Country: United States

Past or Validated Applications*:

- **Patient Age:** Not Age Specific
- **Patient Condition:** General Population/Not Condition Specific
- **Setting:** Not Setting Specific

*Based on the source listed below.

Notes:

- The original measure did not have individual items numbered. In order to properly reference specific items within this profile, all instrument items found in Table 3 of the source article were consecutively numbered.¹
- This instrument contains 17 items; 9 were mapped.

Source:

1. Devers KJ, Shortell SM, Gillies RR, et al. Implementing organized delivery systems: An integration scorecard. *Health Care Manage Rev* 1994;19(3):7-20.

Measure #51. National Survey for Children’s Health (NSCH)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate	□		
<i>Interpersonal communication</i>	□		
<i>Information transfer</i>	□		
Facilitate transitions			
<i>Across settings</i>	□		
<i>As coordination needs change</i>			
Assess needs and goals			
Create a proactive plan of care			
Monitor, follow up, and respond to change			
Support self-management goals			
Link to community resources			
Align resources with patient and population needs	□		
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home	■		
Care management	□		
Medication management			
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

National Survey for Children's Health (NSCH)

Purpose: To collect a broad range of information about children's health and well-being in order to allow for comparisons among States as well as nationally.

Format/Data Source: Telephone interview comprised of 11 sections: (1) initial demographics, (2) health and functional status, (3) health insurance coverage, (4) health care access and utilization, (5) medical home, (6) early childhood, (7) middle childhood and adolescence, (8) family functioning, (9) parental health, (10) neighborhood and community characteristics, and (11) additional demographics. The section most relevant to care coordination is Section 5 – Medical Home, which consists of 4 subdomains: (1) referrals; (2) care coordination; (3) provider communication; and (4) compassionate, culturally effective, family centered care.

Date: Measure administered nationally in 2003 and 2007.¹

Perspective: Patient/Family

Measure Item Mapping:

- **Communicate:**
 - *Across health care teams or settings:* K5Q30, K5Q31, K5Q32
 - Interpersonal communication:
 - *Between health care professional(s) and patient/family:* K5Q41
 - Information transfer:
 - *Between health care professional(s) and patient/family:* K5Q43
- **Facilitate transitions:**
 - Across settings: K5Q10, K5Q11
- **Align resources with patient and population needs:** K5Q42, K5Q45, K5Q46
- **Health care home:** K5Q10, K5Q11, K5Q20-22, K5Q30-32, K5Q40-46
- **Care management:** K5Q20, K5Q22

Development and Testing: The survey's framework, intended goals, and content was designed by a National Expert Panel consisting of State and Federal policymakers, health services researchers, survey design experts, parents, and health care practitioners. A subset of this group formed the Technical Expert Panel that met multiple times to discuss the development and testing of specific questionnaire items. A majority of the questions included in the survey were taken directly from previously validated surveys including: the National Health Interview Survey (NHIS), the National Survey of Children with Special Health Care Needs, the Consumer Assessment of Health Plans Survey (CAHPS), the National Survey of America's Families, the Promoting Healthy Development Survey, and the Living With Illness Survey. All questionnaire items were also reviewed by outside experts and the user community prior to final inclusion. A pretest of the survey instrument was conducted with approximately 1000 interviews.²

Link to Outcomes or Health System Characteristics: The NSCH survey questions and data have been used in several published studies. A list of these publications may be found online.¹

Logic Model/Conceptual Framework: The Medical Home Section of the survey was based largely on the American Academy of Pediatrics medical home model of primary pediatric care, which defines medical home care as accessible, continuous, comprehensive, family-centered, compassionate, culturally effective, and coordinated with specialized services.²

Country: United States

Past or Validated Applications*:

- **Patient Age:** Children
- **Patient Condition:** General Population/Not Condition Specific
- **Setting:** Not Setting Specific

*Based on the sources listed below and input from the measure developers.

Notes:

- The NSCH consists of 11 sections, but only the section relevant to care coordination (Section 5 – Medical Home) was mapped for this profile. The full-length NSCH as well as a Spanish version can be found online.¹
- The Measure Item Mapping portion of the profile refers to the question items found in the 2007 version of the NSCH. For those interested in the 2003 version of the NSCH, it can be found online.¹
- The mapped section of the measure contains 15 items; all 15 were mapped.
- The 2003 and 2007 national and State data are publicly available for download online.¹

Sources:

1. National Survey of Children's Health Web site. Available at: <http://www.nschdata.org/content/Default.aspx>. Accessed: 20 September 2010
2. Blumberg SJ, Foster EB, Frasier AM, et al. Design and operation of the National Survey of Children's Health, 2007. *Vital Health Stat 1*. (forthcoming)
3. van Dyck P, Kogan MD, Heppel D, et al. The National Survey of Children's Health: A new data resource. *Matern Child Hlth J* 2004;8(3):183-8.

Measure #52. Mental Health Professional HIV/AIDS Point Prevalence and Treatment Experiences Survey Part II

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			
<i>Interpersonal communication</i>			■
<i>Information transfer</i>			■
Facilitate transitions			
<i>Across settings</i>			
<i>As coordination needs change</i>			
Assess needs and goals			
Create a proactive plan of care			□
Monitor, follow up, and respond to change			
Support self-management goals			
Link to community resources			■
Align resources with patient and population needs			■
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			■
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Mental Health Professional HIV/AIDS Point Prevalence and Treatment Experiences Survey Part II

Purpose: To assess multiple aspects of system integration within the mental health facility, and system integration between mental health, primary care, and case management for the HIV-infected patient.

Format/Data Source: Mailed questionnaire with questions divided into 4 categories: (1) mental health system integration with primary care physicians, (2) mental health system integration with care coordination sites, (3) mental health system integration with other mental health centers, and (4) internal integration of HIV care into the mental health system itself.

Date: Measure published in 2001.¹

Perspective: System Representative(s)

Measure Item Mapping:

- **Communicate:**
 - Interpersonal communication:
 - *Across health care teams or settings:* 2, 4, 5, 7, 8, 10
 - Information transfer:
 - *Across health care teams or settings:* 1, 6, 11
- **Create a proactive plan of care:** 3
- **Link to community resources:** 9, 10, 23, 27, 28
- **Align resources with patient and population needs:** 15-17, 24, 25, 29, 30
- **Teamwork focused on coordination:** 3, 12-14, 18-22, 26, 31-33

Development and Testing: Panel convened at the Indiana State Department of Health—composed of experts from the fields of medicine, public health, community mental health, medical sociology, and psychology—developed the survey instrument. Internal consistency reliability analysis was conducted. The Cronbach’s alpha coefficient results for each category were: specific indicators of mental health systems integration with primary care physicians (0.80), global assessment of mental health system integration with primary care physicians (0.75), specific indicators of mental health system integration with HIV care coordination sites (0.90), global assessment of mental health system integration with HIV care coordination sites (0.74), global assessment of mental health system integration with other mental health agencies (0.57), global assessment of mental health system integration of HIV care into the mental health system (0.61).¹

Link to Outcomes or Health System Characteristics: System integration was not significantly associated with mental health service provider turnover rates.¹

Logic Model/Conceptual Framework: None described in the source identified.

Country: United States

Past or Validated Applications*:

- **Patient Age:** Adults
- **Patient Condition:** Combined Chronic Conditions, General Chronic Conditions, Multiple Chronic Conditions, Mental Illness & Substance Use Disorders
- **Setting:** Primary Care Facility, Behavioral Health Care Facility

*Based on the source listed below.

Notes:

The original measure did not have individual items numbered. In order to properly reference specific items within this profile, all instrument items found in Tables 2 and 3 of the source article were consecutively numbered.¹This instrument contains 34 items; 33 were mapped.

Source:

1. Lemmon R, Shuff M. Effects of mental health centre staff turnover on HIV/AIDS service delivery integration. *AIDS Care* 2001;13(5):651-61.

Measure #53. Cardiac Rehabilitation Patient Referral from an Inpatient Setting

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			
<i>Interpersonal communication</i>			
<i>Information transfer</i>			□
Facilitate transitions			
<i>Across settings</i>			
<i>As coordination needs change</i>			
Assess needs and goals			
Create a proactive plan of care			
Monitor, follow up, and respond to change			
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Cardiac Rehabilitation Patient Referral from an Inpatient Setting

Purpose: To measure the percentage of patients hospitalized with a primary diagnosis of an acute myocardial infarction (MI) or chronic stable angina (CSA), or who during hospitalization have undergone coronary artery bypass graft (CABG) surgery, a percutaneous coronary intervention (PCI), cardiac valve surgery, or cardiac transplantation who are referred to an early outpatient cardiac rehabilitation/secondary prevention (CR) program.¹

Format/Data Source: This process measure requires administrative claims data and/or data collected from the medical record. Data from clinical registries may also be used, if available (e.g., National Cardiovascular Data Registry, ACTION-Get With the Guidelines Inpatient Registry).¹

Date: Measure released in 2007² and updated in 2010.¹

Perspective: System Representative(s).

Measure Item Mapping:

This measure maps to the following domains: There are no individual measure items to map.

- **Communicate**
 - Information transfer
 - *Between health care professional(s) and patient/family*
 - *Across health care teams or settings*

Development and Testing: : The Cardiac Rehabilitation/Secondary Prevention Performance Measure Writing Committee reviewed a list of 39 elements from practice guidelines and evaluated their potential use as performance measures according to the ACC/AHA Task Force on Performance Measures guidelines. They selected those that were most evidence-based, interpretable, actionable, clinically meaningful, valid, reliable, and feasible for inclusion.² The measure was endorsed by NQF as part of their preferred practices and performance measures for measuring and reporting care coordination, released in September 2010.³

Link to Outcomes or Health System Characteristics: The measure is based on clinical guidelines with the highest level of evidence, including links to clinical outcomes.²

Logic Model/Conceptual Framework: The measure is based on clinical guidelines.²

Country: United States

Past or Validated Applications*:

- **Patient Age:** Adults
- **Patient Condition:** Combined Chronic Conditions, General Chronic Conditions, Other – cardiac conditions not identified under General Chronic Conditions

- **Setting:** Inpatient Facility, Other Outpatient Specialty Care Facility, Long Term Care Facility

*Based on the sources listed below and input from the measure developers.

Notes:

- Detailed measure specifications are included in the AACVPR/AACF/AHA 2010 Update report.¹
- Because the NQF-endorsed preferred practices and performance measures for measuring and reporting care coordination were released shortly before completion of the *Atlas*, we were not able to contact the measure developers about any on-going measure development or testing. Additional information may become available in the future.

Sources:

1. Thomas RJ, King M, Lui K, et al. AACVPR/ACC/AHA 2010 update: performance measures on cardiac rehabilitation for referral to cardiac rehabilitation/secondary prevention services: a report of the American Association of Cardiovascular and Pulmonary Rehabilitation and the American College of Cardiology Foundation/American Heart Association Task Force on Performance Measures (Writing Committee to Develop Clinical Performance Measures for Cardiac Rehabilitation). *J Am Coll Cardiol* 2010;56:1159–67. Also published in *Circulation* 2010;122:1342-50. Also published in *J Cardiopulm Rehabil* 2010;30:279-88.
2. Thomas RJ, King M, Lui K, et al. AACVPR/AAC/AHA 2007 performance measures on cardiac rehabilitation for referral to and delivery of cardiac rehabilitation/secondary prevention services. *J Am Coll Cardiol* 2007;50:1400-33. Also published in *Circulation* 2007;116:1611-42. Also published in *J Cardiopulm Rehabil* 2007;27:260-90.
3. National Quality Forum. Preferred practices and performance measures for measuring and reporting care coordination: a consensus report. Washington, DC: National Quality Forum; 2010.

Measure #54. Cardiac Rehabilitation Patient Referral from an Outpatient Setting

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			
<i>Interpersonal communication</i>			
<i>Information transfer</i>			□
Facilitate transitions			
<i>Across settings</i>			
<i>As coordination needs change</i>			
Assess needs and goals			
Create a proactive plan of care			
Monitor, follow up, and respond to change			□
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Cardiac Rehabilitation Patient Referral from an Outpatient Setting

Purpose: To measure the percentage of patients evaluated in an outpatient setting who within the past 12 months have experienced an acute myocardial infarction (MI), coronary artery bypass graft (CABG) surgery, a percutaneous coronary intervention (PCI), cardiac valve surgery, or cardiac transplantation, or who have chronic stable angina (CSA) and have not already participated in an early outpatient cardiac rehabilitation/secondary prevention (CR) program for the qualifying event/diagnosis, who are referred to such a program.¹

Format/Data Source: This process measure requires administrative claims data and/or data collected from the medical record. Data from clinical registries may also be used, if available (e.g., National Cardiovascular Data Registry, ACTION-Get With the Guidelines Inpatient Registry).¹

Date: Measure released in 2007² and updated in 2010.¹

Perspective: System Representative(s).

Measure Item Mapping:

This measure maps to the following domains: There are no individual measure items to map.

- **Communicate**
 - Information transfer
 - *Between health care professional(s) and patient/family*
 - *Across health care teams or settings*
- **Monitor, follow-up, and respond to change**

Development and Testing: The Cardiac Rehabilitation/Secondary Prevention Performance Measure Writing Committee reviewed a list of 39 elements from practice guidelines and evaluated their potential use as performance measures according to the ACC/AHA Task Force on Performance Measures guidelines. They selected those that were most evidence-based, interpretable, actionable, clinically meaningful, valid, reliable, and feasible for inclusion.² The measure was endorsed by NQF as part of their preferred practices and performance measures for measuring and reporting care coordination, released in September 2010.³

Link to Outcomes or Health System Characteristics: The measure is based on clinical guidelines with the highest level of evidence, including links to clinical outcomes.²

Logic Model/Conceptual Framework: The measure is based on clinical guidelines.²

Country: United States

Past or Validated Applications*:

- **Patient Age:** Adults

- **Patient Condition:** Combined Chronic Conditions, General Chronic Conditions, Other – cardiac conditions not identified under General Chronic Conditions
- **Setting:** Primary Care Facility, Other Outpatient Specialty Care Facility

*Based on the sources listed below and input from the measure developers.

Notes:

- Detailed measure specifications are included in the AACVPR/AACF/AHA 2010 Update report.¹
- Because the NQF-endorsed preferred practices and performance measures for measuring and reporting care coordination were released shortly before completion of the *Atlas*, we were not able to contact the measure developers about any on-going measure development or testing. Additional information may become available in the future.

Sources:

1. Thomas RJ, King M, Lui K, et al. AACVPR/ACC/AHA 2010 update: performance measures on cardiac rehabilitation for referral to cardiac rehabilitation/secondary prevention services: a report of the American Association of Cardiovascular and Pulmonary Rehabilitation and the American College of Cardiology Foundation/American Heart Association Task Force on Performance Measures (Writing Committee to Develop Clinical Performance Measures for Cardiac Rehabilitation). *J Am Coll Cardiol* 2010;56:1159–67. Also published in *Circulation* 2010;122:1342-50. Also published in *J Cardiopulm Rehabil* 2010;30:279-88.
2. Thomas RJ, King M, Lui K, et al. AACVPR/AAC/AHA 2007 performance measures on cardiac rehabilitation for referral to and delivery of cardiac rehabilitation/secondary prevention services. *J Am Coll Cardiol* 2007;50:1400-33. Also published in *Circulation* 2007;116:1611-42. Also published in *J Cardiopulm Rehabil* 2007;27:260-90.
3. National Quality Forum. Preferred practices and performance measures for measuring and reporting care coordination: a consensus report. Washington, DC: National Quality Forum; 2010.

Measure #55. Patients with a Transient Ischemic Event ER Visit That Had a Follow Up Office Visit

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			
<i>Interpersonal communication</i>			
<i>Information transfer</i>			
Facilitate transitions			
<i>Across settings</i>			□
<i>As coordination needs change</i>			
Assess needs and goals			
Create a proactive plan of care			
Monitor, follow up, and respond to change			□
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Patients with a Transient Ischemic Event ER Visit That Had a Follow Up Office Visit

Purpose: To measure the percent of patients with an emergency department visit for a transient ischemic event who had a follow-up outpatient encounter within 14 days.¹

Format/Data Source: Electronic claims data.

Date: Included in NQF preferred practices and performance measures set, released in September 2010.¹

Perspective: System Representative(s)

Measure Item Mapping:

This measure maps to the following domains: There are no individual measure items to map.

- **Facilitate transitions**
 - Across settings
- **Monitor, follow up and respond to change**

Development and Testing: This measure was endorsed by NQF as part of their preferred practices and performance measures for measuring and reporting care coordination, released in September 2010.¹

Link to Outcomes or Health System Characteristics: None described in the source identified.

Logic Model/Conceptual Framework: None described in the source identified.

Country: United States

Past or Validated Applications*:

- **Patient Age:** Adults
- **Patient Condition:** Other – Transient Ischemic Event (stroke)
- **Setting:** Emergency Care Facility, Primary Care Facility, Other Outpatient Specialty Care Facility

*Based on the source listed below.

Notes:

- Because the NQF-endorsed preferred practices and performance measures for measuring and reporting care coordination were released shortly before completion of the *Atlas*, we were not able to contact the measure developers about any on-going measure development or testing. Additional information may become available in the future.

Source:

1. National Quality Forum. Preferred practices and performance measures for measuring and reporting care coordination: a consensus report. Washington, DC: National Quality Forum; 2010.

Measure #56. Biopsy Follow Up

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			
<i>Interpersonal communication</i>			
<i>Information transfer</i>			□
Facilitate transitions			
<i>Across settings</i>			
<i>As coordination needs change</i>			
Assess needs and goals			
Create a proactive plan of care			
Monitor, follow up, and respond to change			
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Biopsy Follow Up

Purpose: To measure the percentage of patients who are undergoing a biopsy whose biopsy results have been reviewed by the biopsying physician and communicated to the primary care physician and the patient, denoted by entering said physicians' initials into a log, as well as by documentation in the patient chart.¹

Format/Data Source: Review of medical chart

Date: Included in NQF preferred practices and performance measures set, released in September 2010.¹

Perspective: System Representative(s)

Measure Item Mapping:

This measure maps to the following domains: There are no individual measure items to map.

- **Communicate**
 - Information transfer
 - *Between health care professional(s) and patient/family*
 - *Across health care teams or settings*

Development and Testing: This measure was endorsed by NQF as part of their preferred practices and performance measures for measuring and reporting care coordination, released in September 2010.¹

Link to Outcomes or Health System Characteristics: None described in source identified.

Logic Model/Conceptual Framework: None described in source identified.

Country: United States

Past or Validated Applications*:

- **Patient Age:** Not Age Specific
- **Patient Condition:** Other - biopsy
- **Setting:** Primary Care Facility, Not Setting Specific

*Based on the source listed below and input from the measure developer.

Notes:

- Because the NQF-endorsed preferred practices and performance measures for measuring and reporting care coordination were released shortly before completion of the *Atlas*, we were not able to contact the measure developers about any on-going measure development or testing. Additional information may become available in the future.

Source:

1. National Quality Forum. Preferred practices and performance measures for measuring and reporting care coordination: a consensus report. Washington, DC: National Quality Forum; 2010.

Measure #57. Reconciled Medication List Received by Discharged Patients

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			□
Communicate			
<i>Interpersonal communication</i>			
<i>Information transfer</i>			□
Facilitate transitions			
<i>Across settings</i>			□
<i>As coordination needs change</i>			
Assess needs and goals			
Create a proactive plan of care			
Monitor, follow up, and respond to change			
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management			□
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Reconciled Medication List Received by Discharged Patients

Purpose: To measure the percentage of patients, regardless of age, discharged from an inpatient facility to home or any other site of care, or their caregiver(s), who received a reconciled medication list at the time of discharge including, at a minimum, medications in the specified categories.¹

Format/Data Source: This process measure requires administrative claims data and data collected from the medical record.¹

Date: Measure released in 2009.¹

Perspective: System Representative(s).

Measure Item Mapping:

This measure maps to the following domains: There are no individual measure items to map.

- **Establish accountability or negotiate responsibility**
- **Communicate**
 - Information transfer
 - *Between health care professional(s) and patient/family*
- **Facilitate transitions**
 - Across settings
- **Medication Management**

Development and Testing: The measure was endorsed by NQF as part of their preferred practices and performance measures for measuring and reporting care coordination, released in September 2010.²

Link to Outcomes or Health System Characteristics: In a Swedish study, the risk of negative clinical outcomes due to medication errors was significantly reduced for elderly individuals who were given comprehensive and structured information on medications at the time discharge. In another study, 14% of older patients that experienced a medication discrepancy were readmitted within 30 days of initial discharge, compared to only 6% among those patients without a medication discrepancy.¹

Logic Model/Conceptual Framework: This measure incorporates elements from The Joint Commission's 2009 Hospital Accreditation Standards, Medication Systems Guidelines from the Institute for Healthcare Improvement, and recommendations from Institute for Healthcare Improvement, a 2008 consensus policy statement from the American College of Physicians, the Society of General Internal Medicine, the Society of Hospital Medicine, the American Geriatrics Society, The American College of Emergency Physicians and the Society of Academic Emergency Medicine.¹

Country: United States

Past or Validated Applications*:

- **Patient Age:** Not Age Specific
- **Patient Condition:** General Population/Not Condition Specific
- **Setting:** Inpatient Facility, Primary Care Facility, Not Setting Specific

*Based on the sources listed below.

Notes:

- Detailed measure specifications are included in the Physician Consortium for Performance Improvement (PCPI) report.¹
- This measure is intended for use in conjunction with two other PCPI measures (Measure #58, Transition Record with Specified Elements Received by Discharged Patients (Inpatient Discharges to Home/Self Care or Any Other Site of Care); and Measure #59, Timely Transmission of Transition Record) as part of a bundled set. Each measure in the bundled set is intended to be scored separately.¹
- Because the NQF-endorsed preferred practices and performance measures for measuring and reporting care coordination were released shortly before completion of the *Atlas*, we were not able to contact the measure developers about any on-going measure development or testing. Additional information may become available in the future.

Sources:

1. American Board of Internal Medicine Foundation, American College of Physicians, Society of Hospital Medicine, Physician Consortium for Performance Improvement. Care Transitions Performance Measurement Set (Phase I: Inpatient discharges and emergency department discharges). Chicago, IL: American Medical Association; 2009.
2. National Quality Forum. Preferred practices and performance measures for measuring and reporting care coordination: a consensus report. Washington, DC: National Quality Forum; 2010.

Measure #58. Transition Record with Specified Elements Received by Discharged Patients (Inpatient Discharges)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			□
Communicate			
<i>Interpersonal communication</i>			
<i>Information transfer</i>			□
Facilitate transitions			
<i>Across settings</i>			□
<i>As coordination needs change</i>			
Assess needs and goals			
Create a proactive plan of care			□
Monitor, follow up, and respond to change			□
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management			□
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Transition Record with Specified Elements Received by Discharged Patients (Inpatient Discharges)

Purpose: To measure the percentage of patients, regardless of age, discharged from an inpatient facility to home or any other site of care, or their caregiver(s), who received a transition record (and with whom a review of all included information was documented) at the time of discharge including, at a minimum, all of the specified elements.¹

Format/Data Source: This process measure requires administrative claims data and data collected from the medical record.¹

Date: Measure released in 2009.¹

Perspective: System Representative(s)

Measure Item Mapping:

This measure maps to the following domains: There are no individual measure items to map.

- **Establish accountability or negotiate responsibility**
- **Communicate**
 - Information transfer
 - *Between health care professional(s) and patient/family*
- **Facilitate Transitions**
 - Across settings
- **Create a proactive plan of care**
- **Monitor, follow up, and respond to change**
- **Medication Management**

Development and Testing: The measure was endorsed by NQF as part of their preferred practices and performance measures for measuring and reporting care coordination, released in September 2010.²

Link to Outcomes or Health System Characteristics: One study showed that compared to patients receiving usual care, patients who received detailed instructions, medication review and help scheduling follow-up care at the time of discharge had 30% fewer readmissions and visits to the emergency department.¹

Logic Model/Conceptual Framework: This measure incorporates elements from The Joint Commission's 2009 Hospital Accreditation Standards and a 2008 consensus policy statement from the American College of Physicians, the Society of General Internal Medicine, the Society of Hospital Medicine, the American Geriatrics Society, The American College of Emergency Physicians and the Society of Academic Emergency Medicine.¹

Country: United States

Past or Validated Applications*:

- **Patient Age:** Not Age Specific
- **Patient Condition:** General Population/Not Condition Specific
- **Setting:** Inpatient Facility, Primary Care Facility, Not Setting Specific

*Based on the sources listed below.

Notes:

- Detailed measure specifications are included in the Physician Consortium for Performance Improvement (PCPI) report.¹
- This measure is intended for use in conjunction with two other PCPI measures (Measure #57, Reconciled Medication List Received by Discharged Patients; and Measure #59, Timely Transmission of Transition Record – Inpatients Discharged) as part of a bundled set. Each measure in the bundled set is intended to be scored separately.¹
- Because the NQF-endorsed preferred practices and performance measures for measuring and reporting care coordination were released shortly before completion of the *Atlas*, we were not able to contact the measure developers about any on-going measure development or testing. Additional information may become available in the future.

Sources:

1. American Board of Internal Medicine Foundation, American College of Physicians, Society of Hospital Medicine, Physician Consortium for Performance Improvement. Care Transitions Performance Measurement Set (Phase I: Inpatient discharges and emergency department discharges). Chicago, IL: American Medical Association; 2009.
2. National Quality Forum. Preferred practices and performance measures for measuring and reporting care coordination: a consensus report. Washington, DC: National Quality Forum; 2010.

Measure #59. Timely Transmission of Transition Record

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			□
Communicate			
<i>Interpersonal communication</i>			
<i>Information transfer</i>			□
Facilitate transitions			
<i>Across settings</i>			□
<i>As coordination needs change</i>			
Assess needs and goals			
Create a proactive plan of care			□
Monitor, follow up, and respond to change			□
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Timely Transmission of Transition Record

Purpose: To measure the percentage of patients, regardless of age, discharged from an inpatient facility to home or any other site of care, for whom a transition record was transmitted to the facility or primary physician or other health care professional designated for follow-up care within 24 hours of discharge.¹

Format/Data Source: This process measure requires administrative claims data and data collected from the medical record.¹

Date: Measure released in 2009.¹

Perspective: System Representative(s)

Measure Item Mapping:

This measure maps to the following domains: There are no individual measure items to map.

- **Establish accountability or negotiate responsibility**
- **Communicate**
 - Information transfer
 - *Across health care teams or settings*
- **Facilitate Transitions**
 - Across settings
- **Create a proactive plan of care**
- **Monitor, follow up, and respond to change**

Development and Testing: The measure was endorsed by NQF as part of their preferred practices and performance measures for measuring and reporting care coordination, released in September 2010.²

Link to Outcomes or Health System Characteristics: One study demonstrated a decreased risk of readmission when information on the index hospitalization is available during post-discharge physician visits.¹

Logic Model/Conceptual Framework: This measure incorporates elements from The Joint Commission's 2009 Hospital Accreditation Standards and a 2008 consensus policy statement from the American College of Physicians, the Society of General Internal Medicine, the Society of Hospital Medicine, the American Geriatrics Society, The American College of Emergency Physicians and the Society of Academic Emergency Medicine.¹

Country: United States

Past or Validated Applications*:

- **Patient Age:** Not Age Specific
- **Patient Condition:** General Population/Not Condition Specific
- **Setting:** Inpatient Facility, Primary Care Facility, Not Setting Specific

*Based on the sources listed below.

Notes:

- Detailed measure specifications are included in the Physician Consortium for Performance Improvement (PCPI) report.¹
- This measure is intended for use in conjunction with two other PCPI measures (Measure #57 Reconciled Medication List Received by Discharged Patients; and Measure #58, Transition Record with Specified Elements Received by Discharged Patients – Inpatient Discharges) as part of a bundled set. Each measure in the bundled set is intended to be scored separately.¹
- Because the NQF-endorsed preferred practices and performance measures for measuring and reporting care coordination were released shortly before completion of the *Atlas*, we were not able to contact the measure developers about any on-going measure development or testing. Additional information may become available in the future.

Sources:

1. American Board of Internal Medicine Foundation, American College of Physicians, Society of Hospital Medicine, Physician Consortium for Performance Improvement. Care Transitions Performance Measurement Set (Phase I: Inpatient discharges and emergency department discharges). Chicago, IL: American Medical Association; 2009.
2. National Quality Forum. Preferred practices and performance measures for measuring and reporting care coordination: a consensus report. Washington, DC: National Quality Forum; 2010.

Measure #60. Transition Record with Specified Elements Received by Discharged Patients (Emergency Department Discharges)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			□
Communicate			
<i>Interpersonal communication</i>			
<i>Information transfer</i>			□
Facilitate transitions			
<i>Across settings</i>			□
<i>As coordination needs change</i>			
Assess needs and goals			
Create a proactive plan of care			□
Monitor, follow up, and respond to change			□
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management			□
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Transition Record with Specified Elements Received by Discharged Patients (Emergency Department Discharges)

Purpose: To measure the percentage of patients, regardless of age, discharged from the emergency department (ED) to ambulatory care or home health care, or their caregiver(s), who received a transition record at the time of ED discharge including, at a minimum, all of the specified elements.¹

Format/Data Source: This process measure requires administrative claims data and data collected from the medical record.¹

Date: Measure released in 2009.¹

Perspective: System Representative(s)

Measure Item Mapping:

This measure maps to the following domains: There are no individual measure items to map.

- **Establish accountability or negotiate responsibility**
- **Communicate**
 - Information transfer
 - *Between health care professional(s) and patient/family*
- **Facilitate Transitions**
 - Across settings
- **Create a proactive plan of care**
- **Monitor, follow up, and respond to change**
- **Medication Management**

Development and Testing: The measure was endorsed by NQF as part of their preferred practices and performance measures for measuring and reporting care coordination, released in September 2010.²

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: This measure incorporates elements from The Joint Commission's 2009 Hospital Accreditation Standards and a 2008 consensus policy statement from the American College of Physicians, the Society of General Internal Medicine, the Society of Hospital Medicine, the American Geriatrics Society, The American College of Emergency Physicians and the Society of Academic Emergency Medicine.¹

Country: United States

Past or Validated Applications*:

- **Patient Age:** Not Age Specific
- **Patient Condition:** General Population/Not Condition Specific

- **Setting:** Emergency Care Facility, Primary Care Facility, Other Outpatient Specialty Care Facility, Home Health Care

*Based on the sources listed below.

Notes:

- Detailed measure specifications are included in the Physician Consortium for Performance Improvement (PCPI) report.¹
- Because the NQF-endorsed preferred practices and performance measures for measuring and reporting care coordination were released shortly before completion of the *Atlas*, we were not able to contact the measure developers about any on-going measure development or testing. Additional information may become available in the future.

Sources:

1. American Board of Internal Medicine Foundation, American College of Physicians, Society of Hospital Medicine, Physician Consortium for Performance Improvement. Care Transitions Performance Measurement Set (Phase I: Inpatient discharges and emergency department discharges). Chicago, IL: American Medical Association; 2009.
2. National Quality Forum. Preferred practices and performance measures for measuring and reporting care coordination: a consensus report. Washington, DC: National Quality Forum; 2010.

Measure #61. Melanoma Continuity of Care—Recall System

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			
<i>Interpersonal communication</i>			
<i>Information transfer</i>			
Facilitate transitions			
<i>Across settings</i>			
<i>As coordination needs change</i>			
Assess needs and goals			
Create a proactive plan of care			
Monitor, follow up, and respond to change			□
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Melanoma Continuity of Care—Recall System

Purpose: To measure the percentage of patients, regardless of age, with a current diagnosis of melanoma or a history of melanoma whose information was entered, at least once within a 12 month period, into a recall system that includes: a target date for the next complete physical skin exam and a process to follow up with patients who either did not make an appointment within the specified timeframe or who missed a scheduled appointment.¹

Format/Data Source: This process measure requires administrative claims data and data collected from the medical record.¹

Date: Measure released in 2007¹

Perspective: System Representative(s)

Measure Item Mapping:

This measure maps to the following domains. There are no individual measure items to map.

- **Monitor, follow-up, and respond to change**

Development and Testing: The measure was endorsed by NQF as part of their preferred practices and performance measures for measuring and reporting care coordination, released in September 2010.²

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: The measure is based on clinical guidelines from both the National Comprehensive Cancer Network (NCCN) and the British National Institute for Health and Clinical Excellence (NICE).¹

Country: United States

Past or Validated Applications*:

- **Patient Age:** Not Age Specific
- **Patient Condition:** Combined Chronic Conditions, Cancer/Oncology
- **Setting:** Not Setting Specific

*Based on the sources listed below and input from the measure developers.

Notes:

- Detailed measure specifications are included in the American Academy of Dermatology/Physician Consortium for Performance Improvement/National Committee for Quality Assurance Melanoma II Physician Performance Measurement Set.¹
- Because the NQF-endorsed preferred practices and performance measures for measuring and reporting care coordination were released shortly before completion of the *Atlas*, we were not able to contact the measure developers about any on-going measure development or testing. Additional information may become available in the future.

Sources:

1. American Academy of Dermatology, Physician Consortium for Performance Improvement, National Committee for Quality Assurance. Melanoma II Physician Performance Measurement Set. Chicago, IL, and Washington, DC: American Medical Association and National Committee for Quality Assurance; 2007.
2. National Quality Forum. Preferred practices and performance measures for measuring and reporting care coordination: a consensus report. Washington, DC: National Quality Forum; 2010.

Atlas Update: New Measure Additions

The profiles that follow represent new measures added to the updated version of the *Atlas*.

These measures are:

#	Measure Title
New Measures Related to Measures from Original <i>Atlas</i>*	
4.	Consumer Assessment of Healthcare Providers and Systems (CAHPS)
	d. Patient-Centered Medical Home (PCMH) Supplementary Survey Adult Version 2.0
	e. Patient-Centered Medical Home (PCMH) Supplementary Survey Child Version 1.1
41.	Ambulatory Care Experiences Survey (ACES)
	b. Primary Care Provider Ambulatory Care Experiences Survey (PCP ACES)
Measures added to the updated <i>Atlas</i>	
62.	Team Survey for Program of All-Inclusive Care for the Elderly (PACE)
63.	Medication Reconciliation for Ambulatory Care
64.	Promoting Healthy Development Survey PLUS – (PHDS-PLUS)
65.	Canadian Survey of Experiences with Primary Health Care Questionnaire
66.	Interpersonal Processes of Care Survey
67.	Brief 5 A's Patient Survey
68.	Patient Perceived Continuity of Care from Multiple Providers
69.	Relational and Management Continuity Survey in Patients with Multiple Long-Term Conditions
70.	Patient Perception of Integrated Care Survey (PPIC)
71.	Safety Net Medical Home Scale (SNMHS)
72.	Parents' Perceptions of Primary Care – (P3C)
73.	Primary Care Questionnaire for Complex Pediatric Patients
74.	Safety Net Medical Home Provider Experience Survey
75.	Rhode Island Physician Health Information Technology Survey
76.	The Joint Commission Patient-Centered Medical Home Self-Assessment Survey
77.	Communication with Referring Physicians Practice Improvement Module (CRP-PIM)
78.	Safe Transitions Community Physician Office Best Practice Measures
79.	National Survey of Physicians Organizations and the Management of Chronic Illness II (NSPO-2)
80.	Patient-Centered Medical Home Assessment (PCMH-A) Tool

*These measures appear near their parent measures, in the previous section of this chapter.

Measure #62. Team Survey for Program of All-Inclusive Care for the Elderly (PACE)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility		■	
Communicate		■	
<i>Interpersonal communication</i>			
<i>Information transfer</i>		□	
Facilitate transitions			
<i>Across settings</i>			
<i>As coordination needs change</i>			
Assess needs and goals			
Create a proactive plan of care		□	
Monitor, follow up, and respond to change			
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination		□	
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Team Survey for Program of All-Inclusive Care for the Elderly (PACE)

Purpose: To develop an instrument that will assess interdisciplinary team performance in long-term care settings as well as PACE.

Format/Data Source: Self-administered, confidential, mailed surveys in several languages were sent to all part-time or full-time employees of the twenty-six PACE programs.¹ Responses were based on a 5-point Likert scale for all items in Sections I and II.

Date: Measure published in 2004.¹

Perspective: Health Care Professional(s)

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 1A5, 1A7, 1D4, 2.12
- **Communicate:**
 - *Within teams of health care professionals:* 1C9, 1C12, 1C14
 - Information transfer:
 - *Within teams of health care professionals:* 1C8, 1C9
- **Create a proactive plan of care:** 1C13
- **Teamwork focused on coordination:** 1B5

Development and Testing: The instrument was pilot tested via 3 approaches: (1) questions were reviewed by an education specialist and a specialist in English-as-a-second-language to confirm appropriateness; (2) an expert panel provided feedback, and (3) the instrument was pilot tested among 84 aides in either a PACE program or a nursing home. All domains demonstrate reliability, and regression analyses determined sufficient construct validity. Cronbach's alpha coefficients supported internal consistency reliability.¹

Link to Outcomes or Health System Characteristics: Overall team performance had significant association with activities of daily living outcomes at 3 and 12 months, and improved urinary incontinence at 12 months. There was no significant association with survival.²

Logic Model/Conceptual Framework: The team survey for PACE stems from an adaptation of a model developed by Shortell and Rousseau to assess nurse-physician collaborative relationships within intensive care settings.³

Country: United States

Past or Validated Applications*:

- **Patient Age:** Adults, Older Adults
- **Patient Condition:** General Population/Not Condition Specific
- **Setting:** Primary Care Facility, Other Outpatient Specialty Care Facility

*Based on the sources listed below.

Notes:

- Instrument was provided by the corresponding author upon request (H. Temkin-Greener, personal communication, September 1, 2010).
- This instrument contains 81 items. Only Sections I and II were mapped. Section I contains 49 items; 9 of which were mapped. Section II contains 32 items; 1 of which was mapped.
- This measure instrument was adapted from the ICU Nurse-Physician Questionnaire.⁴
- The author has revised this instrument and used it in nursing homes. For more information, see measure 23.

Sources:

1. Temkin-Greener H, Gross D, Kunitz SJ, et al. Measuring interdisciplinary team performance in a long-term care setting. *Med Care* 2004; 42(5):472-81.
2. Mukamel DB, Temkin-Greener H, Delavan R, et al. Team performance and risk-adjusted health outcomes in the Program of All-Inclusive Care for the Elderly (PACE). *The Gerontologist* 2006; 46(2) 227-237.
3. Shortell S, Rousseau DM. Excerpted from *The Organization and Management of Intensive Care Units*. [pamphlet] 1989.
4. Shortell SM, Rousseau DM, Gillies RR, et al. Organizational Assessment in Intensive Care Units (ICUs): Construct Development, Reliability, and Validity of the ICU Nurse-Physician Questionnaire. *Med Care* 1991; 29:709-727.
5. Mukamel DB, Peterson DR, Temkin-Greener H, et al. Program characteristics and enrollees' outcomes in the Program of All-Inclusive Care for the Elderly (PACE). *The Milbank Quarterly* 2007; 85(3):499-531.

Measure #63. Medication Reconciliation for Ambulatory Care

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			□
Communicate			
<i>Interpersonal communication</i>			
<i>Information transfer</i>			□
Facilitate transitions			
<i>Across settings</i>			□
<i>As coordination needs change</i>			
Assess needs and goals			
Create a proactive plan of care			
Monitor, follow up, and respond to change			□
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management			□
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Medication Reconciliation for Ambulatory Care

Purpose: To measure the percentage of patients aged 65 years and older who were discharged from any inpatient facility (e.g., hospital, skilled nursing facility, or rehabilitation facility) and seen within 60 days of discharge in the office by the physician providing on-going care who had reconciliation of the discharge medications with the current medication list in the outpatient medical record documented.¹

Format/Data Source: This process requires administrative claims data and data collected from the medical record.¹

Date: Measure released in 2006.¹

Perspective: System Representative(s)

Measure Item Mapping:

This measure maps to the following domains. There are no individual measure items to map.

- **Communicate**
 - Information transfer
 - *Across health care teams or settings*
- **Facilitate transitions**
 - Across settings
- **Monitor, follow up, and respond to change**
- **Medication Management**

Development and Testing: None described in the sources identified.

Link to Outcomes or Health System Characteristics: One study indicated a relationship between hospital readmissions and the quality of discharge communication, although medication management was not determined to be the causal factor.^{2,3}

Logic Model/Conceptual Framework: None described in the sources identified.

Country: United States

Past or Validated Applications*:

- **Patient Age:** Adults, Older Adults
- **Patient Condition:** General Population/Not Condition Specific
- **Setting:** Primary Care Facility, Inpatient Care Facility

*Based on the sources listed below.

Notes:

- Detailed measure specifications are included in the Physician Consortium for Performance Improvement (PCPI) Geriatrics Physician Performance Measurement Set, which is available for download from the American Medical Association website.¹

- Current Procedural Terminology (CPT) service codes are indicated in the measure specifications within the PCPI Geriatrics Physician Performance Measurement Set.¹
- This measure is intended for use in ambulatory care settings only.¹
- An updated version of this measure is forthcoming at the time of this publication.

Sources:

1. American Geriatrics Society, Physician Consortium for Performance Improvement (PCPI), National Committee for Quality Assurance (NCQA). Geriatrics Physician Performance Measurement Set. Chicago, IL: American Medical Association; 2006. Available at: <http://www.ama-assn.org/apps/listserv/x-check/qmeasure.cgi?submit=PCPI>
2. William El and Filton F. General practitioner response to elderly patients discharged from hospital. *BMJ* 1990; 300:159-161.
3. Wenger NS, Young RT. Quality indicators of continuity and coordination of care for vulnerable elders. *JAGS* 2007; 55(S2):S285-S292.

Measure #64. Promoting Healthy Development Survey PLUS – (PHDS-PLUS)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility	□		
Communicate			
<i>Interpersonal communication</i>	■		
<i>Information transfer</i>			
Facilitate transitions			
<i>Across settings</i>	□		
<i>As coordination needs change</i>			
Assess needs and goals			
Create a proactive plan of care			
Monitor, follow up, and respond to change	□		
Support self-management goals	■		
Link to community resources	■		
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Promoting Healthy Development Survey PLUS – (PHDS-PLUS)

Purpose: To assess whether young children between 0-3 years (3 - 48 months of age) are receiving nationally recommended preventive and developmental services.¹

Format/Data Source: A 128-item telephone/interviewer-administered survey largely derived from the mail/self-administered Promoting Health Development Survey (PHDS). It takes 15-18 minutes to administer and provides a high-level summary of questions asked in the survey.¹ The core text of the survey consists of 19 sections, which include: (1) child information, (2) health care utilization, (3) access issues, (4) care coordination, (5) other health services, (6) anticipatory guidance and parental education, (7) developmental assessment, (8) follow up for children at risk for developmental/behavioral delays, (9) family-centered care, (10) health provider assessment of risks in the family, (11) health information, (12) helpfulness of care provided, (13) health of child: overall health status, (14) health of child: special health care needs, (15) child health characteristics, (16) personal doctor or nurse, (17) maternal health, (18) parenting behaviors, and (19) socio-demographic.

Date: Measure released in 2001.²

Perspective: Patient/Family

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 9.4
- **Communicate:**
 - Interpersonal communication:
 - *Between health care professional(s) and patient/family:* 6.1 (3-9 month old bracket); 6.1 (10-18 month old bracket); 6.1 (19-48 month old bracket); 6.15 (3-9 month old bracket); 6.18 (10-18 month old bracket); 6.15 (19-48 month old bracket)
- **Facilitate transitions:**
 - Across settings: 4.1a, 8.1
- **Monitor, follow up, and respond to change:** 8.1
- **Support self-management goals:** 6.1 (3-9 month old bracket); 6.1 (10-18 month old bracket); 6.1 (19-48 month old bracket)
- **Link to community resources:** 5.2 (3-9month old bracket); 6.15 (3-9 month old bracket); 6.18 (10-18 month old bracket); 6.15 (19-48 month old bracket)

Development and Testing: The PHDS was designed and tested by The Child and Adolescent Health Measurement Initiative (CAHMI) using a peer-reviewed measurement development process. A rigorous six-stage process was used to develop the PHDS, beginning with focus groups with families to identify the aspects of health care quality that are important to parents in the area of preventive care for their children. A literature review of Medline informed the materials that guided development. The instrument was then tested in 3 managed care organizations. Bivariate and multivariate analyses were conducted to assess the reliability,

validity and feasibility of the PHDS.² To date, more than 45,000 surveys have been collected by 10 Medicaid agencies, 4 health plans, 38 pediatric practices and nationally through the National Survey of Early Childhood Health (NSECH).¹ The PHDS has been endorsed by the National Quality Forum as a valid measure for system, plan and provider-level assessment of patients' experiences with preventive and developmental health care.¹ Psychometric analyses of the PHDS quality measures scales have demonstrated strong construct validity and internal consistency (Cronbach's alphas ranged from 0.63 to 0.88). Concurrent validity was also tested. Factor analysis demonstrated strong factor structure within the PHDS.²

Link to Outcomes or Health System Characteristics: Parents who received answers to their questions from medical providers indicated higher confidence in related parenting activities with an odds ratio (OR) of 5.9 (95% CI 3.4-10.2).²

Logic Model/Conceptual Framework: A conceptual framework was developed and investigated in regards to relevance for each measure.¹

Country: United States

Past or Validated Applications*:

- **Patient Age:** Children
- **Patient Condition:** Combined Chronic Conditions, Children with Special Health Care Needs, General Population/Not Condition Specific
- **Setting:** Primary Care Setting

*Based on the sources listed below and input from the measure developers.

Notes:

- All instrument items are located online.¹
- This instrument contains 19 sections, of which 5 were mapped.
 - There are 128 items in this instrument; 10 were mapped.
- Section 6 of the instrument has three separate sections with overlapping questions based upon the age of the child. The categories were mapped by the age brackets: 3-9 months, 10-18 months and 19-48 months.
- The PHDS-PLUS was enhanced with additional items about the child and parent's health, health care utilization and other related topics, from the original PHDS survey. The PHDS has been updated to reflect the most recent edition of the Bright Futures Guidelines (S. Stumbo, personal communication, July 26, 2011) and is available in English and Spanish versions.¹
- The instrument is also available in a reduced-item version (ProPHDS). Research with health care providers has demonstrated that for in-office survey administration to be feasible, the survey must take no longer than five minutes.¹
- This instrument is related to the National Survey for Children's Health (NSCH) and the National Survey for Children with Special Health Care Needs (CSHCN). For more information about additional measures by The Child and Adolescent Health Measurement Initiative (CAHMI), see Measures 14 and 51.

- The Online PHDS Toolkit offers customization of survey administration materials for providers and health systems. The information can be stored to provide automated feedback reports, identifying quality improvement tips to meet needs.
- Parents who complete the survey have access to links to educational resources and receive a customized feedback report that provides guidance on questions to ask at their next well child visit. (S. Stumbo, personal communication, July 26, 2011).

Sources:

1. Preventive Services for Young Children Overview: Promoting Healthy Development Survey Web site. Available at: <http://www.cahmi.org/> Accessed: 15 July 2011.
2. Bethell C, Reuland C, Schor E. Assessing health system provision of well-child care: The Promoting Healthy Development Survey. *Pediatrics* 2001; 107(5):1084-94.
3. Bethell CD, Carter K, Latzke B, et al. Toward Appropriate, Meaningful and Valid Measurement of Differences in Health Care Quality Across Culturally Diverse Populations Using Consumer Reported Measures of Health Care Quality. The Commonwealth Fund; March 2003.
4. Bethell C, Peck C, Abrams M, et al., Partnering with Parents to Promote the Healthy Development of Young Children Enrolled in Medicaid. The Commonwealth Fund; September 2002.
5. Bethell CD, Peck Reuland C, Halfon, N, et al. Measuring the quality of preventive and developmental services for young children: National estimates and patterns of clinicians' performance. *Pediatrics*; June 2004.
6. Bethell C, Reuland C. Guidelines for pediatric office-based implementation of the Promoting Healthy Development Survey. The Commonwealth Fund; 2004.

Measure #65. Canadian Survey of Experiences with Primary Health Care Questionnaire

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate	■		
<i>Interpersonal communication</i>			
<i>Information transfer</i>	■		
Facilitate transitions			
<i>Across settings</i>	□		
<i>As coordination needs change</i>			
Assess needs and goals	■		
Create a proactive plan of care	□		
Monitor, follow up, and respond to change	□		
Support self-management goals	□		
Link to community resources	□		
Align resources with patient and population needs	□		
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination	□		
Health care home			
Care management			
Medication management	□		
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Canadian Survey of Experiences with Primary Health Care Questionnaire (CSEPHC)

Purpose: To measure Canadians' experiences with health care, specifically, experiences with various types of doctors and clinics, access to different types of health care including emergency room and prescription medication use.

Format/Data Source: A 181-item telephone-administered survey. The survey assess 10 areas of health, health care utilization, and experiences with care: (1) health status, (2) primary health care types, (3) health care use, (4) health care utilization, (5) experiences with primary health care providers, (6) access to health care, (7) emergency room use, (8) prescription medication use, (9) chronic conditions, and (10) patient activation.¹

Date: Measure released in 2008.¹

Perspective: Patient/Family

Measure Item Mapping:

- **Communicate:**
 - *Between health care professional(s) and patient/family:* EP_Q01, CC_Q08
 - *Participants not specified:* EP_Q05
 - Information transfer:
 - *Across health care teams or settings:* HZ_Q02, HZ_Q08B, EP_Q04, EP_Q06
- **Facilitate transitions:**
 - Across settings: HU_Q05
- **Assess needs and goals:** EP_Q03, CC_Q03, CC_Q09
- **Create a proactive plan of care:** CC_Q05, CC_Q09
- **Monitor, follow up, and respond to change:** HZ_Q02, MU_Q03
- **Support self-management goals:** CC_Q04, CC_Q05
- **Link to community resources:** CC_Q07
- **Align resources with patient and population needs:** CC_Q06
- **Teamwork focused on coordination:** HU_Q05
- **Medication Management:** MU_Q03

Development and Testing: The survey was developed by the Health Council of Canada and Canadian Institute for Health Information (CIHI) based on CIHI health indicators. The questionnaire was iteratively refined through expert review and field testing in the general population of Canada, as well as in patients with chronic conditions.¹

Link to Outcomes or Health System Characteristics: None described in the source identified.

Logic Model/Conceptual Framework: None described in the source identified.

Country: Canada

Past or Validated Applications*:

- **Patient Age:** Not Age Specific
- **Patient Condition:** General Population or Not Condition Specific
- **Setting:** Primary Care Facility, Inpatient Care Facility, Other Outpatient Specialty, Emergency Care Facility

*Based on the sources listed below^{1,2} and input from the measure developers.

Notes:

- English instrument items are located online.¹
- This instrument contains 181 items, of which 16 were mapped.
- A French language version is available.

Sources:

1. Canadian Survey of Experiences with Primary Health Care. Statistics Canada. Available at: <http://www23.statcan.gc.ca/imdb/p2SV.pl?Function=getSurvey&SDDS=5138&lang=en&db=imdb&adm=8&dis=2>. Accessed: 2 June 2013.
2. Jesmin S, Thind A, Sarma S. Does team-based primary health care improve patients' perception of outcomes? Evidence from the 2007-08 Canadian Survey of Experiences with Primary Health. *Health Policy* 2012;105(1):71-83.

Measure #66. Interpersonal Processes of Care Survey

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate	■		
<i>Interpersonal communication</i>	■		
<i>Information transfer</i>			
Facilitate transitions			
<i>Across settings</i>			
<i>As coordination needs change</i>			
Assess needs and goals	■		
Create a proactive plan of care	□		
Monitor, follow up, and respond to change			
Support self-management goals	□		
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management	□		
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Interpersonal Processes of Care Survey

Purpose: To evaluate patient-reported, multidimensional physician/patient interpersonal processes of care, in a manner appropriate for patients from diverse racial or ethnic groups.

Format/Data Source: A 29-item, telephone-based survey asking patients to report whether their doctor had engaged in particular communication and patient-centered decisionmaking activities, as well as particular aspects of their doctor's interpersonal style over the preceding 12 months. The measure assesses three main aspects of interpersonal processes of care: (1) communication, (2) decisionmaking, and (3) interpersonal style. Survey administration takes approximately 30 minutes. Responses are on a five-point scale, with choices corresponding to never, rarely, sometimes, usually, and always.¹

Date: Measure released in 2007.¹

Perspective: Patient/Family

Measure Item Mapping:

- **Communicate:**
 - *Between health care professional(s) and patient/family:* 6, 7, 16
 - Interpersonal communication:
 - *Between health care professional(s) and patient/family:* 9, 10, 11, 12
- **Assess needs and goals:** 6, 7, 14
- **Create a proactive plan of care:** 15, 16
- **Support self-management goals:** 13
- **Medication Management:** 11, 12

Development and Testing: Six of the 7 scales met the conventional standard of reliability score >0.70; the lack of clarity (in communication) scale had a borderline reliability score of 0.65. Within-group reliabilities were also high for all four patient groups in which the scales were tested, with a range of 0.65-0.91. The items and instructions were rated at an 8th grade reading level, with the 18-item short form rated at a 5th grade level. Scales were derived through iterative factor analysis.¹

Link to Outcomes or Health System Characteristics: None described in the source identified.

Logic Model/Conceptual Framework: None described in the source identified.

Country: United States

Past or Validated Applications*:

- **Patient Age:** Adults
- **Patient Condition:** Not Condition Specific
- **Setting:** Primary Care Facility

*Based on the source listed below.

Notes:

- All instrument items are located in table 5 of the source article.¹
- This instrument contains 29 items, of which 10 were mapped.
- A short-form version of this survey containing 18 items is also available.¹
- Spanish versions of both forms of the survey are also available.¹
- This survey is designed to be appropriate for diverse racial and ethnic groups, including African Americans, English- and Spanish-speaking Latinos, and non-Latino whites.¹

Sources:

1. Stewart AL, Napoles-Springer AM, Gregorich SE, et al. Interpersonal processes of care survey: patient-reported measures for diverse groups. *Health Serv Res* 2007;42(3 Pt 1):1235-56.

Measure #67. Brief 5 A's Patient Survey

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			
<i>Interpersonal communication</i>	□		
<i>Information transfer</i>	□		
Facilitate transitions			
<i>Across settings</i>			
<i>As coordination needs change</i>			
Assess needs and goals	□		
Create a proactive plan of care	□		
Monitor, follow up, and respond to change	□		
Support self-management goals	■		
Link to community resources	□		
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Brief 5 A's Patient Survey

Purpose: To evaluate patients' experiences in receiving support for managing their health.

Format/Data Source: A 10-item survey asking patients whether their health care team has performed particular self-management support activities. Available response choices are yes, no and don't know.¹

Date: Measure released in 2006.¹

Perspective: Patient/Family

Measure Item Mapping:

- **Communicate:**
 - Interpersonal communication:
 - *Between health care professional(s) and patient/family:* 1
 - Information transfer:
 - *Between health care professional(s) and patient/family:* 2
- **Assess needs and goals:** 5, 6
- **Create a proactive plan of care:** 7, 8
- **Monitor, follow up, and respond to change:** 10
- **Support self-management goals:** 1, 2, 3, 4, 5, 6, 7, 8
- **Link to community resources:** 9

Development and Testing: None described in the sources identified.

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: This survey is based on the "5As" (Assess, Advise, Agree, Assist, Arrange) model of behavior change counseling, which has been applied to self-management support for patients with chronic conditions.^{1,2}

Country: United States

Past or Validated Applications*:

- **Patient Age:** Not Age Specific
- **Patient Condition:** Not Condition Specific
- **Setting:** Not Setting Specific

*Based on the source listed below.

Notes:

- All instrument items are located in Figure 3 of the source article.¹
- This instrument contains 10 items, of which 10 were mapped.

Sources:

1. Glasgow RE, Emont S, Miller DC. Assessing delivery of the five 'As' for patient-centered counseling. *Health Promot Int* 2006;21(3):245-55.
2. Glasgow RE, Goldstein MG, Ockene JK, et al. Translating what we have learned into practice. Principles and hypotheses for interventions addressing multiple behaviors in primary care. *Am J Prev Med* 2004;27(2 Suppl):88-101.

Measure #68. Patient Perceived Continuity of Care from Multiple Providers

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility	■		
Communicate	■		
<i>Interpersonal communication</i>	■		
<i>Information transfer</i>	■		
Facilitate transitions			
<i>Across settings</i>	■		
<i>As coordination needs change</i>	□		
Assess needs and goals	■		
Create a proactive plan of care	■		
Monitor, follow up, and respond to change	□		
Support self-management goals	■		
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination	■		
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Patient Perceived Continuity of Care from Multiple Providers

Purpose: To measure management continuity from the perspective of patients with health problems who regularly see more than one clinician.

Format/Data Source: A 53-item, paper-based survey asking patients to report their experiences with continuity of care. Questions focus on assessing the roles of the clinicians as care coordinators, with a total of 8 constructs across 9 subscales. Three subscales relate to the principal clinician and cover management and relational continuity (coordinator role, comprehensive knowledge of patient, confidence and partnership). Four subscales are related to multiple clinicians and address team relational continuity and problems with coordination and gaps in information transfer (confidence in team, role clarity and coordination [2 subscales], information gap between clinicians). Two subscales pertain to the patient's partnership in care (evidence of a care plan, self-management information provided). Response choices are on a 5-point Likert-type scale for most questions, with a 3-point scale for some.¹

Date: Measure released in 2012.¹

Perspective: Patient/Family

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 11, 17, 19, 37, 38, 39, 41f, 41g, 41k
- **Communicate:**
 - *Between health care professional(s) and patient/family:* 3, 4, 5
 - *Within teams of health care professionals:* 9, 17, 41h, 41k
 - *Across health care teams or settings:* 13, 17, 41h, 41k
 - Interpersonal communication:
 - *Between health care professional(s) and patient/family:* 16, 20, 21, 22, 23, 24, 25
 - *Across health care teams or settings:* 15
 - Information transfer:
 - *Between health care professional(s) and patient/family:* 32, 33, 34, 35
 - *Across health care teams or settings:* 27, 28, 29, 31, 41e
- **Facilitate transitions:**
 - Across settings: 14, 16, 17, 19, 23, 27, 28, 29, 31, 41k
 - As coordination needs change: 41i
- **Assess needs and goals:** 3, 4, 5, 12, 24, 37
- **Create a proactive plan of care:** 19, 20, 21, 22, 23, 24, 41i
- **Monitor, follow up, and respond to change:** 11, 41j
- **Support self-management goals:** 21, 25, 32, 33, 34, 35, 41i
- **Teamwork focused on coordination:** 9, 18, 19, 36

Development and Testing: Measure items were developed based on themes from 23 existing instruments measuring patient experience with care from various clinicians. The measure was validated with patients ages 25 to 75 years old. Item-scale correlations generally indicated high

consistency within the subscales, with an internal reliability that was higher than the generally accepted score of 0.70; the role clarity and coordination within the clinic subscale had a borderline reliability score of 0.66. This somewhat lower value reflected the small number of respondents consulting various clinicians in their regular clinic in the last 6 months. Factor analysis showed that all items loaded within the expected patterns. Odds ratios of occurrence of indicators of problem continuity demonstrated that all but one of the subscale constructs were protective against discontinuity of care (OR 0.16 to 0.67). One of the subscales indicated an increased risk of discontinuity, inappropriate ED use, and medical errors (OR 2.67 to 18.05).¹

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: None described in the source identified.

Country: United States

Past or Validated Applications*:

- **Patient Age:** Adults
- **Patient Condition:** Not Condition Specific
- **Setting:** Primary Care Facility, Other Outpatient Specialty Care Facility

*Based on the source listed below and input from the measure developer.

Notes:

- All instrument items are located in an online supplementary appendix associated with the main source article.¹
- This instrument contains 53 items, of which 39 were mapped.
- A French version of the survey is also available.¹

Sources:

1. Haggerty JL, Roberge D, Freeman GK, et al. Validation of a generic measure of continuity of care: when patients encounter several clinicians. *Ann Fam Med* 2012;10(5):443-51.

Measure #69. Relational and Management Continuity Survey in Patients with Multiple Long-Term Conditions

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility	■		
Communicate			
<i>Interpersonal communication</i>	□		
<i>Information transfer</i>	■		
Facilitate transitions			
<i>Across settings</i>			
<i>As coordination needs change</i>			
Assess needs and goals	□		
Create a proactive plan of care	□		
Monitor, follow up, and respond to change	□		
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination	□		
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Relational and Management Continuity Survey in Patients with Multiple Long-Term Conditions

Purpose: To quantify problems of relational and management continuity in patients with multiple long-term conditions.

Format/Data Source: A 25-item self-administered survey. Item responses use a 4-point Likert-type scale indicating frequency of experiencing varies kinds of management and relational continuity. The survey contains 4 sections: (1) utilization of services, (2) management continuity, (3) relational continuity, and (4) access, flexibility, and satisfaction. Scores calculated for each of two factors (management continuity, relational continuity) indicate the number of difficulties experienced by patients for that type of continuity.¹

Date: Measure released in 2011.¹

Perspective: Patient/Family

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 30, 31, 36
 - Interpersonal communication:
 - *Between health care professional(s) and patient/family:* 11
 - *Within teams of health care professionals:* 30
 - Information transfer:
 - *Across health care teams or settings:* 25, 26, 27, 28, 29
- **Assess needs and goals:** 11, 13
- **Create a proactive plan of care:** 31
- **Monitor, follow up, and respond to change:** 7
- **Teamwork focused on coordination:** 30, 37

Development and Testing: Psychometric testing in a sample of 1,125 patients age 60 and older from 15 general practices in the U.K. demonstrated good reliability and validity. Confirmatory factor analysis revealed that survey items cluster into two factors: management continuity (7 items, Cronbach's alpha 0.884) and relational continuity (9 items, Cronbach's alpha 0.830). Other items showed poor results and were omitted from analyses. Patients with a greater number of self-reported chronic conditions were more likely to experience three or more difficulties in management continuity ($p < 0.05$) compared to those with fewer chronic conditions, controlling for age, sex, clinic, and health care utilization. In contrast, difficulties in relational continuity were not associated with chronic disease burden. Patients with greater numbers of general practice visits experienced fewer relational continuity difficulties.¹

Link to Outcomes or Health System Characteristics: Hospital outpatient consultations (specialty visits) and emergency department visits were strongly associated with greater difficulties in management continuity but not relational continuity among older adults in U.K. general practices, when controlling for age, sex, clinic, and number of chronic conditions. Patients with poorer self-rated health also reported experiencing greater difficulties in both

management and relational continuity in adjusted analyses. Practice size and number of physicians in a practice were not associated with either management or relational continuity. Difficulties in management continuity were greater at clinics where patients experienced lower relational continuity ($p < 0.02$).¹

Logic Model/Conceptual Framework: This measure emerges from conceptual work on differing aspects of continuity of care.^{1,2}

Country: UK

Past or Validated Applications*:

- **Patient Age:** Adults, Older Adults
- **Patient Condition:** Combined Chronic Conditions, General Chronic Conditions, Multiple Chronic Conditions
- **Setting:** Primary Care Facilities

*Based on the sources listed below and input from the measure developers.

Notes:

- All instrument items are located in Table 2 of the source article.¹
- This instrument contains 25 items, of which 12 were mapped.

Sources:

1. Gulliford M, Cowie L, Morgan M. Relational and Management Continuity Survey in Patients with Multiple Long-Term Conditions. *Journal of Health Services & Research Policy* 2011;16(2):67-74.
2. Gulliford M, Naithani S, Morgan M. What is 'continuity of care'? *Journal of Health Services & Research Policy* 2006;11(4):248-50.

Measure #70. Patient Perception of Integrated Care Survey (PPIC)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate	■		
<i>Interpersonal communication</i>	□		
<i>Information transfer</i>	■		
Facilitate transitions			
<i>Across settings</i>	□		
<i>As coordination needs change</i>			
Assess needs and goals	■		
Create a proactive plan of care			
Monitor, follow up, and respond to change	■		
Support self-management goals	■		
Link to community resources	□		
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination	■		
Health care home			
Care management			
Medication management	□		
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Patient Perception of Integrated Care Survey (PPIC)

Purpose: To measure the integration of patient care as experienced by patients.

Format/Data Source: A 62-item paper-based survey using yes/no and 4-point Likert-type scale responses. The measure assesses six factors of integrated care as experienced by patients: (1) Information flow to your doctor, (2) Information flow to your specialist, (3) Information flow to other providers in your doctor's office, (4) Coordination with home and community resources, (5) Post-visit information flow to the patient, and (6) Patient-centeredness.¹

Date: Measure released in 2010.¹

Perspective: Patient/Family

Measure Item Mapping:

- **Communicate:**
 - *Within teams of health care professionals:* 10, 26, 28
 - *Across health care teams or settings:* 41, 42
 - Interpersonal communication:
 - *Between health care professional(s) and patient/family:* 27
 - *Within teams of health care professionals:* 27
 - Information transfer:
 - *Between health care professional(s) and patient/family:* 18, 20
 - *Across health care teams or settings:* 46, 47, 52
- **Facilitate transitions:**
 - Across settings: 49, 50
- **Assess needs and goals:** 22, 23, 24, 38
- **Monitor, follow up, and respond to change:** 9, 18, 20, 35, 49
- **Support self-management goals:** 29, 30, 39, 50
- **Link to community resources:** 39
- **Teamwork focused on coordination:** 26, 27, 28
- **Medication Management:** 44

Development and Testing: Pilot testing in 1,289 patients with multiple chronic conditions from 13 primary care clinics in one Massachusetts-based delivery system demonstrated moderate to good internal reliability for the six factors identified through exploratory factor analysis (range of Cronbach's alphas 0.62 to 0.80), as well as good model fit.¹ A refined instrument was tested with 3,000 elderly patients with multiple chronic conditions from six physician practices within a different multispecialty physician group in Massachusetts. Additional measure testing and refinement of both the survey and the psychometric models is on-going, including two large, national samples of patients (S. Singer, personal communication, September 23, 2013).

Link to Outcomes or Health System Characteristics: None described in the source identified.

Logic Model/Conceptual Framework: Based on a framework for measuring integrated patient care.²

Country: United States

Past or Validated Applications*:

- **Patient Age:** Not Age Specific
- **Patient Condition:** Combined Chronic Conditions, General Chronic Conditions, Multiple Chronic Conditions.
- **Setting:** Not Setting Specific

*Based on the sources listed below and input from the measure developers.

Notes:

- The version of the instrument mapped in this profile was provided by the measure developer (S. Singer, personal communication, April 11, 2013).
- The version of the instrument mapped in this profile contains 62 items, of which 23 were mapped.
- Spanish and Portuguese versions of this instrument are also available.¹
- Further information about this measure and related research is available online.³

Sources:

1. Singer SJ, Friedberg MW, Kiang MV, et al. Development and preliminary validation of the Patient Perceptions of Integrated Care survey. *Med Care Res Rev* 2013;70(2):143-64.
2. Singer SJ, Burgers J, Friedberg M, et al. Defining and measuring integrated patient care: promoting the next frontier in health care delivery. *Medical Care Research & Review* 2011;68(1):112-27.
3. Patient Perceptions of Integrated Care. Available at: <http://www.IntegratedPatientCare.org>. Accessed: September 24, 2013.

Measure #71. Safety Net Medical Home Scale (SNMHS)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			□
Communicate			□
<i>Interpersonal communication</i>			□
<i>Information transfer</i>			■
Facilitate transitions			
<i>Across settings</i>			■
<i>As coordination needs change</i>			
Assess needs and goals			
Create a proactive plan of care			
Monitor, follow up, and respond to change			■
Support self-management goals			□
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			■*
Care management			
Medication management			□
Health IT-enabled coordination			■

Legend:

■ = ≥ 3 corresponding measure items

□ = 1-2 corresponding measure items

*Indicates that the measure as a whole focuses on the Health care home model

Safety Net Medical Home Scale (SNMHS)

Purpose: To summarize health center capability to provide a patient-centered medical home.

Format/Data Source: An 88-item survey completed by safety net clinics (i.e., federally qualified health centers) regarding their adoption and adherence to the principles of a patient-centered medical home. Survey items are grouped together into six validated sub-scales: (1) access and communication, (2) patient tracking and registry, (3) care management, (4) test and referral tracking, (5) quality improvement, and (6) external coordination. The total scale score is calculated between 0 (poor) to 100 (best), by averaging together the six sub-scales.¹

Date: Measure released in 2009.¹

Perspective: System Representative(s)

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 17a
- **Communicate:**
 - *Across health care teams or settings:* 22a, 22b
 - Interpersonal communication:
 - *Between health care professional(s) and patient/family:* 16e, 17a
 - Information transfer:
 - *Between health care professional(s) and patient/family:* 13c
 - *Across health care teams or settings:* 11b, 11c, 11d, 11e, 21a, 21b, 21c, 22c, 23
- **Facilitate transitions:**
 - Across settings: 17d, 19a, 19b, 19c, 20a, 20b, 21a, 21b, 21c, 22a, 22b, 22c, 23
- **Monitor, follow up, and respond to change:** 13a, 13d, 17a, 21c
- **Support self-management goals:** 17c
- **Health care home:** 11b, 11c, 11d, 11e, 13a, 13c, 13d, 16e, 17a, 17c, 17d, 19a, 19b, 19c, 20a, 20b, 21a, 21b, 21c, 22a, 22b, 22c, 23*
- **Medication Management:** 11e, 17a
- **Health IT-enabled coordination:** 11b, 11c, 11d, 11e, 13c, 13d

*The instrument as a whole focuses on the Health care home model. Only those items that map to at least one other care coordination domain are listed here.

Development and Testing: In a study of 65 safety net practices across five states, internal consistency reliability was high (Cronbach's alpha = 0.84). Convergent validity was assessed through comparisons with the two other measures of advanced primary care practice. The SNMHS was moderately correlated with both the Assessment of Chronic Illness Care ($r=0.64$, $p < 0.001$) and Patient-Centered Medical Home – Assessment Tool ($r=0.56$, $p < 0.001$).¹

Link to Outcomes or Health System Characteristics: Linear regression models showed that clinics with a greater number of providers (>8 vs. <4 full-time equivalents) and that participated in financial incentive programs were positively associated with the total Safety Net Medical Home scale score ($p < 0.05$).¹

Logic Model/Conceptual Framework: The measure is based in part on the NQF-Endorsed Definition and Framework for Measuring Care Coordination.²

Country: United States

Past or Validated Applications*:

- **Patient Age:** Not Applicable
- **Patient Condition:** Not Applicable
- **Setting:** Primary Care Facility, Other Outpatient Specialty Care Facility, Inpatient, Emergency Department

*Based on the sources listed below and input from the measure developers.

Notes:

- All instrument items are located online.³
- This instrument contains 88 items, of which 23 were mapped.

Sources:

1. Birnberg JM, Drum ML, Huang ES, et al. Development of a safety net medical home scale for clinics. *J Gen Intern Med* 2011;26(12):1418-25.
2. National Quality Forum. National Quality Forum-endorsed definition and framework for measuring care coordination. Washington, D.C.: Forum NQ; 2006.
3. The Commonwealth Fund 2009 Survey of Health Clinics Involved in the Safety Net Medical Home Initiative The Commonwealth Fund. Available at: http://www.commonwealthfund.org/Innovations/Tools/2011/~/_media/Files/Innovations/CMWF_SurveyFinal722.pdf. Accessed: August 30 2013.

Measure #72. Parents' Perceptions of Primary Care – (P3C)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate	■		
<i>Interpersonal communication</i>	□		
<i>Information transfer</i>			
Facilitate transitions			
<i>Across settings</i>	□		
<i>As coordination needs change</i>			
Assess needs and goals			
Create a proactive plan of care			
Monitor, follow up, and respond to change	□		
Support self-management goals	□		
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Parents' Perceptions of Primary Care – (P3C)

Purpose: To measure parents' of experiences with their child's primary care for use as an indicator of pediatric primary care quality.

Format/Data Source: A 23-item survey completed by parents. Most questions are answered via a 5-point Likert scale indicating frequency of experience (never, sometimes, often, almost always, always). The survey focuses on 6 factors of high-quality pediatric care: (1) longitudinal continuity, (2) access, (3) communication, (4) contextual knowledge, (5) comprehensiveness, and (6) coordination of care. Higher scores on these factors indicate better care.¹

Date: Measure released in 2001.¹

Perspective: Patient/Family

Measure Item Mapping:

- **Communicate:**
 - *Between health care professional(s) and patient/family:* 6, 7, 8, 9, 14, 15, 16, 17
 - *Across health care teams or settings:* 5, 20, 21
 - Interpersonal communication:
 - *Between health care professional(s) and patient/family:* 10, 11, 12, 13
- **Facilitate transitions:**
 - Across settings: 18
- **Monitor, follow up, and respond to change:** 19
- **Support self-management goals:** 9, 14, 15, 16, 17

Development and Testing: The measure was piloted with 36 parents, who also provided feedback and suggestions, then administered to 3371 parents of students from 18 elementary schools (Kindergarten through 6th grade) from in a large, urban school district. Psychometric analyses demonstrated acceptable internal consistency for the measure total score (Cronbach's alpha 0.95) and for each of the 6 subscales (Cronbach's alphas ranged from 0.77 to 0.92). Factor analysis supported validity of the six subscales, each aligning with one of the factors hypothesized to be important for high-quality pediatric primary care. As expected, bivariate analyses showed that the mean total score on the measure varied significantly between three groups of parents expected to experience different quality of pediatric primary care: children with and without health insurance (those with insurance scored higher), parents completing the survey in English vs. other languages (those completing the measure in English scored higher), and children with a personal doctor (those with a personal doctor scored higher) ($p < 0.05$ for all comparisons). Mean scores differed significantly for each of the 6 subscale scores as well using the same set of comparisons ($p < 0.05$ for all comparisons).¹

Link to Outcomes or Health System Characteristics: In bivariate analyses, children experiencing higher quality primary care, as measured by the P3C instrument, also had higher reported quality of life as measured through the validated PedsQL instrument ($p < 0.01$).¹

Logic Model/Conceptual Framework: The measure is based on the Institute of Medicine's definition of primary care.²

Country: United States

Past or Validated Applications*:

- **Patient Age:** Children
- **Patient Condition:** General Population or Not Condition Specific
- **Setting:** Primary Care Facility

*Based on the sources listed below and input from the measure developers.

Notes:

- All instrument items are located in the appendix of the source article.¹
- This instrument contains 23 items, of which 17 were mapped.
- Translations are available in Spanish, Vietnamese, and Tagalog.¹

Sources:

1. Seid M, Varni JW, Bermudez LO, et al. Parents' Perceptions of Primary Care: measuring parents' experiences of pediatric primary care quality. *Pediatrics* 2001;108(2):264-70.
2. Donaldson M, Yordy K, Lohr K, et al. *Primary Care: America's Health in a New Era*. Washington, DC: National Academy Press; 1996.

Measure #73. Primary Care Questionnaire for Complex Pediatric Patients

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility	<input type="checkbox"/>		<input type="checkbox"/>
Communicate	<input type="checkbox"/>		<input checked="" type="checkbox"/>
<i>Interpersonal communication</i>			
<i>Information transfer</i>			<input type="checkbox"/>
Facilitate transitions			
<i>Across settings</i>	<input type="checkbox"/>		<input type="checkbox"/>
<i>As coordination needs change</i>			<input type="checkbox"/>
Assess needs and goals	<input type="checkbox"/>		<input type="checkbox"/>
Create a proactive plan of care			<input type="checkbox"/>
Monitor, follow up, and respond to change			<input type="checkbox"/>
Support self-management goals			<input type="checkbox"/>
Link to community resources	<input type="checkbox"/>		<input type="checkbox"/>
Align resources with patient and population needs	<input type="checkbox"/>		<input type="checkbox"/>
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination	<input type="checkbox"/>		
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			<input type="checkbox"/>

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Primary Care Questionnaire for Complex Pediatric Patients

Purpose: To assess quality of care for children with complex medical conditions with respect to the patient-centered medical home framework.

Format/Data Source: This set of 35 indicators assesses quality for five domains of care for complex pediatric patients: (1) primary care – general, (2) patient/family-centered care, (3) chronic care, (4) coordination of care, and (5) transition of care. The indicators use data from a variety of sources, including the medical record (17 indicators), patient surveys (10 indicators), and practice-based surveys (8 indicators).¹ Indicators using patient survey data are primarily based on the Consumer Assessment of Healthcare Providers and Systems (CAHPS) instruments (A.Y. Chen, personal communication, May 13, 2013).¹

Date: Measure released in 2012.¹

Perspective: Patient/Family, System Representative(s)

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 28, 29, 35
- **Communicate:**
 - *Between health care professional(s) and patient/family:* 4, 15, 17, 18, 19
 - Information transfer: 2
 - *Between health care professional(s) and patient/family:* 2
- **Facilitate transitions:**
 - Across settings: 25, 27
 - As coordination needs change: 34, 35
- **Assess needs and goals:** 16, 18
- **Create a proactive plan of care:** 23
- **Monitor, follow up, and respond to change:** 24
- **Support self-management goals:** 24
- **Link to community resources:** 20, 33
- **Align resources with patient and population needs:** 21, 22
- **Teamwork focused on coordination:** 27
- **Health IT-enabled coordination:** 5

Development and Testing: A national expert panel, using the RAND/University of California Los Angeles Appropriateness Method, selected the final set of 35 quality measures from among 74 candidates.¹

Link to Outcomes or Health System Characteristics: None described in the source identified.

Logic Model/Conceptual Framework: The American Academy of Pediatrics Patient-Centered Medical Home model.²

Country: United States

Past or Validated Applications*:

- **Patient Age:** Children
- **Patient Condition:** Combined Chronic Conditions, Children with Special Health Care Needs
- **Setting:** Primary Care Facility

*Based on the source listed below and input from the measure developers.

Notes:

- For the purposes of mapping to coordination domains in this profile, items were numbered consecutively in the order in which they appear in Table 2 of the source article.¹
- This instrument contains 35 quality indicators, of which 20 were mapped.
- Additional information for some indicators is forthcoming in the National Quality Measures Clearinghouse (A.Y. Chen, personal communication, May 13, 2013).

Source:

1. Chen AY, Schragger SM, Mangione-Smith R. Quality measures for primary care of complex pediatric patients. *Pediatrics* 2012;129(3):433-45.
2. Medical Home Initiatives for Children With Special Needs Project Advisory Committee. American Academy of Pediatrics. The medical home. *Pediatrics* 2002;110(1 Pt 1):184-6.

Measure #74. Safety Net Medical Home Provider Experience Survey

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility		□	
Communicate		■	
<i>Interpersonal communication</i>		■	
<i>Information transfer</i>			
Facilitate transitions			
<i>Across settings</i>		■	
<i>As coordination needs change</i>			
Assess needs and goals		□	
Create a proactive plan of care			
Monitor, follow up, and respond to change		□	
Support self-management goals		□	
Link to community resources		□	
Align resources with patient and population needs		□	
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination		□	
Health care home		■*	
Care management			
Medication management			
Health IT-enabled coordination			

Legend:

■ = ≥ 3 corresponding measure items

□ = 1-2 corresponding measure items

*Indicates that the measure as a whole focused on the Health care home model.

Safety Net Medical Home Provider Experience Survey

Purpose: To measure health care professionals' perceptions of patient-centered medical home (PCMH) characteristics and associated quality improvement in safety net clinics.

Format/Data Source: A 57-item survey asking a variety of health care professionals and staff practicing in safety net clinics to report their experiences with implementation of PCMH characteristics. The survey contains questions addressing 5 subscales, which include: (1) access to care and communication with patients, (2) communication with other providers, (3) tracking data, (4) care management, and (5) quality improvement. Response choices used a 5-point Likert-type scale and are then rescaled to a range of 1 – 100 points, with 0 indicating worst and 100 indicating best. Four of the five subscale scores are averaged to create a total PCMH score (excludes communication with other providers).¹

Date: Measure released in 2010.¹

Perspective: Health Care Professional

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 1a, 1b
- **Communicate:**
 - *Across health care teams or settings:* 2a, 2b, 2c, 14d
 - Interpersonal communication:
 - *Between health care professional(s) and patient/family:* 14b, 14c
 - *Within teams of health care professionals:* 12d
- **Facilitate transitions:**
 - Across settings: 2a, 2b, 2c
- **Assess needs and goals:** 6c
- **Monitor, follow up, and respond to change:** 3b, 14f
- **Support self-management goals:** 6d, 14a
- **Link to community resources:** 6f
- **Align resources with patient and population needs:** 6b, 6c
- **Teamwork focused on coordination:** 6e
- **Health care home:** 1a, 1b, 2a, 2b, 2c, 3b, 6b, 6c, 6d, 6e, 6f, 12d, 14a, 14b, 14c, 14d, 14f*

*The instrument as a whole focuses on the Health care home model. Only those items that map to at least one other care coordination domain are listed here.

Development and Testing: Questions were selected for each subscale based on content validity. Cronbach's alphas for the 5 subscales ranged from 0.48 (5-item access to care and communication with patients subscale) to 0.82 (7-item care management subscale), with an overall alpha of 0.87 for the total PCMH score.¹

Link to Outcomes or Health System Characteristics: None described in the source identified.

Logic Model/Conceptual Framework: The 2008 National Committee for Quality Assurance PCMH standards.³

Country: United States

Past or Validated Applications*:

- **Patient Age:** Not applicable
- **Patient Condition:** Not applicable
- **Setting:** Primary Care Facility

*Based on the sources listed below.

Notes:

- All instrument items are located online.²
- This instrument contains 57 items, of which 17 were mapped.
- A version to assess staff experience is also available.

Sources:

1. Lewis SE, Nocon RS, Tang H, et al. Patient-Centered Medical Home Characteristics and Staff Morale in Safety Net Clinics. *Archives of Internal Medicine* 2012;172(1):23-31.
2. Commonwealth Fund. Safety Net Medical Home Provider Experience Survey. Available at: http://www.commonwealthfund.org/Innovations/Tools/2012/Jan/~/_media/Files/Innovations/Jan/3a%20%20Provider%20Experience%20Survey.pdf. Accessed: August 5, 2013.
3. National Committee for Quality Assurance. PCMH Standards & Guidelines. Available at: <http://www.ncqa.org/tabid/1016/Default.aspx>. Accessed: August 1, 2011.

Measure #75. Rhode Island Physician Health Information Technology Survey.

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			
<i>Interpersonal communication</i>		□	
<i>Information transfer</i>		■	
Facilitate transitions			
<i>Across settings</i>		□	
<i>As coordination needs change</i>			
Assess needs and goals			
Create a proactive plan of care			
Monitor, follow up, and respond to change		□	
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management			
Health IT-enabled coordination		■	

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Rhode Island Physician Health Information Technology Survey

Purpose: To measure physicians' use and integration of health information technology (HIT) and electronic medical records (EMRs) in their office or hospital clinical practice.

Format/Data Source: A 49 item, paper-based survey asking physicians to report their use of specific electronic medical record features for the primary purposes of information transfer and facilitation of care coordination within their clinical practice. The survey can assess level of EMR and e-prescribing implementation (basic or advanced) longitudinally. Questions are divided among 5 measures designed to ascertain physicians' use of health information technology, including: (1) percentage of physicians with EMRs, (2) percentage of physicians with "qualified" EMRs, (3) basic EMR functionality use (scale of 0 – 100), (4) advanced EMR functionality use (scale of 0 –100), and (5) percentage of physicians who are e-prescribing.¹

Date: Measure released in 2009.¹

Perspective: Health Care Professional

Measure Item Mapping:

- **Communicate:**
 - Interpersonal Communication:
 - *Across health care teams or settings:* 16
 - Information Transfer:
 - *Between health care professional(s) and patient/family:* 20b
 - *Across health care teams or settings:* 14d, 17a, 17b, 17c, 19a, 19b, 19c, 19d, 21, 22, 23
- **Facilitate transitions:**
 - Across settings: 14d, 16
- **Monitor, follow up, and respond to change:** 18b, 20b
- **Health IT-enabled coordination:** 14d, 15a, 15b, 16, 17a, 17b, 17c, 18b, 19a, 19b, 19c, 19d, 20b, 21, 22, 23

Development and Testing: The pilot survey was reviewed by several expert panels comprised of academics, physicians, HIT professionals, Medicaid professionals, and commercial health plan professionals, and a survey design expert. Informal cognitive testing was performed with the expert panels, and the resulting consensus feedback was incorporated into the final version of the survey via an iterative process. Both measures differ by practice site, with office-based physicians less likely to have an EMR (58.4% vs. 83.4%, $p < .0001$) but more likely to have a "qualified" EMR (16.4% vs. 5.8%, $p < .0001$). Average use was higher for basic versus advanced functionalities: 63.6 on a 100-point scale for basic functionalities (Measure 3) and 44.1 points for advanced functionalities (Measure 4). Basic EMR functionality use was higher, on average, among office-based respondents (66.5 vs. 60.2 points, $p = .0003$) and lower in advanced functionality use (37.8 vs. 51.4 points, $p < .0001$). A majority of EMR users ($n = 731$, 57.5%) were using all six basic functionalities at least 60% of the time, and nearly half ($n = 577$,

45.1%) were using all 10 advanced functionalities at least 60% of the time.¹

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: None described in the sources identified.

Country: United States

Past or Validated Applications*:

- **Patient Age:** Not Applicable
- **Patient Condition:** Not Applicable
- **Setting:** Primary Care Facility, Inpatient, Emergency Department

*Based on the sources listed below and input from the measure developers.

Notes:

- All instrument items can be requested online at <http://www.health.ri.gov/physicians/about/quality/index.php>.²
- This instrument contains 49 items, of which 16 were mapped.
- There are two versions of the survey, an inpatient physician version and an outpatient physician version. Process measures are also calculated using the survey data, which include some components that map to coordination. Note that the measures are being developed for Advanced Practice Registered Nurses (APRNs) and Physician Assistants (PAs), as well as physicians.¹
- Physicians who did not respond to this survey (required in Rhode Island) were assumed to not be utilizing EMRs, and therefore, were counted as “failing” all of the survey measures.³

Sources:

1. Baier RR, Gardner RL, Buechner JS, et al. Creating a survey to assess physicians' adoption of health information technology. *Med Care Res Rev* 2012;69(2):231-45.
2. Rhode Island Department of Health. Quality Information about Physicians, Advanced Practice Registered Nurses and Physician Assistants. Available at: <http://www.health.ri.gov/physicians/about/quality/index.php>. Accessed: August 6, 2013.
3. Baier R, Voss R, Morphis B, et al. Rhode Island physicians' health information technology (HIT) use, 2009-2011. *Med Health R I* 2011;94(7):215-7.

Measure #76. The Joint Commission Patient-Centered Medical Home Self-Assessment Survey

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			■
Communicate			■
<i>Interpersonal communication</i>			□
<i>Information transfer</i>			□
Facilitate transitions			
<i>Across settings</i>			■
<i>As coordination needs change</i>			□
Assess needs and goals			■
Create a proactive plan of care			■
Monitor, follow up, and respond to change			□
Support self-management goals			■
Link to community resources			
Align resources with patient and population needs			□
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			□
Health care home			■*
Care management			□
Medication management			□
Health IT-enabled coordination			■

Legend:

■ = ≥ 3 corresponding measure items

□ = 1-2 corresponding measure items

*Indicates that the measure as a whole focuses on the Health care home model.

The Joint Commission Patient-Centered Medical Home Self-Assessment Survey

Purpose: To evaluate the coordination and comprehensiveness of patient-centered care in accordance with the principles of the patient-centered medical home (PCMH), in particular partnerships between the primary care clinician, interdisciplinary team, and patient.

Format/Data Source: A 66-item paper-based survey completed by health care organization administrators. The survey consists of 12 focus areas listed within 5 operational characteristics, which include: (1) patient-centeredness, (2) comprehensiveness, (3) coordination of care, (4) superb access to care, and (5) systems for quality/safety. Questions are answered in Yes/No responses, some of which required further written explanation.¹

Date: Measure released in 2011.²

Perspective: System Representative

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** I.A.1.e, I.B.1, I.C.3, II.B.1, II.B.4, III.A.1
- **Communicate:**
 - *Between health care professional(s) and patient/family:* I.A.1.a, I.A.1.b, I.A.1.c, I.A.1.d, I.A.1.e, I.A.1.f
 - *Within teams of health care professionals:* I.D.3
 - Interpersonal communication:
 - *Between health care professional(s) and patient/family:* I.D.2
 - Information transfer:
 - *Within teams of health care professionals:* V.A.1.f
- **Facilitate transitions:**
 - Across settings: II.A.1, III.A.2, III.A.3
 - As coordination needs change: II.A.2
- **Assess needs and goals:** I.D.1, II.A.2, II.B.5, II.B.6
- **Create a proactive plan of care:** I.C.2, I.E.3, III.A.4
- **Monitor, follow up, and respond to change:** V.A.1.b
- **Support self-management goals:** I.A.1.d, I.A.1.e, I.E.2, I.E.3, I.E.4, I.E.5, V.A.1.c
- **Align resources with patient and population needs:** I.D.4, I.E.2
- **Teamwork focused on coordination:** II.B.2, II.B.4
- **Health care home:** I.A.1.a-I.A.1.f, I.B.1, I.C.2-I.C.3, I.D.1-I.D.4, I.E.2-I.E.5, II.A.1-II.A.3, II.B.1, II.B.2, II.B.4-II.B.6, III.A.1-III.A.4, V.A.1.a-V.A.1.c, V.A.1.f*
- **Care management:** II.A.3
- **Medication Management:** I.A.1.e
- **Health IT-enabled coordination:** V.A.1.a, V.A.1.b, V.A.1.c, V.A.1.f

*The instrument as a whole focuses on the Health care home model. Only those items that map to at least one other care coordination domain are listed here.

Development and Testing: An expert panel developed the standards for the Joint Commission's PCMH option. After soliciting input from the field, draft standards were posted on the Joint Commission's website for comment and piloted in primary care settings. The Joint Commission's Board of Commissioners approved the finalized standards.²

Link to Outcomes or Health System Characteristics: None described in the source identified.

Logic Model/Conceptual Framework: None described in the source identified.

Country: United States

Past or Validated Applications*:

- **Patient Age:** Not Applicable
- **Patient Condition:** Not Applicable
- **Setting:** Primary Care Facility, Other Outpatient Specialty Care Facility

*Based on the sources listed below.

Notes:

- All instrument items are located online.²
- This instrument contains 66 items, of which 33 were mapped.
- A version of the survey specifically for ambulatory care practices that are owned/operated by an accredited hospital is also available from the measure steward.

Sources:

1. The Joint Commission Patient-Centered Medical Home (PCMH) Self-Assessment Tool web site. Available at:

http://www.jointcommission.org/joint_commission_primary_care_medical_home_self-assessment_tool___/. Accessed: May 10 2012.

2. Joint Commission on Accreditation of Healthcare Organizations. New Primary Care Medical Home Option for Accredited Ambulatory Care Organizations. Joint Commission Perspectives 2011;31(7):1-3.

Measure #77. Communication with Referring Physicians Practice Improvement Module (CRP-PIM)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility		■	
Communicate		■	
<i>Interpersonal communication</i>		□	
<i>Information transfer</i>		□	
Facilitate transitions			
<i>Across settings</i>		■	
<i>As coordination needs change</i>			
Assess needs and goals			
Create a proactive plan of care			
Monitor, follow up, and respond to change		□	
Support self-management goals			
Link to community resources			
Align resources with patient and population needs		□	
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Communication with Referring Physicians Practice Improvement Module (CRP-PIM)

Purpose: To assess communication between referring physicians and physician consultants to whom they regularly refer patients.

Format/Data Source: A 35-item telephone or internet survey completed by referring physicians to assess communication and care coordination performed by physician consultants to whom they have referred patients over the previous 12 months. Items are grouped into nine sections assessing: (1) the consulting physician, (2) contacting the consulting physician, (3) communications from the consulting physician, (4) coordination of care, (5) surgery or invasive procedures performed by the consulting physician, (6) overall rating of the consulting physician, (7) the consulting physician's office staff, (8) about referring practices, and (9) about the respondent. Response scales include 6-point Likert-type responses and yes/no responses.

Date: Measure released in 2009.¹

Perspective: Health Care Professional(s)

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 3, 7, 8, 9, 15, 16, 17, 18, 22
- **Communicate:**
 - *Across health care teams or settings:* 8, 9, 10, 11, 16, 18, 22, 23, 24
 - Interpersonal communication:
 - *Between health care professional(s) and patient/family:* 13
 - Information transfer:
 - *Across health care teams or settings:* 20, 29
- **Facilitate transitions:**
 - Across settings: 4, 6, 8, 9, 18, 23, 24
- **Monitor, follow up, and respond to change:** 23, 24
- **Align resources with patient and population needs:** 10

Development and Testing: To evaluate the survey, 803 consulting physicians requested feedback from over 12,000 physicians who regularly refer patients to them (average 15.21 referring physicians per consultant). Factor loading showed that item ratings were associated with two distinct dimensions of communication: contacting/communication with the consultant, and helpfulness of the consultant's office staff. Correlation between the two category ratings was 0.41 ($p < .001$). Further analyses suggested good reliability.¹

Link to Outcomes or Health System Characteristics: Consulting physicians whose practice provided 24/7 nonphysician staff and telephone coverage for referring physicians, as well as those whose practice used a system outside the medical record to track referrals to and from other physicians, received significantly higher ratings on the helpfulness of office staff, as rated by referring physicians ($p < 0.01$).¹

Logic Model/Conceptual Framework: None described in the source identified.

Country: United States

Past or Validated Applications*:

- **Patient Age:** Not Applicable
- **Patient Condition:** Not Applicable
- **Setting:** Primary Care Facility, Other Outpatient Specialty Care Facility

*Based on the source listed below and input from the measure developers.

Notes:

- Instrument items may be requested from the American Board of Internal Medicine.
- This instrument contains 35 items, of which 18 were mapped.
- This instrument is one of 15 Web-based practice improvement modules for practicing physicians available from the American Board of Internal Medicine.

Sources:

1. Hess BJ, Lynn LA, Holmboe ES, et al. Toward Better Care Coordination Through Improved Communication With Referring Physicians. *Academic Medicine* 2009;84(10):S109-S12.

Measure #78. Safe Transitions Community Physician Office Best Practice Measures

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			□
Communicate			
<i>Interpersonal communication</i>			□
<i>Information transfer</i>			■
Facilitate transitions			
<i>Across settings</i>			■
<i>As coordination needs change</i>			
Assess needs and goals			
Create a proactive plan of care			
Monitor, follow up, and respond to change			□
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management			□
Health IT-enabled coordination			

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

Safe Transitions Community Physician Office Best Practice Measures

Purpose: To measure successful communication and timely transfer of clinical information at the time of patient transitions to and from the hospital (including emergency department) and community physician offices.

Format/Data Source: A 7-item set of measures designed to reflect best practices for community-based ambulatory care physicians when facilitating high-quality patient transitions to and from their offices. The measure set includes measures of information transfer (i.e., discharge summaries, medication lists, referral information), medication reconciliation, accountability (i.e., naming primary care provider), follow-up, and other coordination activities. Data for all seven measures is derived from documentation included in patients' medical records (chart review) or electronic clinical information (audit trails). Measure specifications include numerator and denominator definitions and exclusions.¹

Date: Measure released in 2012.¹

Perspective: System Representative

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 4
- **Communicate:**
 - Interpersonal communication:
 - *Across health care teams or settings:* 2
 - Information transfer:
 - *Across health care teams or settings:* 1, 3, 4
- **Facilitate transitions:**
 - *Across settings:* 1, 2, 3, 4, 5, 6, 7
- **Monitor, follow up, and respond to change:** 5, 6
- **Medication Management:** 7

Development and Testing: The measures set is based on evidence-based guidelines. A consensus-based stakeholder review process was utilized to refine the best practices and ensure feasibility with existing care setting workflows. The stakeholders vetted the finalized measure set, including ensuring face validity.¹

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: None described in the sources identified.

Country: United States

Past or Validated Applications*:

- **Patient Age:** Adult

- **Patient Condition:** Not Condition Specific
 - **Setting:** Primary Care Facility, Inpatient Care Facility, Emergency Department
- *Based on the sources listed below and input from the measure developers.

Notes:

- All instrument items are located online.²
- This instrument contains 7 items, of which 7 were mapped.
- Several other related versions of this measure set exist, each tailored to transitions to and from a different setting: emergency departments, home health agencies, nursing homes, urgent care centers, and hospitals.

Sources:

1. Baier R, Gardner R, Gravenstein S, et al. Partnering to improve hospital-physician office communication through implementing care transitions best practices. *Medicine & Health / Rhode Island* 2012:178-82.
2. Healthcentric Advisors Partnering to Improve Hospital-Physician Office Communication. Available at: <http://www.healthcentricadvisors.org/resources/managing-healthcare/tag/resources/Safe%20Transitions.html>. Accessed: August 14, 2013.

Measure #79. National Survey of Physicians Organizations and the Management of Chronic Illness II (NSPO-2)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			■
Communicate			
<i>Interpersonal communication</i>			□
<i>Information transfer</i>			■
Facilitate transitions			
<i>Across settings</i>			
<i>As coordination needs change</i>			
Assess needs and goals			■
Create a proactive plan of care			
Monitor, follow up, and respond to change			■
Support self-management goals			■
Link to community resources			
Align resources with patient and population needs			■
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			□
Health care home			
Care management			■
Medication management			
Health IT-enabled coordination			■

Legend:

- = ≥ 3 corresponding measure items
- = 1-2 corresponding measure items

National Survey of Physicians Organizations and the Management of Chronic Illness II (NSPO-2)

Purpose: To measure the degree of adoption of primary care medical home (PCMH) infrastructure components (physician-directed care, care coordination/integration, quality and safety, and enhanced access) in large primary care practices and multispecialty medical groups.

Format/Data Source: A 221-item survey completed by medical directors, presidents, or chief operating officers of medical groups and independent practice associations with more than 20 physicians and who treat patients with specific chronic diseases (asthma, diabetes, congestive heart failure, or depression). The survey takes approximately 35 minutes to complete by telephone. Survey responses can be combined to create a PCMH index ranging from 0 to 20, where a greater score indicates greater implementation of PCMH infrastructure components.¹

Date: Measure released in 2008.²

Perspective: System Representative(s)

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** C41, C42, C43, C44, C45, C46, C47, C48, C49, D5
- **Communicate:**
 - Interpersonal communication:
 - *Between health care professional(s) and patient/family:* B30
 - *Within teams of health care professionals:* C49
 - Information transfer:
 - *Between health care professional(s) and patient/family:* B16
 - *Within teams of health care professionals:* B13, B14
 - *Across health care teams or settings:* B17, B19, B21, B23, B25, B27, B29, D9
 - *Participants not specified:* G2
- **Assess needs and goals:** C46, G1, H5
- **Monitor, follow up, and respond to change:** C17, C18, C19, C20, C21, C22, C23, C24, D2, G3
- **Support self-management goals:** C25, C26, C27, C28, C29, C30, C31, C32, D3
- **Align resources with patient and population needs:** C25, C26, C27, C28, C29, C30, C31, C32, C41, C42, C43, C44, C45, C46, C47, C48, C51, D3, D5, G16
- **Teamwork focused on coordination:** C49, D10
- **Care management:** C41, C42, C43, C44, C45, C46, C47, C48, D5, D9, D10
- **Health IT-enabled coordination:** B13, B14, B16, B18, B20, B22, B24, B26, B28, B30

Development and Testing: None described in the source identified.

Link to Outcomes or Health System Characteristics: Among 291 medical groups, larger groups (measured by number of physicians) scored higher on the PCMH Index calculated from the NSPO-2 survey, indicating greater implementation of PCMH infrastructure components.¹ In

a sample of 1,164 small or medium sized physician practices (<20 physicians), practices that participated in an independent practice association or a practice-hospital organization were significantly more likely to offer greater care management processes to their patients, including using a registry to track patients with chronic disease, providing reminders to patients about needed follow-up care, and using nurse care managers to coordinate with patients between office visits ($p<0.05$).³

Logic Model/Conceptual Framework: None described in the source identified.

Country: United States

Past or Validated Applications*:

- **Patient Age:** Adults
- **Patient Condition:** Combined Chronic Conditions, General Chronic Conditions
- **Setting:** Primary Care Facility, Other Outpatient Specialty Care Facility

*Based on the sources listed below and input from the measure developers.

Notes:

- All instrument items are located online.²
- This instrument contains 221 items, of which 53 were mapped.
- Version 3 of this measure has been developed, but has not yet been publicly released.

Sources:

1. Rittenhouse DR, Casalino LP, Gillies RR, et al. Measuring the medical home infrastructure in large medical groups. *Health Affairs* 2008;27(5):1246-58.
2. University of California at Berkeley. National Study of Physician Organizations. Available at: <http://nspo.berkeley.edu/Instruments.htm>. Accessed: August 29, 2013.
3. Casalino LP, Wu FM, Ryan AM, et al. Independent practice associations and physician-hospital organizations can improve care management for smaller practices. *Health Aff (Millwood)* 2013;32(8):1376-82.

Measure #80. Patient-Centered Medical Home Assessment (PCMH-A) Tool

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	<i>Patient/Family</i>	<i>Health Care Professional(s)</i>	<i>System Representative(s)</i>
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			□
Communicate			■
<i>Interpersonal communication</i>			
<i>Information transfer</i>			□
Facilitate transitions			
<i>Across settings</i>			■
<i>As coordination needs change</i>			
Assess needs and goals			■
Create a proactive plan of care			□
Monitor, follow up, and respond to change			■
Support self-management goals			□
Link to community resources			□
Align resources with patient and population needs			□
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			□
Health care home			■*
Care management			□
Medication management			
Health IT-enabled coordination			□

Legend:

■ = ≥ 3 corresponding measure items

□ = 1-2 corresponding measure items

*Indicates that the measure as a whole focuses on the Health care home model.

Patient-Centered Medical Home Assessment (PCMH-A) Tool

Purpose: To assess implementation of the patient-centered medical home model at a site of care, identify opportunities for related improvement, and track progress towards strengthening the patient-centered medical home.

Format/Data Source: A 35-item survey to be completed by multidisciplinary groups of health care professionals (i.e., physicians, nurses, medical assistants, residents, administrative staff) to assess the current level of functional implementation of the patient-centered medical home model in a practice. The survey is comprised of eight change concept subscales, including (1) engaged leadership, (2) quality improvement strategy, (3) empanelment, (4) continuous and team-based healing relationships, (5) organized, evidence-based care, (6) patient-centered interactions, (7) enhanced care, and (8) care coordination. Responses are on a 12-point scale, with quadrants of scores (1-3, 4-6, 7-9, 10-12) divided among four levels of PCMH implementation (level A-D). Higher scores (i.e., level A) indicate more advanced implementation of the PCMH model.¹

Date: Measure released in 2013.¹

Perspective: System Representative(s)

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 29
- **Communicate:**
 - *Between health care professional(s) and patient/family:* 8, 21, 22, 35
 - *Within teams of health care professionals:* 19
 - *Across health care teams or settings:* 19, 32
 - Information transfer:
 - *Across health care teams or settings:* 28
- **Facilitate transitions:**
 - Across settings: 30, 31, 32, 33
- **Assess needs and goals:** 17, 20, 21
- **Create a proactive plan of care:** 18
- **Monitor, follow up, and respond to change:** 17, 32, 33
- **Support self-management goals:** 18, 23
- **Link to community resources:** 32, 34
- **Align resources with patient and population needs:** 19, 22
- **Teamwork focused on coordination:** 17
- **Health care home:** 8, 17, 18, 19, 20, 21, 22, 23, 28, 29, 30, 31, 32, 33, 34, 35*
- **Care management:** 19
- **Health IT-enabled coordination:** 8

*The instrument as a whole focuses on the Health care home model. Only those items that map to at least one other care coordination domain are listed here.

Development and Testing: None described in the sources identified.

Link to Outcomes or Health System Characteristics: In a study of 64 safety net practices from five states participating in a national demonstration project, independent observers agreed with practices' PCMH-A scores 82% of the time. In addition, practices that earned recognition as a PCMH by the National Committee for Quality Assurance early in the demonstration had higher PCMH-A scores than other sites. In addition, sites that engaged in and completed more medical home transformation activities by the end of the demonstration were more likely to report higher PCMH-A scores (personal communication, Donna Daniel, April 3, 2013).

Logic Model/Conceptual Framework: The instrument was developed based on the Change Concepts for Practice Transformation² and the 2008 National Committee for Quality Assurance PCMH standards.³

Country: United States

Past or Validated Applications*:

- **Patient Age:** Not Applicable
- **Patient Condition:** Not Applicable
- **Setting:** Primary Care Facility

*Based on the sources listed below and input from the measure developers.

Notes:

- All instrument items are located online.¹
- This instrument contains 35 items, of which 16 were mapped.

Sources:

1. Patient-Centered Medical Home Assessment (PCMH-A). Safety Net Medical Home Initiative. Available at: <http://www.safetynetmedicalhome.org/sites/default/files/PCMH-A.pdf>.
2. Wagner EH, Coleman K, Reid RJ, et al. The changes involved in patient-centered medical home transformation. *Prim Care* 2012;39(2):241-59.
3. National Committee for Quality Assurance. PCMH Standards & Guidelines. Available at: <http://www.ncqa.org/tabid/1016/Default.aspx>. Accessed: August 1, 2011.

Appendix I. Measure Mapping Strategy

Measure Mapping Procedures

Before beginning the mapping process, the research team developed [domain definitions](#) and the Measure Mapping Table ([see Table 4](#)).

To begin the mapping process, all measures included in the *Atlas* were reviewed by one of two reviewers. Reviewers read through each measure, keeping in mind the specific components of care coordination that the measure addresses. Using the measure mapping table and the domain definitions, the reviewers identified the specific domains that correspond to the components of care coordination that each instrument measures. Reviewers also determined the perspective of measurement. When questions arose about appropriate mapping, the reviewers discussed and ultimately agreed upon a perspective and set of domains corresponding to each measure.

To assess inter-rater reliability of the measure mapping, reviewers selected at random 6 measures (approximately 10 percent of the total included in the *Atlas*) from among 31 measures that were planned for inclusion within the *Atlas* at the time the reliability testing was performed. The 19 measures included in an earlier draft *Atlas* were not considered for reliability testing because their mapping was discussed during development of the draft. The reviewers also did not consider reliability testing on those measures for which a final decision had not yet been made about whether it would be included in the *Atlas*, or measures that were missing key information (such as the measure instrument) at the time of reliability testing. Three measures were selected randomly from among those mapped by reviewer 1 (n=9 measures total) and three were selected randomly from among those mapped by reviewer 2 (n=22). Reliability was assessed before any discussion among the reviewers regarding the selected measures.

Across the 6 measures, there were 169 individual measure items (e.g., survey questions). Agreement about whether a specific item mapped to any domain was 86 percent (146/169), with a kappa of 0.694 ($p < 0.001$). Conventionally, a kappa > 0.67 is considered sufficient for drawing some conclusions. Therefore, we believe that the observed kappa of 0.69 is sufficient for the purposes of the measure mapping, which is intended to facilitate identification of relevant measures.

We also assessed reliability of mapping to the 3 perspectives: patient/family, health care professional(s), and system representative(s). Across 6 measures and 3 perspectives, there were 18 possible perspective mappings. (Each measure may be mapped to multiple perspectives). Reviewers agreed on all but one combination, resulting in 94 percent agreement. We did not calculate a kappa statistic because it is not an appropriate statistic when more than one mapping is possible for each measure.

Reliability of mapping to the framework domains was also assessed. To assess agreement of domain mapping across measurement items, only items that were mapped by both reviewers (n=101) were considered. Subdomains (e.g., Interpersonal Communication and Information Transfer) were considered as distinct domains for the purposes of reliability assessment.

Domain mapping agreement was examined in two ways. First, we examined agreement by domain. That is, what proportion of the 101 measure items did both reviewers agree should be mapped to

each domain? Agreement in mapping to domains was good, ranging from 80 percent (Communicate) to 100 percent (Facilitate Transitions as Coordination Needs Change; Health Care Home; Health IT-Enabled Coordination).

Reliability of domain mapping was also assessed by comparing mapping across measure items. That is, how similar were each reviewer's mappings for each item? For this comparison, the denominator was calculated by multiplying the total number of items mapped (n=101) by the total number of possible mappings (17 domains). Agreement was excellent. The reviewers agreed on 1604/1717 possible mappings, or 93 percent. As was the case for the perspective reliability assessment, a kappa statistic was not calculated because it is not an appropriate statistic when more than one mapping is possible for each measure.

Measures added to the *Atlas* as part of this update were mapped in the same manner as outlined above for the original *Atlas*. All mapping was confirmed by a member of the original *Atlas* development team, with an emphasis on consistency in how domains were applied during mapping.

Examples of Measure Item Mappings

The following list provides sample items (and their measure source) that were mapped to each care coordination domain on the measure mapping table. Copies of the measure instruments will be added to [Appendix IV: Care Coordination Measures](#), currently under development. Appendix IV will be updated regularly.

Establish Accountability or Negotiate Responsibility

- *I clarify whether the nurse or I will have the responsibility for discussing different kinds of information with the patient.* [Measure #7b, item 10 (CPS)]
- *How often were you confused about the roles of different providers?* [Measure #6, item 9 (CPCQ)]

Communicate*

- Across health care teams or settings – *How effective is one-to-one communication between ICU staff and members of other units?* [Measure #12a, item V.II.B.f (ICU Nurse-Physician Questionnaire)]

Interpersonal Communication

- Between health care professional(s) and patients/family – *How often does your service provider talk with you about your future care?* [Measure #6, item 27 (CPCQ)]
- Within teams of health care professionals – *I discuss areas of agreement and disagreement with nurses in an effort to develop mutually agreeable health goals.* [Measure #7b, item 5 (CPS)]

Information Transfer

- Across health care teams or settings – *Medical record transfer: IF a person age 75 or older is transferred between emergency rooms or between acute care facilities, THEN the medical record at the receiving facility should include medical records from the transferring facility, or should acknowledge transfer of such medical records.* [Measure #2, item 11 (ACOVE-2 Quality Indicators)]

- Within teams of health care professionals – *It is often necessary for me to go back and check the accuracy of information I have received from nurses in this unit.* [Measure #12b, item I-4 (ICU Nurse-Physician Questionnaire)]

*Note: When the mode of communication was not clear, measures and measure items were mapped to the less specific *Communicate* domain rather than to either of the subdomains (*Interpersonal Communication* and *Information Transfer*).

Facilitate Transitions[†]

Across Settings

- *Did your primary care provider (PCP) or someone working with your PCP help you make the appointment for that visit (referred to specialist)?* [Measure #17a, item E9 (Primary Care Assessment Tool-Child Edition (PCAT-CE))]

As Coordination Needs Change

- *In preparation for transition (to adulthood), does your provider have a process to share information with the adult care provider including: transition plans, medical records, key health issues, and current family and youth roles in managing care?* [Measure #11a, item 4.2E (FCCSAT-Family Version)]

[†]Note: We were able to map all measures related to transitions to one or the other of the subdomains specifying transition type (*Facilitate Transitions Across Settings* and *Facilitate Transitions as Coordination Needs Change*). Therefore, no measures or measure items were mapped to the less specific *Facilitate Transitions* domain.

Assess Needs and Goals

- *Before I left the hospital, the staff and I agreed about clear health goals for me and how these would be reached. (Y/N)* [Measure #9b, item 1 (CTM-15)]

Create a Proactive Plan of Care

- *When I left the hospital, I had a readable and easily understood written plan that described how all of my health care needs were going to be met.* [Measure #9b, item 1 (CTM-15)]

Monitor, Follow Up, and Respond to Change

- *In the past 3 months, how often have service providers responded appropriately to changes in your needs?* [Measure #6, item 10 (CPCQ)]
- *Diagnostic test followup: IF the outpatient medical record documents that a diagnostic test was ordered for a person age 75 or older, THEN the medical record at the followup visit should document 1 of the following: result of the test, test was not needed or reason why it will not be performed, test is still pending.* [Measure #2, item 6 (ACOVE-2 Quality Indicators)]
- *Does your partnership with your provider change over time as your experiences, knowledge, and skills change?* [Measure #11a, item 1.8 (FCCSAT-Family Version)]

Support Self-Management Goals

- *When I left the hospital, I clearly understood the warning signs and symptoms I should watch for to monitor my health. (Y/N)* [Measure #9b, item 6 (CTM-15)]

- *In the past 3 months, how often did someone on your diabetes care team teach you how to take care of your diabetes?* [Measure #21, item 7 (RSSM)]

Link to Community Resources

- *Linking patients to outside resources: 1) is not done systematically; 2) is limited to a list of identified community resources in an accessible format; 3) is accomplished through a designated staff person or resource responsible for ensuring providers and patients make maximum use of community resources; or 4) is accomplished through active coordination between the health system, community service agencies, and patients.* [Measure #1, item 7 (ACIC)]

Align Resources With Patient and Population Needs

- *Do you and your staff: Offer trained interpretation (foreign language or sign)?* [Measure #11b, item 13.1C (FCCSAT-Provider Version)]
- *Is your facility able to change health care services or programs in response to specific health problems in the communities?* [Measure #17c, item J4 (PCAT-FE)]

Teamwork Focused on Coordination

- *When problems arise regarding the care of ____ patients, do care providers in these groups work with you to solve the problem?* [Measure #46, item 4 (RCS)]
- *Overall, our unit functions very well together as a team.* [Measure #12a, item V.9 (ICU Nurse-Physician Questionnaire)]

Health Care Home

- *Is there a doctor or place that you usually take your child if s/he is sick or you need advice about his/her health?* [Measure #17b, item A1 (PCAT-AE)]

Care Management

- *Does anyone help you or coordinate [CHILD'S NAME]'s care among the different doctors or services [he/she] uses? (asked for children who used more than two services)* [Measure #51, item K5Q20 (NSCH)]

Medication Management

- *The pharmacist and I negotiate to come to an agreement on our activities in managing drug therapy. (Y/N)* [Measure #18, item 7 (PPCI)]

Health IT-Enabled Coordination

- *What is the policy timeframe for clinicians to respond to patient PHR [personal health record] emails?* [Measure #34, item 10 (PHR)]

Additional Measure Characteristics

In this updated version of the *Atlas*, all measures are characterized with respect to three additional criteria: patient age groups, patient conditions, and settings. These criteria identify the group or groups of patients whose care the measure is intended to assess. They are not applicable to all measures. For example, some measures focus on aspects of coordination as it is performed or perceived by health care professionals and patients are not directly addressed. The Setting categories identify the settings for which the measure is designed or where it is intended to be or has

been used. Measures were mapped to these categories based upon information contained in the measure instrument itself and in published sources listed in the *Atlas* profiles. Measures were mapped to a category if it matched a stated intent or purpose of the measure or a published use of the measure. When possible, feedback from measure developers was incorporated prior to finalizing the categorization for each measure. Definitions for categories within each of these criteria are listed below.

Patient Age Group

The Patient Age Group criterion identifies the group or groups of patients whose care the measure is intended to assess. This criterion is based upon use of the measure in sources listed in the *Atlas* profiles or information contained within the measure instrument. Categories are not mutually exclusive. For example, measures that are classified as *Older Adults* are also classified as *Adults*. Similarly, measures that have been used in both adult and pediatric populations are classified as both *Adults* and *Children*.

Children – Measure is targeted toward or has been used in a patient population described as pediatric, children, or parents/care takers of children receiving health care.

Adults – Measure is targeted toward or has been used in an adult population. This includes measures applicable to older adults.

Older Adults – Measure is targeted toward or has been used in older adults, including measures designated for a geriatric patient population, the elderly, or aged individuals. All *Older Adult* measures are also included in the *Adult* category.

Not Age Specific – Purpose states measure is intended for application to patients of all ages, or no information is available on the ages of patients to whom the measure has been applied.

Not Applicable – Measure does not focus on patients.

Patient Condition Group

The Patient Condition Group is the disease or condition for which the measure is targeted and the population that requires or benefits from coordination. This criterion is based upon use of the measure in sources listed in the *Atlas* profiles or information contained within the measure instrument. Categories are not mutually exclusive. Measures are mapped to more than one condition category when applicable.

Combined Chronic Conditions - Patients with any chronic condition, including patients with conditions captured by one of the other Patient Condition Group categories. This category includes all measures mapped to *General Chronic Conditions*, *Multiple Chronic Conditions*, *Cancer/Oncology*, *Mental Illness & Substance Use Disorders*, and *Children with Special Health Care Needs*.

General Chronic Conditions - We include in this category patients who are described as having chronic conditions, chronic diseases, or chronic illnesses without specifying particular conditions. We also include in this category any specific chronic disease that is not captured by one of the other

patient condition categories. We define chronic condition as a disease or condition of long duration and typically slow progression. We do not restrict the definition of chronic condition to specific diseases, but the following are examples of conditions that would be included: HIV/AIDS, asthma, chronic obstructive pulmonary disease, diabetes and cardiac conditions, including congestive heart failure and coronary artery disease. Measures included in the *Multiple Chronic Conditions* category are also included here.

Multiple Chronic Conditions - Patients with at least two simultaneous chronic conditions. These may be two or more specific chronic diseases (e.g., congestive heart failure and diabetes), or a description of patients as having multiple chronic conditions, diseases or illnesses without specifying particular conditions. All measures included in this category are also included in the *Combined Chronic Conditions* category. If applicable, measures included here may also be included in one of the other Patient Condition Group categories (e.g., a measure designed for patients with diabetes and mental illness is also included in the *Mental Illness & Substance Use Disorders* category).

Cancer/Oncology - Patients with any form of cancer, including leukemia, or patients of any oncology service or provider. This category also includes patients who are undergoing diagnosis for cancer because coordination issues during the period of diagnosis are likely similar to those during the treatment phase. All measures included in this category are also included in the *Combined Chronic Conditions* category.

Mental Illness & Substance Use Disorders - Patients with any mental illness, such as depression, schizophrenia, bipolar disorder, obsessive compulsive disorder, anxiety disorders, and post-traumatic stress disorder. This category also includes alcohol or substance abuse and unspecified mental illness or mental disorders. All measures included in this category are also included in the *Combined Chronic Conditions* category.

Children with Special Health Care Needs - Children who have or are at an increased risk for a chronic physical, developmental, behavioral, or emotional condition and who also require health and related services of a type or amount beyond that required by children generally. All measures included in this category are also included in the *Combined Chronic Conditions* category.

Other Conditions - Measure is targeted toward patients with a specific condition not captured by one of the above categories.

General Population or Not Condition Specific - Measure is targeted toward or has been applied to the general population or to a patient group not limited by condition. Validation or application of the measure is not limited to particular patient disease or condition groups, or the disease/condition of interest was not specified.

Not Applicable - Measure does not focus on patients.

Setting

The Setting is the location where the measurement is taking place. Categories are not mutually exclusive. Measures may map to more than one category.

Measures that focus on a particular transition point are mapped to both the before and after setting (e.g., a measure of the transition from hospital discharge to outpatient care would map to *Inpatient Facility* and *Primary Care Facility*). Transitions from hospital to home are mapped to *Inpatient Facility* and *Primary Care Facility*, since patients discharged home are typically expected to follow-up with their primary care provider. When the setting is specified as “ambulatory care” without more specific details, the measure is mapped to *Primary Care Facility* and *Other Outpatient Specialty Care Facility*.

When a specialty is mentioned but it is not specified whether the specialist consult, visit or services were delivered through inpatient or outpatient settings, the measure is categorized as *Not Setting Specific*. For particular measures, some applications labeled the setting while others did not; these were mapped to both a specific setting (e.g., *Primary Care Facility*) and *Not Setting Specific*. *Not Setting Specific* is only checked if there is no setting specified in at least one application of the measure.

Inpatient Care Facility - Any care received by a patient admitted to any department of an acute care hospital. This includes patients admitted to the psychiatric department of acute care hospitals. This category does not include services provided by hospitals without an admission (e.g., emergency department, outpatient clinic or same-day surgery).

Emergency Care Facility - Care provided in an emergency department, ER, urgent care clinic, or other emergency setting, with or without an admission.

Primary Care Facility - We define ambulatory primary care facility as any setting described as primary care, or settings providing care by generalists or practitioners in internal medicine, family practitioners, general pediatricians or general practice providers. This includes settings described as a medical or healthcare home or PCMH.

Other Outpatient Specialty Care Facility - Any outpatient care facility that does not meet the definition of any other setting category. This includes outpatient specialty clinics such as cardiology, orthopedics, and also outpatient or same-day surgery centers. It does not include outpatient mental or behavioral health centers (classified as *Behavioral Health Care Facility*) or urgent care clinics (classified as *Emergency Care Facility*).

Behavioral Health Care Facility - Care provided in any facility or setting that specializes in mental or behavioral health. This includes psychiatric hospitals, substance use treatment centers and behavioral health clinics. It does not include the psychiatric department of an acute care hospital (classified as *Inpatient Care Facility*).

Long Term Care Facility - Any long-term care facility or institutional care setting, including nursing homes, skilled nursing facilities, incremental care facilities for the mentally retarded, residential care settings, or step-down facilities.

Home Health Care - Health or supportive care provided in the patient’s home by health care professionals.

Other Setting - Any other setting not included in one of the above categories, but that is specifically noted as the target location for use of the measure, or where the measure has been used in the past

(in published work). This might include coordination around physical or occupational therapy, rehabilitation, etc.

Not Setting Specific - The measure application is not limited to a particular type of setting, or the setting was not specified in measure development or application publications.

Appendix II. Identifying Measures

Main Indicator Sources

1. *Literature Search*. A measure-specific care coordination search was conducted to identify published literature related to the development, validation, and testing of measures of care coordination. The search strategy is outlined below.
2. *Care Coordination EPC Report*. As part of a previously published care coordination report (“Closing the Quality Gap: A Critical Appraisal of Quality Improvement Strategies”; Volume 7: Care Coordination), background research and a systematic review identified care coordination indicators in published studies.
3. *Panelist Calls*. A series of panel calls were held in order to obtain information regarding additional measures of care coordination and ongoing research and development in the field. Panel participants had backgrounds ranging from research and evaluation in care coordination to clinical practice. For a list of panel participants, please see Appendix III: Advisory Group Participants.
4. *NQF Draft Report*. NQF evaluated a list of 77 candidate measures and recommended a set of preferred practices across five domains of care coordination: 1) health care home, 2) proactive care plan, 3) communication, 4) information systems, and 5) transitions. The final report was released in October, 2010, shortly before completion of the *Atlas*.¹⁶
5. *Atlas Update Environmental Scan*. An extensive environmental scan of organizations active in care coordination and quality measurement, undertaken to update the *Atlas*. The two dozen organizations included in the scan were identified from the previous *Atlas* work and through suggestions from the project team, internet searches, and knowledge of the care coordination and quality measurement fields. The scan was performed between October 2012 and May 2013.

Literature Review Search Strategy

The final measure search used the following strategy:

[(“(“healthcare ” or “health care ” or care) adj3 (coordinat* or “co-ordinat*” or integrat*).tw.”) AND (“(rated or rating or indicator* or measure* or valid* or reliab* or outcome* or model* or scale* or subscale* or questionnaire*).tw. or methods.fs. or exp Questionnaires”)) NOT [(“exp geographic locations/ not exp united states/”)]

We compared our search strategy to RAND’s ACOVE-3 search strategy post-hoc, and we found no additional terms, phrases, or combinations that were not captured in the strategy outline above.

The search was limited to English language publications. Details of the search strategy development are included in the box below. This search was performed on July 13, 2010 for the original *Atlas*, and updated on January 11, 2013 for the updated *Atlas*. In addition, publications by known key researchers involved in care coordination measurement were also searched. Bibliographies of particularly relevant included references were also reviewed for any further sources of information.

¹⁶ National Quality Forum. Preferred practices and performance measures for measuring and reporting care coordination: a consensus report. Washington, DC: National Quality Forum; 2010.





Measure Selection

Original *Atlas* Measure selection

Measures for inclusion in the *Atlas* were identified in two steps. First, a list of potential measures was compiled from the search strategies outlined above, which yielded a total of 3448 unique measure sources. Measure sources were included if they featured any relation to measurement or evaluation of care coordination or of any of the care coordination domains included within our measurement framework, with an emphasis on specific instruments or measures. Although the ambulatory setting is the focus of this project, we did not exclude sources discussing measurement of care coordination in nonambulatory settings. Validity, testing, or feasibility of measures were not considered during this review phase.

A single reviewer compiled the potential measures list after reviewing titles and abstracts of all search results. A second reviewer provided input on measure sources for which inclusion was unclear and a decision was made through discussion.

Based on this preliminary review, 149 potential measure sources were identified to consider for inclusion in the *Atlas*. It is important to note that in some cases multiple sources related to a single measure, and in other cases a single source discussed multiple measures.

In the second step, we reviewed the full text of all articles on the potential measure list and made decisions about whether they should be included within the *Atlas*. Measures were excluded if, in the opinion of the reviewer, they did not meet all of the following criteria:

1. **Clear relevance to care coordination or at least one of the care coordination measurement framework domains.** Measures that did not include at least one instrument item that mapped to at least one framework domain were not included. Measures that contained only 1 or 2 minimally relevant items within a large instrument unrelated to care coordination were also excluded.
2. **A clearly defined and reproducible measure yielding quantitative data.** Examples of evaluations that did not meet this criterion were interview guides, focus group reports, or free-response questionnaires yielding textual data that required content analysis; quality improvement guides designed to walk users through a process of self-evaluation without yielding measurable data; and evaluations of specific programs or interventions tailored to the subject of study in such a way as to make use in any other situation very difficult without major modification.
3. **Information available demonstrating some valid measurement properties or that the measure was developed in association with a logic model that has evidence of causal linkages between the activities measured and outcomes desired.** Measures that underwent testing and were shown to have poor validity or reliability were not included in the *Atlas*.

In many cases, additional sources were consulted to address the testing criteria. When the decision about whether to include a measure seemed unclear, the primary reviewer consulted with additional team members and a decision was made through discussion.

Of the 149 potential measure sources identified, 70 were excluded. Of these, 31 were excluded due to lack of relevance (criterion 1); 34 were excluded because they were not a clearly defined, quantitative measure (criterion 2); and 38 were excluded due to unknown or poor validation or testing (criterion 3). Thirty-five potential measure sources met more than one exclusion criteria. In addition, 7 measures sources were excluded because we could not identify information necessary to assess suitability for inclusion in the *Atlas*. Our attempts to obtain the missing information from the developers of these measures were unsuccessful at the time of publication. A further 18 measure sources were not unique; that is, multiple sources pertained to a single measure. These sources were used to create the profiles but did not themselves contribute a unique measure.

In all, we include 61 measures in the *Atlas*, which are detailed in 78 profiles. The number of profiles is greater than the number of measures because for measures with multiple versions, we created separate profiles for versions with substantially different question items. In instances where the only difference between versions was a minor wording change to reflect a different population, setting, or year, we created just one profile to represent all versions.

Atlas Update Measure Selection

A similar process of measure selection was utilized during the *Atlas* update search. In total, we screened 1346 articles from the peer reviewed literature. Of these, we reviewed the full text for 157 articles, of which 19 yielded at least one potential measure. In addition, we reviewed a further 57 secondary sources, such as articles included within a systematic review. Together, these sources yielded 32 potential new measures that met the *Atlas* inclusion criteria. A further 133 potential measures were identified through the environmental scan, of which 65 were eligible for inclusion in the *Atlas*. The same *Atlas* measure selection criteria were used, with the following modifications:

- Measures that were currently endorsed by NQF at the time of review, or that were based on evidence-based guidelines, were considered to meet the validity criterion.
- Only measures applicable to the primary care setting were included in this update. This includes measures that are not setting specific, or that are applicable in primary care as well as other settings. Primary care was selected as a focus given its often central role in coordinating care across settings, particularly as accountable care and patient-centered medical home delivery models are more widely implemented. Furthermore, this focus aligns with the original scope of the *Atlas* that centered on measures that might reasonably be applied in the ambulatory care setting.
- Measures tailored towards individuals with a particular disease or condition were not included in the update. This exclusion reflects the desire to focus on measures that are broadly applicable. Measures applicable to patients with a range of chronic diseases were included, but those applicable to only a particular disease were not.

In addition, measures relying exclusively on chart review or administrative claims data (i.e., not utilizing survey methods) were not included in the *Atlas* update. However, EHR-based measures are reviewed in the chapter on emerging trends in care coordination measurement, although individual profiles for these measures are not included.

In total, the *Atlas* update includes 20 additional measures in 22 profiles. A further 26 EHR-based measures are reviewed in [Chapter 4](#).

Limitations

Although we attempted to identify as many potential measures of care coordination as possible through our various search strategies, like any systematic review, this search likely missed some potentially relevant sources. In addition, the scope of measures included in the *Atlas* update was narrowed, to focus on those aspects of coordination measurement likely of interest to the greatest number of users. Decisions about this focus were reached through discussion and consensus with members of the project team. When a potential measure of care coordination was reported in a source without including the measure instrument, we contacted the measure steward to request a copy of it. We were also limited in our ability to provide information on the feasibility and cost of using measures by what was reported in the literature; few studies describe these aspects of measurement.

Appendix III. Advisory Group Participants

These advisory groups served during development of the original *Atlas*.

GROUP 1 – Focus on Candidate Measures/Measure Gaps (Stakeholder/Informant Panel)

Karen Adams, Ph.D. Vice President of National Priorities, National Quality Forum

Anne-Marie Audet, M.D., MSc. Vice President, Quality Improvement and Efficiency, The Commonwealth Fund

Helen Burstin M.D., M.P.H. Senior Vice President, Performance Measurement, National Quality Forum

Eric Coleman, M.D., M.P.H. Professor of Medicine, Division of Healthcare Policy and Research & Geriatric Medicine, University of Colorado, Denver

Jinnet Fowles, Ph.D. Senior Vice President, Park Nicollet Institute

Sarah Scholle, M.P.H., Dr.P.H. Assistant Vice President for Research, National Committee for Quality Assurance

Sara Singer, Ph.D., M.B.A. Assistant Professor of Healthcare Management and Policy, Harvard School of Public Health

Vincenza Snow, M.D., F.A.C.P. Director, Clinical Programs and Quality of Care, American College of Physicians

Scott Stumbo, M.A. Senior Research Associate, Child and Adolescent Health Measurement Initiative, Oregon Health and Science University

Jonathan Weiner, Dr.P.H. Director, PhD Program in Health Services Research and Policy; Deputy Director, Health Services R&D Center ; Faculty Member and Executive Committee Member, Division of Health Sciences Informatics, Department of Health Policy and Management, Johns Hopkins Bloomberg School of Public Health

Daniel Wolfson, M.H.S.A. Executive Vice President and Chief Operating Officer, American Board of Internal Medicine Foundation

**GROUP 2 – Focus on Evaluation *Atlas* Design
(Expert Panel)**

Melissa Affronti, Ph.D., L.M.S.W. Senior Program Associate, Evaluation and Services Research. Coordinated Care Services, Inc. Adjunct Instructor, The College at Brockport GRC-MSW Program

Richard Antonelli, M.D., M.S. Medical Director, Children's Hospital Integrated Care Organization (CHICO) and Associate/ Interim Medical Director for Quality, Physicians' Organization, Children's Hospital Boston/Harvard Medical School

Carol Cain, Ph.D. Director, Clinical Integration, The Permanente Federation

Susan Edgman-Levitan, P.A. Executive Director, John D. Stoeckle Center for Primary Care Innovation, Massachusetts General Hospital; Founding President, Picker Institute

Mark Friedberg, M.D., M.P.P. Associate Natural Scientist, RAND Corporation

Adele Gorges. Director, Western New York Care Coordination Program, c/o Coordinated Care Services, Inc.

Tom Jewell, Ph.D. Adjunct Assistant Professor of Psychiatry, University of Rochester Medical Center. Director, Evaluation and Services Research, Coordinated Care Services, Inc.

Sally Kraft, M.D., M.P.H. Medical Director for Care and Quality Innovations, University of Wisconsin Medical Foundation

Gerri Lamb, Ph.D., R.N., F.A.A.N. Associate Professor, Research Support, Arizona State College of Nursing and Health Innovation

Denise Love, M.B.A., R.N. Executive Director, National Association of Health Data Organizations

Dana Safran, Sc.D. Senior Vice President for Performance Measurement and Improvement, Healthcare Services Division, Blue Cross Blue Shield of Massachusetts; Associate Professor of Medicine, Tufts University School of Medicine

Shoshana Sofaer, Dr.P.H. Professor; Robert P. Luciano Chair of Healthcare Policy, Baruch College, City University of New York School of Public Affairs

Bert Vrijhoef, Ph.D. Director, Department of Integrated Care, Maastricht University Medical Centre; Professor, Chronic Care, Tilburg University

Eric Weil, M.D. Unit Chief, Adult Medicine Practice, Revere Health Care Center

Daniel Wolfson, M.H.S.A. Executive Vice President and Chief Operating Officer, American Board of Internal Medicine Foundation

Appendix IV. Care Coordination Measure Instruments

Appendix IV, available from the *Atlas* website, contains copies of the individual measure instruments included in the *Care Coordination Measures Atlas* as well as contact information for the measure developer, when available. (<http://www.ahrq.gov/professionals/prevention-chronic-care/improve/coordination/atlas2014/appendix4.html>)

Appendix IVa. (with new measures that have been added to this updated version of the *Atlas*) is available at:

(<http://www.ahrq.gov/professionals/prevention-chronic-care/improve/coordination/atlas2014/appendix4a.pdf>)