



Framework for Measuring Nurses’ Contributions to Care Coordination

Originated By: ANA Care Coordination
Quality Measures
Professional Issues Panel

Developed By:

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BACKGROUND

The American Nurses Association (ANA) is deeply committed to improving patient outcomes and reducing health care costs through care coordination—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 healthcare services” (McDonald et al., 2007, p. 5). Care coordination is one of six priorities that guide the nation’s plan for improving health care quality—that is, better care, healthier people and communities, and lower cost—under the National Quality Strategy (U.S. Department of Health and Human Services, 2013). Collaboration among all stakeholders is a precondition for achieving these broad goals and the priorities that drive them. It will take the combined effort of engaged patients, caregivers, and consumer advocates; knowledgeable employers, purchasers, and public and private payers; and committed and skillful health care practitioners and providers. Achieving the National Quality Strategy and its vision depends on nurses—the single largest segment of the health care workforce.

Nurses are integral to the delivery of higher quality care coordination. The profession drives care processes that improve patients’ outcomes and facilitate effective interprofessional collaboration, while stewarding the efficient and effective use of healthcare resources (ANA, 2012). From the perspective of *Nursing: Scope and Standard of Practice for Nursing*, 2nd ed. (ANA, 2010), accountability across patient populations and settings—a component of care coordination—is clearly delineated as part of nurses’ responsibilities and is a core professional standard of practice. Both anecdote and evidence demonstrates nurses’ contributions in delivering and improving effective care coordination; however, there are no universally accepted measures for quantifying those contributions. Since care coordination is a collaborative process for which nurses assume specific accountabilities, a framework which articulates nursing’s unique contributions to care coordination and enables all stakeholders to systematically quantify, assess, and evaluate those contributions is an urgent component to achieving the National Quality Strategy.

ANA’s *Framework for Measuring Nurses’ Contributions to Care Coordination* responds to this urgent call. The Framework was developed by the Quality Measures Professional Issues Panel convened in January 2013, following a Call for Applications. Members of the Panel composed of a Steering Committee of 12 registered nurses and an Advisory Committee of considerably more, possessed deep expertise in care coordination, nursing practice, quality improvement, performance measurement, research and policy and covered the full range of practice arenas. This knowledge and experience is reflected in the broad theoretical bases on which the framework draws and the more granular organizing structure to which it adheres.

This report is the third in a series of ANA policy documents addressing care coordination and it presents the Framework by explaining its origin, detailing its component parts, and illustrating how it combines to inform quality measurement and improve care within the broader health care environment. The report’s supplements are intended to provide additional information and a summary of the supporting evidence base.

FRAMEWORK

ANA's Framework represents a first step in identifying and quantifying the aspects of care coordination driven by nurses and lays out a conceptualization—based on evidence—that describes nursing's role in achieving higher quality care coordination. However, the Framework extends beyond mere conceptualization. By providing a rubric for how this conceptualization can be operationalized, a roadmap now exists for a performance measurement and accountability system which describes nurses' contributions to care coordination.

This Framework serves as a conceptual model for identifying nurses' important contributions to care coordination and approaches in measuring those contributions within the larger healthcare and measurement contexts. It is intended to begin to describe the unique ways in which nurses contribute to coordinated care, and also demonstrate the approach consumers, nurses and other practitioners, professional organizations, employers and payers, and the broader healthcare community should take to evaluate and assure those contributions.

In its entirety, ANA's Framework is composed of three elements:

- Guiding principles
- Structural components
- Measurement context

The Guiding Principles (box 1) presents an idealized conceptualization of the Framework and grounds it in a common worldview. The Structural Components (box 2) provide a comprehensive and inclusive architecture for the Framework including its five domains, which loosely track to types of performance measures (i.e., outcomes, processes, experience of care, cost/resource use, and system mechanisms and structure measures), The Institute Of Medicine (IOM) six aims for quality improvement, serve as the overarching aspirations for reducing the burden of illness, injury, and disability, and improving health and functioning (i.e., safe, effective, person-centered, timely, efficient, equitable).

The Measurement Context (Figure 1) is a descriptive illustration and conceptual marker of the significant role the environment plays in nurses' abilities to effectively improve care coordination. This context reflects the system-, institutional-, and individual-level contributors that facilitate and/or impede access to health care, generally, and care coordination, specifically. Placement of the Framework within the broader measurement landscape acknowledges the interplay between that which is occurring in the political, economic, social, and cultural environment and nurses' abilities to deliver high quality care.

Figure 2 illustrates the architecture of the Structural Components and provides a graphic tool for cataloguing existing measures and identifying measurement gaps. The X and Y axes of the graphic intersect to form individual cells. These cells can be populated with prioritized concepts and measures for accountability that better capture nursing's contribution to high quality care coordination. Similarly, the cells can be used to identify those areas in needs of measure development (i.e. empty cells).

In summary, ANA's Framework provides a dynamic roadmap that can be used to identify measures of care coordination which reflect nurses' unique roles, strengthen system accountabilities, and benefit patients and the health system. Additionally, the Framework can be used to paint a portrait of the measurement environment and to establish priorities for short- and long-term measure development. Ultimately, the Framework provides a useful rubric for identifying meaningful existing measures and promising future measures that capture nurses' contributions to care coordination.

GUIDING PRINCIPLES

Box 1: Guiding Principles

The following guiding principles represent the SC's assumptions about the characteristics of an "ideal" framework for describing and measuring nursing's contributions to care coordination—they are aspirational in that they may not all be achievable, short- or long-term, but reflect an archetype for what is most desirable for the delivery of high value, patient-centered care.

The ANA Framework for Care Coordination Quality Measurement will be:

- *Transparent*—Any conceptual or organizing framework that describes nursing's contribution to care coordination will be explicit, fully documented, and publicly available. This does not prohibit the framework, or other original, related works, from being copyrighted.
- *Comprehensible*—The framework will be comprehensible to internal and external stakeholders who are engaged in the National Quality Enterprise. The framework will be written in English and key terms will be defined.
- *Aligned*—The framework will be aligned with the nation's "north star" for quality, the National Quality Strategy, and other conceptualizations of care coordination, nursing care quality, quality measurement, and accountability (i.e., public reporting and performance-based payment).
- *Evidence-based*—The framework will be drawn from science. Practically, this means that recommendations made will be based on that which has been documented in the scholarly, published literature as valid, reliable, and generalizable.
- *Comprehensive*—The framework will be an inclusive conceptualization of nurses' contributions to care coordination, reflect that which is considered ideal and/or most effective, and drive the development and/or selection of a complete set of measures that reflect nurses' contributions to care coordination. To be comprehensive, measures representing all components of the framework—e.g., each of the five care coordination measurement domains—will be identified and available for use.
- *Parsimonious*—While inclusive, the framework will strive to be as efficient as possible by including the fewest number of components—i.e., areas for measurement—that fully address nurses' contributions to care coordination, balancing the effort associated with measurement and its opportunity to improve nurses' contributions to the quality of care coordination and/or driving measures that serve multiple purposes.
- *Patient-centered*—The Framework recognizes the unique roles nurses assume in establishing trusting therapeutic relationships with patients, their families and informal caregivers as they move within and across the health system. Care coordination should respond to the needs, values and expressed preferences of the individuals and should not be limited by conditions, diagnoses, disorders, or other distinguishing features, such as payer source. However, recognizing that certain populations are in greater need than others, the framework will emphasize that care coordination is most vital to those among high risk and vulnerable populations, which includes children, frail elderly, chronically ill, dual eligible (i.e., persons eligible for both Medicare and Medicaid), disabled, persons receiving end of life and/or palliative care, mentally ill and/or those with substance abuse, and uninsured and underinsured.
- *Cross-cutting*—The Framework will be relevant to all settings of care and services rendered by the health care system in all states of health and illness, and over time.

(Box 1 continued)

- *Substantive*—Recognizing that coordination involves the exchange of information and the assumption of accountability, especially at points of transfer, the framework will emphasize these concepts.
- *Professionally relevant*—Given the diversity of the nursing profession and the roles and settings in which nurses practice, the Framework will emphasize the role of RNs but be inclusive of nurses educated at all levels including advance practice registered nurses (APRNs) and positions of nursing leadership.
- *Forward thinking*—To ensure consistency and alignment, the Framework recognizes the contribution of the IOM's 2010 report on the future of nursing. In principle, this Framework aligns with and conforms to the recommendations advanced by this report, *The Future of Nursing: Leading Change, Advancing Health*.
- *Interprofessional*—While the focus of the Framework is nurses' contribution to care coordination, nurses do not practice in isolation. For this reason, the Framework recognizes that high value care is delivered by teams of health care professionals and is applicable beyond the nursing profession. For this reason, the Framework will be consistent with other team-based conceptualizations of care coordination.
- *Nursing leadership roles* —The Framework recognizes the importance of nursing leadership roles and nurses in person-centered care coordination (e.g., assume leadership roles in directing care coordination, including complex care management and transitional care, directing the marshaling of resources to meet individualized needs).
- *Responsive to contemporary trends and innovations in performance measurement*—The Framework will be an organizing structure that describes nurses' contributions to care coordination, and provides a schema that illustrates key leverage points for measurement without specifying precise measures per se. However, there are a number of well-established and/or emerging goals established by the National Quality Enterprise that are driving endorsement and/or measure selection decisions to which the framework will be consistent. While not complete, these goals for measures include:
 - *"Families"*—Measures should be part of pre-screened groups carefully selected to work cohesively in pursuit of specific health care improvement aims over time and not specific to any health care service location.
 - *Electronically produced*—Data for measurement should be derived from electronic sources such as eMeasures, which are based on the Health Quality Measure Format (HQMF), or as a natural byproduct of care and/or self-reported by the patients (e.g., functional status, management of symptoms or other data that identifies the patient and/or family/caregivers assessment of goal achievement).
 - *Promote equitable access*—Considers health care disparities and/or populations at risk for disparities by addressing race, ethnicity, socioeconomic status, preferred language, health literacy, gender, age, or geographical considerations).
 - *Outcome-oriented*—Focus on outcomes, composites, process measures that are proximal to outcomes, and appropriate care (e.g., overuse).
 - *Specified at the appropriate level of analysis*—Components of the care coordination framework will be suitable for measurement at the individual practitioner (or clinician) level, and appropriate accountability lies with the individual provider on the team. Other components, however, may be more suitable for measurement at the practice- or group-, team- or organizational- -levels.

The framework will be consistent with these and other goals for measurement.

STRUCTURAL COMPONENT PARTS

Box 2: Structural Component Parts

1. *Definition of and the evidence-based activities associated with effective care coordination*—The Framework assumes the definition of care coordination that is presented in the AHRQ Atlas (i.e., deliberate organization of patient care activities between two or more participants...involved in a patient's care to facilitate the appropriate delivery of health care services) and integrates the care coordination mechanisms—those are coordination activities and board approaches—identified in the Atlas with the domains identified in the NQF-endorsed Definition and Framework for Measuring Care Coordination (2006). Additional interventions isolated from the scholarly literature have been incorporated. The byproduct is a combined list of 13 constructs that comprise the nursing care coordination processes measurement domain:
 - comprehensive assessment of patient/family assets, needs, and goals;
 - care planning;
 - integration of medical, social, cultural, linguistic, and behavioral aspects of care;
 - patient and family activation, engagement, and self-management;
 - communication and health literacy;
 - care management;
 - medication management;
 - palliation, end of life care, and symptom management;
 - monitoring, follow up, and responding to change;
 - care transitions;
 - linkages to and partnerships with community resources;
 - community-and population-health based care management (e.g., case finding, assessing social determinants, resource alignment, etc.); and
 - shared accountability/ responsibility.

2. *System-level mechanisms and structural aspects that support care coordination*—As a representation of the attributes of the settings in which nursing care occurs, the Framework draws on the AHRQ Atlas but improves on it by incorporating resource elements and organizational structures that mediate nurses' contributions to care coordination from conceptualizations identified in scholarly literature. The resulting six constructs include:
 - workforce (i.e., education, interpersonal performance, staffing);
 - service integration (e.g., interprofessional teamwork)
 - health home;
 - transparency;
 - health IT-enabled coordination; and
 - community as a partner.

(Box 2 continued)

3. *Aims for quality improvement to propel the nation to achieve its goals for reducing the burden of illness, injury, and disability, and improving health and functioning*—The Framework relies on the IOM's six aims for quality improvement: safety, effectiveness, patient-centeredness, timeliness, efficiency, and equity.
4. *Types of performance measures*—Drawing on the Measure Application Partnership (MAP) selection criteria, The Framework recognizes five types of measures: outcomes, processes, and measures of experience of care, cost/resource use/appropriateness (e.g., reduction in waste), and structure.
5. *Goals for care coordination*—The Framework employs the national goals and endpoints for care coordination as described by the National Priorities Partnership (NPP) and AHRQ Atlas, respectively. These have been enhanced with goals identified from relevant conceptualizations described in the scholarly literature. Together, 14 constructs comprise the outcomes of care domain.
 - patient/family goals and unmet needs;
 - feedback from all patients and family members/informal caregivers regarding coordination of care;
 - quality of life;
 - disease/injury prevention and health promotion;
 - functional status (e.g., for congestive heart failure patients);
 - communication around medication information;
 - clinical outcomes (e.g., glycosylated hemoglobin levels for diabetic patients);
 - treatment adherence;
 - service adherence (e.g., remain in contact with services for mentally ill patients);
 - 30-day hospital readmissions;
 - disease-specific hospital admissions;
 - preventable emergency department (ED) visits;
 - mortality; and
 - disease-specific mortality.

Figure 2: Visual Representation of Framework for Measuring Nurses' Contributions to Care Coordination

NURSES' CONTRIBUTIONS TO HIGHER QUALITY CARE COORDINATION							
MEASUREMENT		AIMS FOR QUALITY IMPROVEMENT					
DOMAINS	CONSTRUCTS	<i>Safe</i>	<i>Effective</i>	<i>Patient-Centered</i>	<i>Timely</i>	<i>Efficient</i>	<i>Equitable</i>
<i>Short- and Long-Term Outcomes of Care</i>	Patient/family goals and unmet needs						
	Feedback from all patients and family members/informal caregivers regarding coordination of care						
	Quality of life						
	Disease/injury prevention and health promotion						
	Functional status						
	Communication around medication information						
	Clinical outcomes						
	Treatment adherence						
	Service adherence (e.g., remain in contact with services for mentally ill patients)						
	Preventable admissions/readmissions (e.g., unplanned 30-day hospital readmissions)						
	Disease-specific hospital admissions						
	Preventable overuse/inappropriate use (e.g., emergency department [ED] visits)						
	Mortality						
	Disease-specific mortality						
	<i>Nursing Care Coordination Processes</i>	Comprehensive assessment of patient/family assets, needs, and goals					
Care planning							
Integration of medical, social, cultural, linguistic, and behavioral aspects of care							
	Patient and family activation, engagement, and self-management						

Measure concept:
personalized, individual advanced care planning

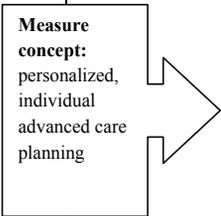
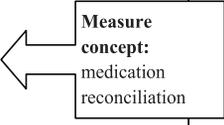
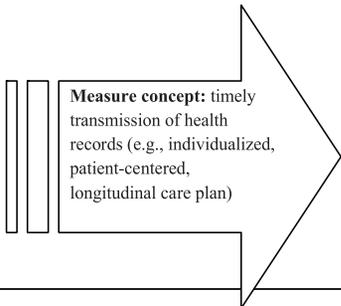


Figure 2: Visual Representation of Framework for Measuring Nurses' Contributions to Care Coordination (continued)

NURSES' CONTRIBUTIONS TO HIGHER QUALITY CARE COORDINATION							
MEASUREMENT		AIMS FOR QUALITY IMPROVEMENT					
DOMAINS	CONSTRUCTS	<i>Safe</i>	<i>Effective</i>	<i>Patient-Centered</i>	<i>Timely</i>	<i>Efficient</i>	<i>Equitable</i>
	Communication and health literacy Care management Medication management Palliation, end of life care, and symptom management Monitoring, follow up, and responding to change Care transitions Linkages to and partnerships with community resources Community- and population-health based care management Shared accountability/responsibility						
<i>Experience of Care</i>	Feedback from all patients regarding coordination of care Feedback from family members and informal caregivers regarding coordination of care Feedback from nursing colleagues and interprofessional team members regarding coordination of care						
<i>Cost/Resource Use/ Appropriateness (e.g., reduction in waste)</i>							
<i>System Mechanisms and Structural Components</i>	Workforce (e.g., education, interpersonal performance, staffing/skill mix, practicing to top of license) Service integration (e.g., inter-professional teamwork) Health home Transparency Health IT-enabled coordination Community as partner						

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GLOSSARY

Accountability—Make clear the responsibility of participants in a patient's care for a particular aspect of that care. The accountable entity (whether a healthcare professional, care team, or healthcare 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 (McDonald et al., 2010, p. 21).

Adverse event—An event that results in unintended harm to the patient by an act of commission or omission rather than by the underlying disease or condition of the patient (IOM, 2004b, p. 327).

Care coordination—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 healthcare services. Organizing care involves the marshaling 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 (McDonald et al., 2007).

Care coordinator—The care provider responsible for identifying an individual's health goals and coordinating services and providers to meet those goals. Given the needs of the individual, the care coordinator may be a nurse care manager, social worker, community health worker, or lay person. Regardless of the credential, the care coordinator will have expertise in self-management and patient advocacy and will be adept at navigating complex systems and communicating with a range of people (Craig, Eby, & Whittington, 2011, p. 7).

Care Plan—The plan of care (care plan) is the structure used by all stakeholders, including the patient, to define the management actions for the various conditions, problems, or issues identified for the target of the plan. It is the structure through which the goals and care planning actions and processes can be organized, planned, communicated, and checked for completion. Specifically, a care plan is composed of the following elements: a "Problem" is another data type; an "Intervention" may be a procedure, medication, substance... (any data type that is an action); the "goal" is what is expected to happen; and the "outcome" is what happened which can be shown by other data types (National Quality Forum, 2012c, p. 88).

Case Management—A collaborative process of assessment, planning, facilitation, care coordination, evaluation, and advocacy for options and services to meet an individual and family's comprehensive health needs through communication and available resources to promote quality cost-effective outcomes, according to the Case Management Society of America (CMSA). Related activities to Case Management include care coordination; complex condition management; population health management through wellness, disease, and chronic care management; and promoting transitions of care services (CMSA, 2009, p. 2).

Culturally competent—According to the National Center for Cultural Competence (NCCC), providing culturally competent healthcare services requires an understanding of:

- Cultural beliefs, values, traditions and practices
- Culturally defined, health-related needs of individuals, families and communities
- Culturally based belief systems of the etiology of illness and disease and those related to health and healing;
- Attitudes toward seeking help from healthcare providers (NCCC, 2003, p. 4)

Conceptual Framework/Logic Model—A brief description of a model, framework, or design if utilized in the development of the measure (McDonald, 2010, p. 27).

Health Literacy—“The degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions,” (Ratzan and Parker, 2000, p. vi) as adopted by the IOM (2004a, p. 4).

Health home and/or medical home—A source of usual care selected by the patient which should function as the central point for coordinating care around the patient’s needs and preferences. The medical home should also coordinate between all of the various team members, which include the patient, family members, other caregivers, primary care providers, specialists, other healthcare services (public and private), and non-clinical services as needed and desired by the patient (National Quality Forum, 2006).

Health-related quality of life (HRQL)—The aspects of overall quality of life that can be clearly shown to affect health—either physical or mental. On the individual level, this includes physical and mental health perceptions and their correlates—including health risks and conditions, functional status, social support, and socioeconomic status. (Center for Disease Control and Prevention, 2011)

Health-related behavior: Personal attributes such as beliefs, expectations, motives, values, perceptions, and other cognitive elements; personality characteristics, including affective and emotional states and traits; and overt behavior patterns, actions, and habits that relate to health maintenance, to health restoration, and to health improvement (Gochman, 1997).

Information transfer—The bidirectional flow of information or handover, such as patient-centered care plans, including patient goals, medical history, medication lists, test results, and other clinical data, from one participant in a patient’s care to another (McDonald et al., 2010; National Transitions of Care Coalition, 2008).

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 (McDonald et al., 2010, p.21).

Longitudinal Care Plan—A single, integrated plan that is patient-centered and reflects the patient’s values and preferences. All team members, including the patient and family caregivers, are actively involved in formulating and updating the care plan and the associated self-management goals. The longitudinal care plan supports achievement of patient goals along the continuum of care, including chronic, acute, and episodic care; home health; ongoing self-management; and supports cohesive transitions in care. The longitudinal care plan should include a mechanism for capturing important elements such as:

- Patient preferences
- Problem list
- Patient goals (shared agreement with goals by patient/family caregivers and providers)
- Interventions (Interdisciplinary/Patient/Family Caregiver) to reach goals (patient must have means to communicate interventions and progress towards goals specifically related to self-management plan)
- Evaluation of progress towards goals and resolution of goals (National Quality Forum, 2012c, p. 92)

Nurse—Registered professional nurse.

Nurse Sensitive—Nursing-Sensitive Quality Indicators (NSI) are those indicators that capture care or its outcomes most affected by nursing care. Nursing-sensitive indicators reflect the structure, process, and outcomes of nursing care. The structure of nursing care is indicated by the supply of nursing staff, the skill level of the nursing staff, and the education/certification of nursing staff. Process indicators measure aspects of nursing care such as assessment, intervention, and RN job satisfaction. Patient outcomes that are determined to be nursing sensitive are those

that improve if there is a greater quantity or quality of nursing care (e.g., pressure ulcers, falls, and intravenous infiltrations). Some patient outcomes are more highly related to other aspects of institutional care, such as medical decisions and institutional policies (e.g., frequency of primary C-sections, cardiac failure) and are not considered “nursing-sensitive” (ANA, 2013. NQF, 2004).

Outcome measure—Changes (desirable and undesirable) in individuals and populations that are attributed to health care including health status, behavior, knowledge, function, quality of life (QOL), and patient satisfaction. Types of outcomes measures include:

- End result (such as mortality, other adverse event [healthcare-acquired condition], or function)
- Intermediate outcomes (e.g., physiologic or biochemical values such blood pressure or lipid value). These precede and may lead to longer-range end outcomes
- Proxies used to indicate an outcome (e.g., health care utilization such as hospital readmission indicates deterioration in health status since discharge) (Donabedian, 1998, NQF, 2011)

Patient Activation—Individual’s knowledge, skill, and confidence for managing his/her own health and health care (Hibbard & Mahoney, 2010, p. 377).

Patient Activation Measure (PAM)—A tool that quantifies an individual’s level of activation, or engagement, in their care. Patients’ scores are assigned to one of four stages of activation:

- Stage 1: The patient does not yet understand that an active role is important
- Stage 2: The patient lacks the knowledge and confidence to take action
- Stage 3: The patient is beginning to take action
- Stage 4: The patient is maintaining behaviors over time (Hibbard, 2004, Nash, 2010, p. 285)

Patient Centered—Providing care that is respectful of and responsive to individual patient and family/caregiver preferences, needs, and values and ensuring that patient values guide all clinical decisions (Institute of Medicine, 2001).

Patient engagement—The process by which patients become invested in their own health through effective patient engagement programs. These programs provide patient information and tools needed and empower patients and family/other caregivers to take control of their care, and involve them in evaluating their care. Patient engagement can be conceived at three levels:

1. Health care leadership commits to embracing a new cultural mindset (e.g., organizational design and governance, health care organizations reach out to consumers for consumer input).
2. Patients, families, and consumer representatives gain skills to effectively partner with clinicians. This involves consumers and clinician “champions” working with patients, families, and consumers within health systems and teams.
3. *Policy making*—consumers are involved in the decisions that communities and society make about policies, laws, and regulations in public health and health care (Carman, K. L. et al., 2013; Hibbard, 2013).

Patient-reported outcome (PRO)—Any report of the status of a patient's health condition that comes directly from the patient, without interpretation of the patient's response by a clinician or anyone else. PRO domains included in this project encompass:

- Health-related quality of life, including functional status
- Symptom and symptom burden
- Experience with care
- Health-related behaviors (National Quality Forum, 2012c)

PRO measure (PROM)—An instrument, scale, or single-item measure used to assess the PRO concept as perceived by the patient, obtained by directly asking the patient to self-report (e.g., PHQ-9) (National Quality Forum, 2012c).

Patient safety—The prevention and mitigation of harm caused by errors of omission or commission that are associated with health care, and involving the establishment of operational systems and processes that minimize the likelihood of errors and maximize the likelihood of intercepting them when they occur (NQF, 2011).

Process measure—The interactions between healthcare clinician and patient; a series of actions, changes, or functions bringing about a result in terms of appropriateness, acceptability, timeliness, completeness, or competency. (Donabedian, 1998).

Quality—Continually reducing the burden of illness, injury, and disability, and improving health and functioning by pursuing six major aims—safety, effectiveness, patient-centeredness, timeliness, efficiency, and equity (Institute of Medicine, 2001).

- *Safe*—Avoiding injuries to patients from the care that is intended to help them.
- *Effective*—Providing services based on scientific knowledge to all who could benefit and refraining from providing services to those not likely to benefit (avoiding underuse and overuse, respectively).
- *Patient-centered*—Providing care that is respectful of and responsive to individual patient preferences, needs, and values and ensuring that patient values guide all clinical decisions.
- *Timely*—Reducing waits and sometimes harmful delays for both those who receive and those who give care.
- *Efficient*—Avoiding waste, including waste of equipment, supplies, ideas, and energy.
- *Equitable*—Providing care that does not vary in quality because of personal characteristics such as gender, ethnicity, geographic location, and socioeconomic status (IOM, 2001).

Quality Data Model (QDM) —An information model that defines and describes clinical concepts in a standardized format to clearly and consistently represent concepts for use across all quality measures. The National Quality Forum requires that quality measure concepts be assessed through the QDM prior to fully specifying and testing a quality measure. (National Quality Forum, 2013b)

Quality measure—A mechanism to assign a quantity to quality of care by comparison to a criterion (AHRQ, 2013).

Social determinants of health—The complex, integrated, and overlapping social structures and economic systems that are responsible for most health inequities. These social structures and economic systems include the social environment, physical environment, health services, and structural and societal factors. Social determinants of

health are shaped by the distribution of money, power, and resources throughout local communities, nations, and the world (World Health Organization, 2008).

Structural measure—The conditions under which care is provided (Donabedian, 1998).

Transitional care—A range of time limited services and environments that complement primary care and are designed to ensure health care continuity and avoid preventable poor outcomes among at risk populations as they move from one level of care to another, among multiple providers, and across settings. Transitional care services optimally bridge the gap among a diverse range of providers, services, and settings by the systematic application of evidence-based interventions that have typically incorporated strategies intended to improve communication and transfer of information within and across hospital and post-acute care services, enhance post-acute care follow-up, and decrease gaps in care through the use of a single, consistent provider (Naylor, 2002; Coleman & Boulton, 2003; Naylor, Aiken, Kurtzman, Olds, & Hirschman 2011).

Teamwork—Focused on coordination and integration among separate healthcare entities participating in a particular patient's care (whether healthcare professionals, care teams, or healthcare organizations) into a cohesive and functioning whole capable of addressing patient needs (McDonald et al., 2007).

Value—The value of health care is subjective. It weighs costs against the health outcomes achieved, including patient satisfaction and quality of life (National Quality Forum, 2013a, p. 12).

Table 1: Summary of the Relevant Gray and Scholarly Literatures
 (*title identified from the gray literature)

Alternative Conceptualizations of Nursing Care and Care Coordination		
Theory, Framework, or Model Source	Summary	Domains, Key Concepts, and Other Significant Elements
<p>1. Agency for Healthcare Research and Quality (AHRQ) Care Coordination Atlas*</p> <p>(NOTE: See attachment 1 for visual representation.)</p> <p>McDonald KM, Schultz E, Albin L, Pineda N, Lonhart J, Sundaram V, Smith-Spangler C, Brustrom J, and Malcolm E. (2010). <i>Care Coordination Atlas Version 3</i> (Prepared by Stanford University under subcontract to Battelle on Contract No. 290-04-0020). AHRQ Publication No. 11-0023-EF. Rockville, MD: Agency for Healthcare Research and Quality. November 2010. Retrieved at Retrieved from http://www.ahrq.gov/professionals/systems/long-term-care/resources/coordination/atlas/care-coordination-measures-atlas.pdf.</p>	<p>AHRQ evaluators considered and drew from various existing sources (e.g., Antonelli, 2009; CMS, 2004; NQF, 2006) to develop its care coordination "Atlas" (i.e., care coordination definition, measurement framework, and accompanying set of measures for assessing care coordination interventions in research studies and demonstration projects).</p> <p>Ultimately, Atlas' framework can be understood in relationship to other conceptual models such as the NQF Framework (2006) and Organizational Design (Nadler, 1988).</p>	<p>Activities that have been hypothesized or demonstrated to facilitate care coordination:</p> <ul style="list-style-type: none"> • 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 <p>Broad approaches commonly used to improve the delivery of health care, including improving care coordination:</p> <ul style="list-style-type: none"> • Teamwork focused on coordination • Health care home • Care management • Medication management • Health IT-enabled coordination <p>Care coordination effects from three perspectives:</p> <ul style="list-style-type: none"> • Patient/family • Health care professionals • System representatives
<p>2a. Andersen Behavior Framework*</p> <p>(NOTE: See attachment 2a for visual representation.)</p> <p>Andersen RM. (1995). Revisiting the behavioral model and access to medical care: does it matter? <i>J Health Soc Behav</i>,36(1),1–10.</p> <p>(NOTE: As adapted and summarized in McDonald KM, Sundaram V, Bravata DM, Lewis R, Lin N, Kraft S, McKinnon M, Paguntalan H, Owens DK. <i>Care Coordination</i>. (2007). Vol 7 of: <i>Shojania KG, McDonald KM, Wachter RM, Owens DK, editors. Closing the Quality Gap: A Critical Analysis of Quality Improvement Strategies. Technical Review 9</i> (Prepared by the Stanford University-UCSF Evidence-based Practice Center under contract 290-02-0017). AHRQ Publication No. 04(07)-0051-7. Rockville, MD: Agency for Healthcare Research and Quality. June 2007. Retrieved from http://www.ahrq.gov/research/findings/evidence-based-reports/caregaptp.html).</p>	<p>Originally intended to predict and explain access to health care—i.e., use of health care services by individuals</p> <p>More recently applied to model clinician response to quality-based payment incentives</p>	<p>Conceptualizes a framework to study access to health care as proceeding from health policy objectives through the characteristics of the health care system and of the populations at risk—referred to as the inputs—to the outcomes or outputs: i.e., actual utilization of health care services and consumer satisfaction with these services.</p> <p>As applied to care coordination, the framework is interpreted to suggest that coordination of health services relates to three concepts: the participants' predisposition to coordinate care, the resources that enable or impede coordination, and the participants' need for coordination.</p>

Alternative Conceptualizations of Nursing Care and Care Coordination

Theory, Framework, or Model Source	Summary	Domains, Key Concepts, and Other Significant Elements
<p>2b. Framework for the study of health care access. (Aday and Andersen)</p> <p>(NOTE: See attachment 2b for visual representation.)</p> <p>Aday, L.A., Andersen, R. (1974) A Framework for the Study of Access to Medical Care. <i>Health Services Research</i>, 9(3), 208-210</p>	<p>Andersen model integrated into a framework for health policy designed to affects attributes of the health care system and the population at risk to improve care access and consumer satisfaction</p>	<p>Concepts on access and medical care are integrated into a framework for health policy. The health policy is designed to affect characteristics of the health care delivery system and of the population at risk in order to bring about changes in access of care (e.g., the utilization of health care services) and in the satisfaction of consumers with those services.</p>
<p>3. Care Coordination Model*</p> <p>(NOTE: See attachment 3 for visual representation.)</p> <p>The MacColl Institute for Healthcare Innovation, Group Health Cooperative. (2010). <i>Care Coordination Model</i>. Retrieved from http://www.improvingchroniccare.org/index.php?p=Care_Coordination_Model&s=353</p>	<p>Examines care coordination from the perspective of a PCM with a focus on referrals and care transitions</p> <p>Considers “the range of providers and organizations the PCMH’s work with, including medical specialists, community agencies, and hospital and emergency facilities.”</p>	<p>Four key concepts that drive care coordination through practice change to support high-quality referrals & transitions for providers & patients by ensuring: involved providers receive the information they need when they need it; practice knows the status of all referrals/transitions involving its panel; and patients report receiving help in coordinating care:</p> <ul style="list-style-type: none"> • Assuming accountability • Providing patient support • Building relationships and agreements among providers (including community agencies) that lead to shared expectations for communication and care • Developing connectivity via electronic or other information pathways that encourage timely and effective information flow between providers (including community agencies)
<p>4. Care Coordination Model for Adults with Disabilities*</p> <p>(NOTE: See attachment 4 for visual representation.)</p> <p>Au, M., Samuel Simon, S., Chen, A., Lipson, D., Gimm, G., and Rich, E. (2011). <i>Comparative Effectiveness of Care Coordination for Adults with Disabilities</i> Retrieved from http://www.mathematica-mpr.net/publications/PDFs/health/comparative_care_rschbrief.pdf.</p>	<p>Developed to help researchers identify a common set of elements to use in all descriptions and evaluations of care coordination programs.</p> <p>Can be used in the form of a checklist by policymakers, practitioners, and program developers to consider how to structure and operate care coordination programs to maximize the benefits for people with disabilities.</p> <p>Accounts for basic elements of care coordination and how they might vary according to the type or severity of a disability(ies), relationship to health and supportive services, and expected results and outcomes.</p>	<p>Framework assumes three-tiers of complexity to care coordination:</p> <ul style="list-style-type: none"> • Populations, services, outcomes—The range of patient characteristics and circumstances determine the need for medical services and long term services and supports and this mix of services affects a number of outcomes. Care coordination is essential to matching the appropriate combination of services to the right patients and coordinating the delivery of those services to improve outcomes including: (1) health status; (2) functional status or ability; (3) independence and community integration; (4) quality of life; (5) process of care measures (including timely access to and use of needed services); (6) patient satisfaction and experience with care; (7) family and informal caregiver health and well-being; and (8) cost and resource utilization. • Dimensions/features of care coordination models—For any specific population, care coordination may vary along several dimensions, including which services are to be coordinated, who coordinates or manages care (and whether they are part of an interdisciplinary team), how frequently and over what period of time services are coordinated, and the extent and quality of information exchanged between providers and care coordinators, as well as the involvement of patients, family members, and other informal caregivers in decision-making. Under this framework, the following dimensions vary by care coordination model: needs assessment; training and experience; team composition; scope of services; intensity of effort; duration of effort; and information exchange; patient/family/caregiver engagement. • Organization and financing of care coordination—The various organizational settings and financing contexts for services are important mediating factors in determining how effectively care is coordinated. The way in which medical, LTSS, and other services are organized and financed are critical to achieving desired outcomes, by influencing the ease of service coordination and the number and quality of the services received

Alternative Conceptualizations of Nursing Care and Care Coordination

Theory, Framework, or Model Source	Summary	Domains, Key Concepts, and Other Significant Elements
<p>5. Chronic Care Model (CCM)* (NOTE: See attachment 5 for visual representation.)</p> <p>MacColl Center for Health Care Innovation at Group Health Research Institute. (2003). <i>Chronic Care Model</i>. Retrieved from http://www.improvingchroniccare.org/index.php?p=The_Chronic_Care_Model&s=2</p>	<p>Developed in the mid-1990s by drawing on available literature about promising strategies for chronic illness management</p> <p>Further refined in 1997 during a nine-month planning project supported by RWJF</p> <p>In 2003, CCM was updated to reflect advances</p> <p>Identifies essential elements of a health care system that encourage high-quality chronic disease care</p> <p>Evidence-based change concepts under each element foster productive interactions between informed patients and providers</p> <p>Can be applied to a variety of chronic illnesses, health care settings and target populations.</p> <p>The US (including the VA), Canada, New Zealand, and the UK have partially adopted the CCM.</p> <p>Over 44 studies were reviewed (Singh & Ham, 2006) which found the model was robust with + associations with improved process and outcomes of care, satisfaction, and cost. Like disease management, and other forms of care coordination, it's unclear what components are responsible for observed improvement.</p>	<p>Essential elements of a health care system and change concepts that encourage high-quality chronic disease care:</p> <ul style="list-style-type: none"> • Community <ul style="list-style-type: none"> ◦ Community policies • Health system <ul style="list-style-type: none"> ◦ Patient Safety ◦ Care coordination • Self-management support • Delivery system design <ul style="list-style-type: none"> ◦ Cultural competency ◦ Case management • Decision support • Clinical information systems <ul style="list-style-type: none"> ◦ Care coordination
<p>6. Comprehensive Conceptual Framework Based on the Integrative Functions of Primary Care</p> <p>(NOTE: See attachment 6 for visual representation.)</p> <p>Valentijn, P. P. (2013). Understanding integrated care: a comprehensive conceptual framework based on the integrative functions of primary care. <i>International Journal of Integrated Care</i>, (13), 1-12. Retrieved from http://www.ijic.org/index.php/ijic/article/view/886</p>	<p>Developed from a synthesis of the literature and expert consultation</p> <p>Comprised of key elements of (1) primary care, (2) integrated care, and (3) the key elements of their combination.</p> <p>Person-focused and population-based care perspectives provide a foundation for the framework.</p>	<p>Primary Care</p> <ul style="list-style-type: none"> • Holistic vision is expressed as person-focused and population-based care • Person-focused care reflects a bio-psychosocial perspective of health—i.e., that health problems are not synonymous to biological terms, diagnoses or diseases • Based on personal preferences, needs, and values (i.e., understanding the personal meaning of an illness) • Population-based care addresses all health-related needs in a defined population—services should be based on the needs and health characteristics of a population (including political, economic, social, and environmental characteristics) to improve an equitable distribution of health (and well-being) in a population <p>Integrated Care</p> <ul style="list-style-type: none"> • Structured around the three levels: macro (system) level, meso (organizational) level, and micro (clinical) level. • Also, function of normative integration—i.e., “ensuring coherency between the actors’ systems of value (shared mission, work values, org./professional culture), service-organization methods, and the clinical system”. • Integration is to a large extent shaped by and based on professional behavior and attitudes.

Alternative Conceptualizations of Nursing Care and Care Coordination

Theory, Framework, or Model Source	Summary	Domains, Key Concepts, and Other Significant Elements
6. (continued)		<p>Combination of Primary and Integrated Care</p> <ul style="list-style-type: none"> • Acknowledges that what is best for individuals within a population is best for the population. • Framework is visualized as a concentric circle, with the person-focused perspective at the center. • Integration at the meso level emphasizes a population-based approach, requiring professional and organizational integration to facilitate the continuous, comprehensive, and coordinated delivery of services to a defined population. • At the micro level clinical integration highlights the person-focused perspective, ensuring that service users experience continuous care. • Health professionals have to take proper account of the needs of individuals, so that the services /provided are matched (both horizontally and vertically) to their needs.
<p>7. Donabedian Quality of Care* (NOTE: See attachment 7 for visual representation.)</p> <p>Donabedian A. (1982). <i>The criteria and standards of quality</i>. Ann Arbor, Mich.: Health Administration Press.</p> <p>(NOTE: As summarized and adapted in McDonald KM, Sundaram V, Bravata DM, Lewis R, Lin N, Kraft S, McKinnon M, Paguntalan H, Owens DK. <i>Care Coordination</i>. (2007). Vol 7 of: <i>Shojania KG, McDonald KM, Wachter RM, Owens DK, editors. Closing the Quality Gap: A Critical Analysis of Quality Improvement Strategies. Technical Review 9 (Prepared by the Stanford University-UCSF Evidence-based Practice Center under contract 290-02-0017). AHRQ Publication No. 04(07)-0051-7. Rockville, MD: Agency for Healthcare Research and Quality. June 2007. Retrieved from http://www.ahrq.gov/research/findings/evidence-based-reports/caregaptp.html).</i></p>	<p>Framework used to define and assess the quality of health care.</p> <p>Classified under three categories: structure, process, and outcome measures.</p> <p>Employed by IOM in its 2001 report, <i>Crossing the quality chasm: A New Health System for the 21st Century</i>.</p> <p>Widely used as organizing structure for measurement (see NQF, 2007; AHRQ, 2010).</p>	<p><i>Structure</i>—attributes of the settings in which care occurs. This includes the attributes of material resources (such as facilities, equipment, and money), of human resources (such as the number and qualifications of personnel), and of organizational structure (such as medical staff organization, methods of peer review, and methods of reimbursement).</p> <p><i>Processes</i>—what is done in giving and receiving care. It includes the patient's activities in seeking care and carrying it out as well as the practitioner's activities in making a diagnosis and recommending or implementing treatment.</p> <p><i>Outcomes</i>— effects of care on the health status of patients and populations. Improvements in the patient's knowledge and salutary changes in the patient's behavior are included under a broad definition of health status, and so is the degree of the patient's satisfaction with care.</p>
<p>8. Coordination of Care for Persons with Disabilities Enrolled in Medicaid Managed Care*</p> <p>Sofaer S, Kreling B, Carmel M. (2000). <i>Coordination of care for persons with disabilities enrolled in Medicaid managed care: a conceptual framework to guide the development of measures</i>. Retrieved from http://aspe.hhs.gov/daltcp/reports/carecoor.htm</p>	<p>Based on Donabedian structure, process, and outcome categories with customization for use in the performance of MCOs that contract with state Medicaid agencies providing health care services to people eligible for Medicaid under one or more categories.</p>	<p>Organizing Structures to Effective and Efficient Care Coordination</p> <ul style="list-style-type: none"> • Leadership by the state Medicaid agency in convening stakeholders to identify the goals and scope of care coordination efforts. • Shared recognition (by state Medicaid agency, MCOs, providers, patients and families) of goals and potential benefits of care coordination. • Recognition by providers, and by the MCO, of the impact of the life and community context of patients on their goals, preferences, health and functioning. • Ongoing and meaningful communication between patients/families and providers, and across providers caring for the same patient or group of patients. • Trusting relationships between patients/families and providers, among providers, and between those identified as responsible for care coordination and both patients and providers. • Willingness of health care system actors to work collaboratively with professionals and agencies from other sectors, and vice versa.

Alternative Conceptualizations of Nursing Care and Care Coordination		
Theory, Framework, or Model Source	Summary	Domains, Key Concepts, and Other Significant Elements
8. (continued)		<p>Structures to Support Implementation of Care Coordination Processes and Achieve Intermediate Outcomes of Care</p> <ul style="list-style-type: none"> • Existence of a strategy to identify persons with disabilities (and desire) in need of care coordination. • Specification of the scope and objectives of care coordination in contracts between state Medicaid agencies and MCOs. • Specification, in states which carve out critical clinical services such as behavioral health, of mechanisms to achieve and ensure coordination between carved out services and those covered in Medicaid managed care contracts. • Adequate funding of care coordination activities, by the state Medicaid agency and by the MCO (as reflected in staffing levels and caseloads and other investments). • Use of financing tools such as risk adjustment to provide incentives for MCOs and providers to devote resources to care coordination and to care delivery for people with disabilities. • Specification, by the MCO, of the assignment of care coordination roles to its central staff and to clinical and other staff of its contracted providers and of the reporting and informing relationships between primary care coordinators and others. For instance, who is responsible for transferring information and how soon should it be available. • Structural placement of care coordination functions in a unit whose primary goal is NOT cost containment or utilization management. • Systems in place to ensure the timely flow of information between and among all providers (including care coordinators) caring for a particular patient, with appropriate privacy protections in place. • Availability of "24/7" emergency/crisis support from specially trained clinicians or care coordinators for people with disabilities identified as in need of care coordination. • Provision of specialized education and training to providers and MCO staff with respect to the special (and non-special) needs of people with disabilities, and the goals and operations involved in care coordination for this population. • Creation of teams, education of consumers, care conferences and other methods for enhancing information flow and "mutual adjustment" of providers and patients/families. • Current and complete knowledge, by the state Medicaid agency and the MCO, of resources at the state and local level that are relevant to the needs of persons with disabilities. • Development of memoranda of agreement/understanding between the state Medicaid agency and relevant state and local public sector agencies regarding coordination of services for people with disabilities. • Development of memoranda of agreement/understanding between MCOs and relevant local and state agencies to support coordination of medical and nonmedical services for people with disabilities.

Alternative Conceptualizations of Nursing Care and Care Coordination

Theory, Framework, or Model
Source

Summary

Domains, Key Concepts, and Other Significant Elements

8. (continued)

Processes of Care

- Outreach and identification of individuals in need of care coordination (Leutz, personal communication).
 - Assessment of the current health, functional and psychosocial status of the patient and family (Bulger, personal communication).
 - Assessment of the home and community context of the patient and family (Mack, personal communication).
 - Identification, with patient and family, of their health and functioning goals and their preferences with respect to receipt of services (Brede, personal communication).
 - Identification, with patient and family, of the resources and assets they bring to achieving goals (Mack, personal communication).
 - Education of the patient and family of the resources and services which are, and are not available within the MCO and in the community (Leutz, personal communication).
 - This would include providing information regarding the rules and procedures of the MCO with respect to accessing services, appealing denials of service, and making complaints grievances.
 - Specification (in collaboration with the patient and/or family) of service needs (current and likely short and mid-term future), including medical care services, enabling and support services provided by the MCO and related social and educational services that could be provided by other agencies and individuals (Leutz, personal communication; Ziring, personal communication).
 - Articulation of a plan for accessing these services, within and outside the MCO (Bulger, personal communication). Note that some elements of the plan may be carried out by the patient and/or family.
 - Developing the plan in writing and delivering it to the patient and/or family (Moore, personal communication).
 - Arranging for the receipt of these services, in a manner as close as possible to the preferences of the patient and/or family.
 - Facilitating ongoing communication between care coordination staff, clinical providers and administrative staff of the MCO regarding patient status, progress, concerns and response (Jha, personal communication).
 - Following up to determine if services are provided and if patient and/or family carries out elements of the plan for which they are responsible.
 - Following up to determine if services are provided and if patient and/or family carries out elements of the plan for which they are responsible.
 - Documenting the delivery of services provided (MacTaggart, personal communication).
 - Where necessary, advocating for the patient and/or family in accessing needed services in a preferred manner; resolving problems experienced by patients and providers (Leutz 1999).
 - Addressing unexpected problems and providing support during crises (Anderson 1996; Patrick, personal communication).
 - Conducting regular re-assessments of goals, preferences, resources and service needs; adjusting treatment plans accordingly (McManus 1996).
-

Alternative Conceptualizations of Nursing Care and Care Coordination
**Theory, Framework, or Model
Source**
Summary
Domains, Key Concepts, and Other Significant Elements

8. (continued)

Processes of Care (continued)

- Supporting transitions of patients across providers, facilities, and when necessary MCOs, over time (for example, through the maintenance and with appropriate permission transmission of records) (Devers, personal communication).
- Serving as a source of information about persistent problems at the systems level which impede efficient and effective coordination of care for people with disabilities (Ziring, personal communication).
- Documentation of corrective actions taken by the MCO with respect to these persistent system-level problems (MacTaggart, personal communication).

Intermediate Outcomes of Care

- Increased patient and family participation in maintenance and improvement of their own health. For example:
 - health-related behaviors move in the right direction
 - adherence to treatment regimens increases
 - missed visits and failed follow-up of referrals by patients decline
 - patient and family self-advocacy increases
- Patients receive all medical care services specified in their treatment plan.
- Patients receive services in the least restrictive medically appropriate setting.
- Delays in the receipt of services (especially services needed in crisis situations) are reduced or eliminated.
- All providers caring for a particular patient have current information about the health and functioning of the patient, critical life events, services being provided and the patient's response to the services.
- Prescriptions for and delivery of treatments (including medications) that are inappropriate given other conditions and treatments being received by the patient are reduced or eliminated.
- Duplication of services is reduced or eliminated.
- Preventable use of costly services (e.g., emergency room visits, hospitalizations, nursing home placements, services for preventable complications and sequelae) is reduced or eliminated.
- Negative medical and psycho-social sequelae of transitions from one care setting to another are reduced.
- Complaints, grievances, and incidence reports for this population are reduced.

Long-term Outcomes of Care

- Improve patient experience
 - Improve family experience
 - Decrease family caregiving burden
 - Improve provider experience
 - Maintain or improve functional status, independence and community participation
 - Maintain or improve health status
 - Prevent secondary complications
-

Alternative Conceptualizations of Nursing Care and Care Coordination

Theory, Framework, or Model
Source

Summary

Domains, Key Concepts, and Other Significant Elements

9. A Framework for High-Performing Pediatric Care Coordination*

(NOTE: See attachment 8 for visual representation.)

Antonelli, R.C., McAllister, J.W. and Popp, J. (2009). *Making care coordination a critical component of the pediatric health system: A multidisciplinary framework*. Retrieved from http://www.commonwealthfund.org/~media/Files/Publications/Fund%20Report/2009/May/Making%20Care%20Coordination%20a%20Critical%20Component/1277_Antonelli_making_care_coordination_critical_FINAL.pdf

Builds upon the six elements of the Chronic Care Model (MacColl)

Assumes that optimal patient- and family-centered outcomes are the result of relationships in which children, youth, and their families participate in fully informed partnerships with their primary care providers and supportive, proactive health care teams.

Care coordination is the ingredient necessary to operationalize care processes leading to the achievement of these outcomes.

Defines pediatric care coordination: "a patient- and family-centered, assessment-driven, team-based activity designed to meet the needs of children and youth while enhancing the caregiving capabilities of families. Care coordination addresses interrelated medical, social, developmental, behavioral, educational, and financial needs to achieve optimal health and wellness outcomes."

Framework builds on six core elements of CCM: self-management support (rearticulated as care partnership support to reflect a more family-centered approach), delivery system design, decision support, clinical information systems, community, and health systems.

Critical components include:

- Patient- and family-centered
- Proactive, planned, and comprehensive
- Promotes self-care skills and independence
- Emphasizes cross-organizational relationships

Care coordination competencies:

- Develops partnerships
- Communicates proficiently
- Uses assessments for intervention
- Is facile in care planning skills
- Integrates all resource knowledge
- Possesses goal/outcome orientation
- Takes an adaptable and flexible approach
- Desires continuous learning
- Applies team-building skills
- Is adept with information technology

Care coordination functions:

- Provides separate visits and care coordination interactions
 - Manages continuous communications
 - Completes/analyzes assessments
 - Develops care plans with families
 - Manages/tracks tests, referrals, and outcomes
 - Coaches patients/families
 - Integrates critical care information
 - Supports/facilitates care transitions
 - Facilitates team meetings
 - Uses health information technology
-

Alternative Conceptualizations of Nursing Care and Care Coordination

Theory, Framework, or Model Source	Summary	Domains, Key Concepts, and Other Significant Elements
<p>10. Framework for Measuring Integrated Care for Patients with Multiple or Complex Chronic Conditions*</p> <p>Singer, S.J., Friedberg, J.B., M., et al., (2010). Defining and Measuring Integrated Patient Care: Promoting the Next Frontier in Health care Delivery. <i>Medical Care Research and Review</i>, published online June 16, 2010. doi: 10.1177/1077558710371485</p>	<p>Informed by organizational theory “unity of effort” (Lawrence & Lorsch, 1986) and interdependence theory (Thompson, 1967) which added concepts of standardization (i.e., pooling of interdependent individuals or groups that contribute to a common goal, such as when patients receive care from multiple providers), planning (i.e., supports interdependent groups that perform tasks in sequence, such as when a physician prescribes treatment following laboratory tests), and mutual adjustment (i.e., reciprocally interdependent groups that rely on each other for information and performance of assigned roles to produce a good or service, such as when one adjusts a Rx to avoid a negative interaction with a Rx prescribed by another clinician).</p> <p>Four potential objects of integration were added: functional, organizational, professional, and clinical integration</p> <p>Measures of coordination within a patient care team assess the degree to which the care delivered by each team member is consistent with and informed by the care delivered by other team members.</p>	<p>Defines integrated patient care: “patient care that is coordinated across professionals, facilities, and support systems; continuous over time and between visits; tailored to the patients’ needs and preferences; and based on shared responsibility between patient and caregivers for optimizing health.”</p> <p>7-Dimension framework:</p> <ul style="list-style-type: none"> • <i>Coordinated within care team</i>—The individual providers (which may include physicians, nurses, other clinicians, support staff, and administrative personnel who routinely work together to provide medical care for a specified group of patients, hereafter the “care team”) deliver consistent and informed patient care and administrative services for individual patients, regardless of the care team member providing them. • <i>Coordinated across care teams</i>—All care teams that interact with patients, including specialists, hospital personnel, and pharmacies and deliver consistent and informed patient care and administrative services, regardless of the care team providing them. • <i>Coordinated between care teams and community resources</i>—Care teams consider and coordinate support for patients by other teams offered in the community (e.g., Meals on Wheels). • <i>Continuous familiarity with patient over time</i>—Clinical care team members are familiar with the patient’s past medical condition and treatments; administrative care team members are familiar with patient’s payment history and needs. • <i>Continuous proactive and responsive action between visits</i>—Care team members reach out and respond to patients between visits; patients can access care and information 24/7. • <i>Patient centered</i>—Care team members design care to meet patients’ (also family members and other informal caregivers’) needs and preferences; processes enhance patients’ engagement in self-management. • <i>Shared responsibility</i>—Both the patient and his or her family and care team members are responsible for the provision of care, maintenance of good health, and management of financial resources
<p>11. Gittell’s Framework of Relational Coordination*</p> <p>(NOTE: See attachment 9 for visual representation.)</p> <p>Bower P, Campbell S, Bojke C, Sibbald B. (2003). Team structure, team climate and the quality of care in primary care: an observational study. <i>Qual Saf Health Care</i>, 12(4), 273-9. doi: 10.1136/qhc.12.4.273</p> <p>Gittell JH. (2002). Coordinating mechanisms in care provider groups: relational coordination as a mediator and input uncertainty as a moderator of performance effects. <i>Management Science</i>, 48(11),1408-26. doi:10.1287/mnsc.48.11.1408.268</p> <p>Gittell JH, Fairfield KM, Bierbaum B, et al. (2000). Impact of relational coordination on quality of care, post-operative pain and functioning, and length of stay: a nine-hospital study of surgical patients. <i>Med Care</i>, 38(8), 807-19.</p>	<p>Informed by the management sciences field</p> <p>Considers relational coordination to understand the dynamics present in teamwork or collaboration</p> <p>Focus on relationships between participants whose awareness of the relationship of their work to the overall goals and to others involved in patient care is crucial, particularly for service organizations like health care with highly uncertain, time-sensitive, and interdependent activities</p>	<p>Characterized (and measured) by the following:</p> <ul style="list-style-type: none"> • Frequency, timeliness, and problem-solving aspects of communication among participants in care • Helpfulness • Shared goals and knowledge • Mutual respect

Alternative Conceptualizations of Nursing Care and Care Coordination

Theory, Framework, or Model Source	Summary	Domains, Key Concepts, and Other Significant Elements
<p>11. (continued)</p> <p>(NOTE: As adapted and summarized in McDonald KM, Sundaram V, Bravata DM, Lewis R, Lin N, Kraft S, McKinnon M, Paguntalan H, Owens DK. <i>Care Coordination</i>. Vol 7 of: Shojania KG, McDonald KM, Wachter RM, Owens DK, editors. <i>Closing the Quality Gap: A Critical Analysis of Quality Improvement Strategies</i>. Technical Review 9 (Prepared by the Stanford University-UCSF Evidence-based Practice Center under contract 290-02-0017). AHRQ Publication No. 04(07)-0051-7. Rockville, MD: Agency for Healthcare Research and Quality. June 2007. Retrieved from http://www.ahrq.gov/research/findings/evidence-based-reports/caregaptp.html).</p>		
<p>12. Institute for Healthcare Improvement (IHI) Care Coordination Model for People with Multiple Health and Social Needs*</p> <p>(NOTE: See attachment 10 for visual representation.)</p> <p>Craig C, Eby D, Whittington J. (2011). <i>Care coordination model: Better care at lower cost for people with multiple health and social needs</i>. IHI Innovation Series white paper. Cambridge, Massachusetts: Institute for Healthcare Improvement. Retrieved from http://www.ihl.org/knowledge/Pages/IHIWhitePapers/IHICareCoordinationModelWhitePaper.aspx.</p>	<p>Constructed to better understand and support the population with multiple health and social needs.</p> <p>Includes identification and intervention in the context of a person's assets.</p> <p>Feedback loops indicate that the care planning is dynamic and fluid, as the individual and care providers adjust the plan and improve it over time.</p>	<p><i>Individual and family assets</i>—resources, strengths, and gifts of individuals</p> <p><i>Patient identification</i>—Who is failed by primary care? A blunt assessment can be a simple scan of the most frequent users (i.e., defined differently in different settings) of hospital-based services; sophisticated predictive modeling can further identify individuals who are likely to drive high future health care costs, as distinct from those whose illnesses require acute care for a given episode.</p> <p><i>Care coordinator</i>—Responsible for identifying an individual's health goals and coordinating services and providers to meet those goals; person responsible for ensuring that the care plan is carried out in partnership with the person at the center of the care plan.</p> <ul style="list-style-type: none"> • <i>Value proposition</i>: Outlines the exhaustive list of services that the team can provide, including referrals. • <i>Service design</i>: Defines components of the individual's chosen services; identifies opportunities for coordination among those involved in the service plan, highlighting each person's responsibilities. • <i>Service delivery</i>: Ensures that services are delivered as outlined, and ensures collaboration among all involved; assesses and reassesses the plan's efficacy.
<p>13. Integrated Care—A Framework that Characterizes the Continuum of Health and Long Term Care</p> <p>(NOTE: See attachment 11 for visual representation.)</p> <p>Dobell, L. Gail, and Robert J. (2008). Newcomer. <i>Integrated Care: Incentives, Approaches, and Future Considerations</i>. <i>Social Work in Public Health</i>, 23(4), 25-47. doi: 10.1080/19371910802162116.</p> <p>(NOTE: Adapted in Shraeder & Shelton. (2011). <i>Comprehensive care coordination for chronically ill adults</i>. West Sussex, UK: John Wiley & Sons, Inc., p. 130).</p>	<p>Developed in response to highly compartmentalized health and long term services and supports system</p> <p>Effort to address compartmentalization by placing initiatives to reduce silos into the context of the points of transitions between levels of care and suggest research and policy developments to further explore attainment of integrated care.</p>	<p>Highlights the levels of care and different provider types in/across the care continuum, including multiple levels in long term services and supports.</p> <p>Organized by the individual's health status and related goals and represented by three concentric circles (i.e., levels of health status):</p> <ul style="list-style-type: none"> • Absence of health problems (treatment emphasis health condition prevention) • Presence of a health condition (treatment emphasis is health condition management) • Advanced illness care (treatment emphasis to palliative care/end of life) <p>Provider involvement can occur at more than one level simultaneously.</p> <p>Areas of overlap between the health status dimensions are the opportunities for achieving care integration.</p>

Alternative Conceptualizations of Nursing Care and Care Coordination

Theory, Framework, or Model Source	Summary	Domains, Key Concepts, and Other Significant Elements
<p>14. Logic Model for Care Coordination Interventions (NOTE: See attachment 12 for visual representation.)</p> <p>Shraeder & Shelton. (2011). <i>Comprehensive care coordination for chronically ill adults</i>. West Sussex, UK: John Wiley & Sons, Inc. p. 42.</p>	<p>Depicts components or features of care coordination (intervention domains) in relationship to expected quality process and outcome measures.</p> <p>Developed with care coordination intervention domains identified from the literature and the Medicare Chronic Care Practice Research Network (MCCPRN).</p> <p>Importance of readmissions is highlighted to ensure match between patient needs and care coordination intervention.</p>	<p>Based on the hypothesis that some combination interventions/features will address the barriers to improving patient health and lead to improved patient health, reduced utilization of expensive acute care services, and reduced costs:</p> <ul style="list-style-type: none"> • Improved patient adherence to treatment regimens • Increased use by physicians of evidence-based guidelines for medications and other treatments • improved communication between patients and providers and across providers • better management of transitions between care settings • careful monitoring of patient symptoms and well-being to identify and address health problems and exacerbations earlier than might otherwise occur • improved access to health-related services <p>Model based on the selection of interventions, dependent on program features (e.g., program content, approaches) and enrollment (e.g., target population), and the use of process and adherence measures and quality-related and cost/use outcomes to monitor improvements.</p> <p>Author identifies 14 evidence-based care coordination intervention domains (e.g., care coordinators are predominantly RNs; comprehensive assessment; ongoing monitoring and evaluation)</p>
<p>15. National Quality Forum (NQF) Framework for Measuring Care Coordination*</p> <p>National Quality Forum (NQF). (2006). <i>NQF-endorsed definition and framework for measuring and reporting care coordination</i>. Washington, DC: NQF.</p>	<p>Developed by Steering Committee and endorsed in May 2006 through National Quality Forum's (NQF) Consensus Development Process (CDP).</p> <p>Consists of five essential components/domains, none of which is emphasized more than the others, and four principles</p> <p>Intended to inform performance development for the comprehensive evaluation of care coordination.</p>	<ul style="list-style-type: none"> • Health care home • Proactive plan of care and follow-up • Communication • Information systems • Transitions or "hand offs" <p>Four principles:</p> <ul style="list-style-type: none"> • Care coordination is important for everyone • Some populations are particularly vulnerable to fragmented, uncoordinated care • Suitable for measurement and accountability at multiple levels—in some cases the individual provider-level and in other cases the practice, group, or organizational-level • Timely patient and family surveys of their experience with care coordination efforts are essential
<p>16. Nursing Care Performance Framework (NCPF)</p> <p>(NOTE: See attachment 13 for visual representation.)</p> <p>Dubois CA, D'Amour D, Pomey MP, Girard F, Brault I. (2013). Conceptualizing performance of nursing care as a prerequisite for better measurement: a systematic and interpretive review. <i>BMC Nurs.</i>, (12)7. doi:10.1186/1472-6955-12-7. Retrieved from http://www.biomed-central.com/1472-6955/12/7</p>	<p>Adaptation of Donabedian and Parson's frameworks. (NOTE: Parson's theory of social theory action and systems provides further insight into the performance of a given system by conceptualizing the social system as interactions between different subsystems, mostly defined in terms of functions which require goal attainment, production, adaptation to the environment, and values' maintenance.)</p> <p>Employed to review 31 nursing models and develop the NCPF, which addresses measurement of nursing's contribution to quality (including care coordination).</p>	<p>Conceptualizes nursing care performance as the result of nursing subsystems that operate together to achieve three key functions:</p> <ul style="list-style-type: none"> • Acquiring, deploying and maintaining nursing resources • Nursing staff supply • Management of working conditions • Nursing staff maintenance • Economic sustainability • Transforming nursing resources into nursing services • Practice environment • Nursing processes • Patient experience • Professional satisfaction • Producing positive changes in a patient's condition as a result of providing nursing services • Nursing-sensitive outcomes • Joint contribution of nursing and other systems .

Alternative Conceptualizations of Nursing Care and Care Coordination

Theory, Framework, or Model Source

Summary

Domains, Key Concepts, and Other Significant Elements

16. (continued)

Each of the three subsystems is composed of multiple components that define the structure, processes and outcomes of the overall system.

Within each subsystem, the components are involved in multiple processes of interaction to achieve a specialized function.

Contrary to many prevailing definitions, nursing care performance is not restricted to the end goals or outcomes of the nursing system, but refers also to the effectiveness of those upstream functions that provide the means necessary to achieve nursing system goals.

17. Organizational Design Model/
Framework*

(NOTE: See attachment 14 for visual representation.)

Nadler D, Tushman M. (1988). *Strategic organization design*. Glenview, Illinois and London, England: Scott, Foresman and Company.

(NOTE: As summarized and adapted in McDonald KM, Sundaram V, Bravata DM, Lewis R, Lin N, Kraft S, McKinnon M, Paguntalan H, Owens DK. *Care Coordination*. Vol 7 of: *Shojania KG, McDonald KM, Wachter RM, Owens DK, editors. Closing the Quality Gap: A Critical Analysis of Quality Improvement Strategies. Technical Review 9 (Prepared by the Stanford University-UCSF Evidence-based Practice Center under contract 290-02-0017). AHRQ Publication No. 04(07)-0051-7. Rockville, MD: Agency for Healthcare Research and Quality. June 2007. Retrieved from <http://www.ahrq.gov/research/findings/evidence-based-reports/caregptp.html>).*

Employs the evidence from the organizational design research literature, specifically formal coordinating mechanisms.

Characterizes organizations as information-processing systems, where the flow of information among participants is a function of the demands of the situation and the capabilities of the organization to move information to where it is needed.

Wagner CCM model reflects concepts that fit into this broader organizational design framework.

Includes three main domains:

- Information requirements including: interdependence, uncertainty, and complexity
- Information-processing capacity including: grouping, structures, and operational processing
- Match or fit between these concepts—i.e., capacity must match (fit) the demands for information by the participants carrying out the effective patient care activities

18. Patient Lock Model©: A Continuum of Care

(NOTE: See attachment 15 for visual representation.)

Matthews JH, Coe TR, Bruflat C, Burnett S, Howard P, Peterson C. (2010). The patient lock model©: a continuum of care. *Policy Polit Nurs Pract.*, 11(2), 32-9. doi: 10.1177/1527154410383321.

Allows for the provision of varied tasks across the health care continuum with the patient at the center of the model.

Individual patient attributes and decisions combine to indicate care needed and reveal the type of provider that is best able to provide that care.

May be helpful to assess or measure the value or usability of proposals for medical/health homes that are part of health care reform.

Because it depicts activities of health care delivery, authors acknowledge that it may facilitate the public's understanding of the importance of individualization of care delivery dependent on patient health status, outcome expectations, care setting, care provider, resource availability and utilization.

NOTE: Authors acknowledge the model is in initial phase of development.

Focuses on the patient and encourages access to care, often in the setting of the patient's choosing.

Health care professionals may perform tasks relinquished by the professional nurse, but are within the provider's scope based on the setting and the level of acuity.

Central element is ensuring that the patient's expectations for care are met (satisfaction and quality) and the outcome is within the prescribed range for the clinical condition.

Applying this model may result in cost efficiencies since provider selection and settings often dictate cost factors.

Critical components in care delivery are the care setting or environment, care provider, focus and outcomes, delivery model, and the care resources. They have a range of limits (e.g., skills range by care provider, resources vary within the setting)

Individual horizontal elements of the model themselves are interlinked and affected by the patient characteristics—e.g., patient's health status determines patient's location at a point in time.

Model depicts a digital lock for which the "combination" is unique and centered on the patient's needs and each patient's unique characteristics.

Digital combination differs for each patient—and the combination would be re-set by the patient for each new episode or care encounter on the health care continuum.

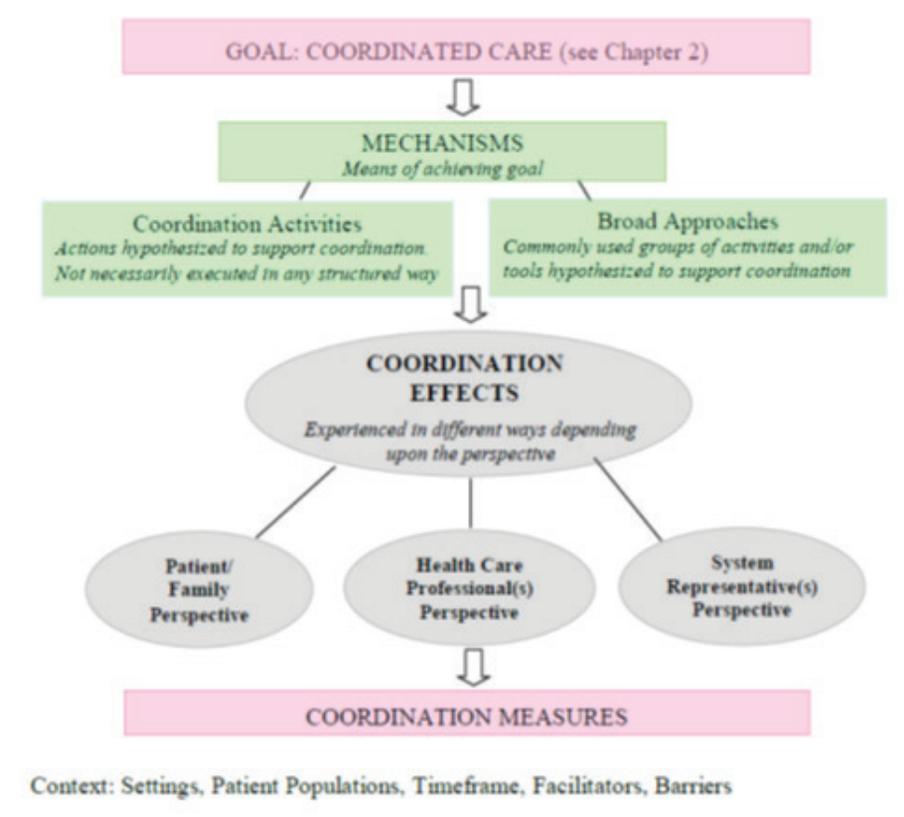
Different combinations represent changes in the components of the care delivery such as provider skill, available resources, delivery models, and other factors.

Recognizing these factors the nurse or other care professional can prioritize the care requirements that affect patient expectations, satisfaction, and quality outcomes.

ATTACHMENTS

Fifteen representations of alternative conceptualizations of nursing care and care coordination models (identified in the literature search)

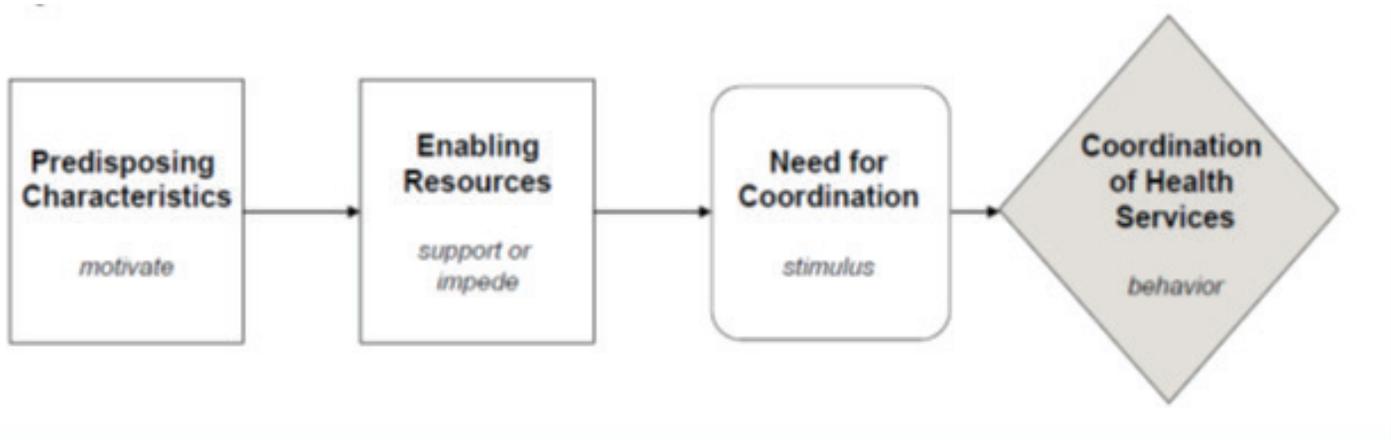
Attachment 1: Agency for Healthcare Research and Quality (AHRQ) Care Coordination Atlas



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

McDonald KM, Schultz E, Albin L, Pineda N, Lonhart J, Sundaram V, Smith-Spangler C, Brustrom J, and Malcolm E. (2010). *Care Coordination Atlas Version 3* (Prepared by Stanford University under subcontract to Battelle on Contract No. 290-04-0020). AHRQ Publication No. 11-0023-EF. Rockville, MD: Agency for Healthcare Research and Quality. November 2010.

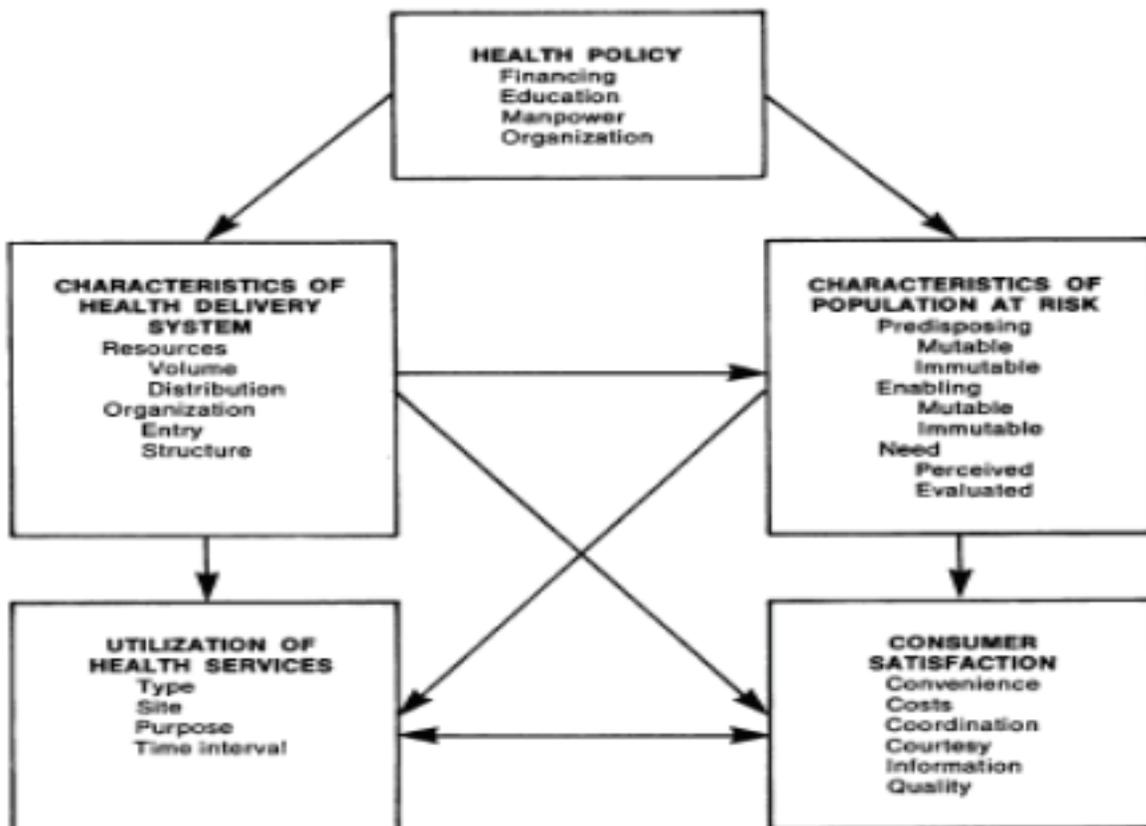
Attachments 2a: Andersen Behavior Framework



Andersen RM. Revisiting the behavioral model and access to medical care: does it matter? (1995). *J Health Soc Behav*, 36(1), 1-10.

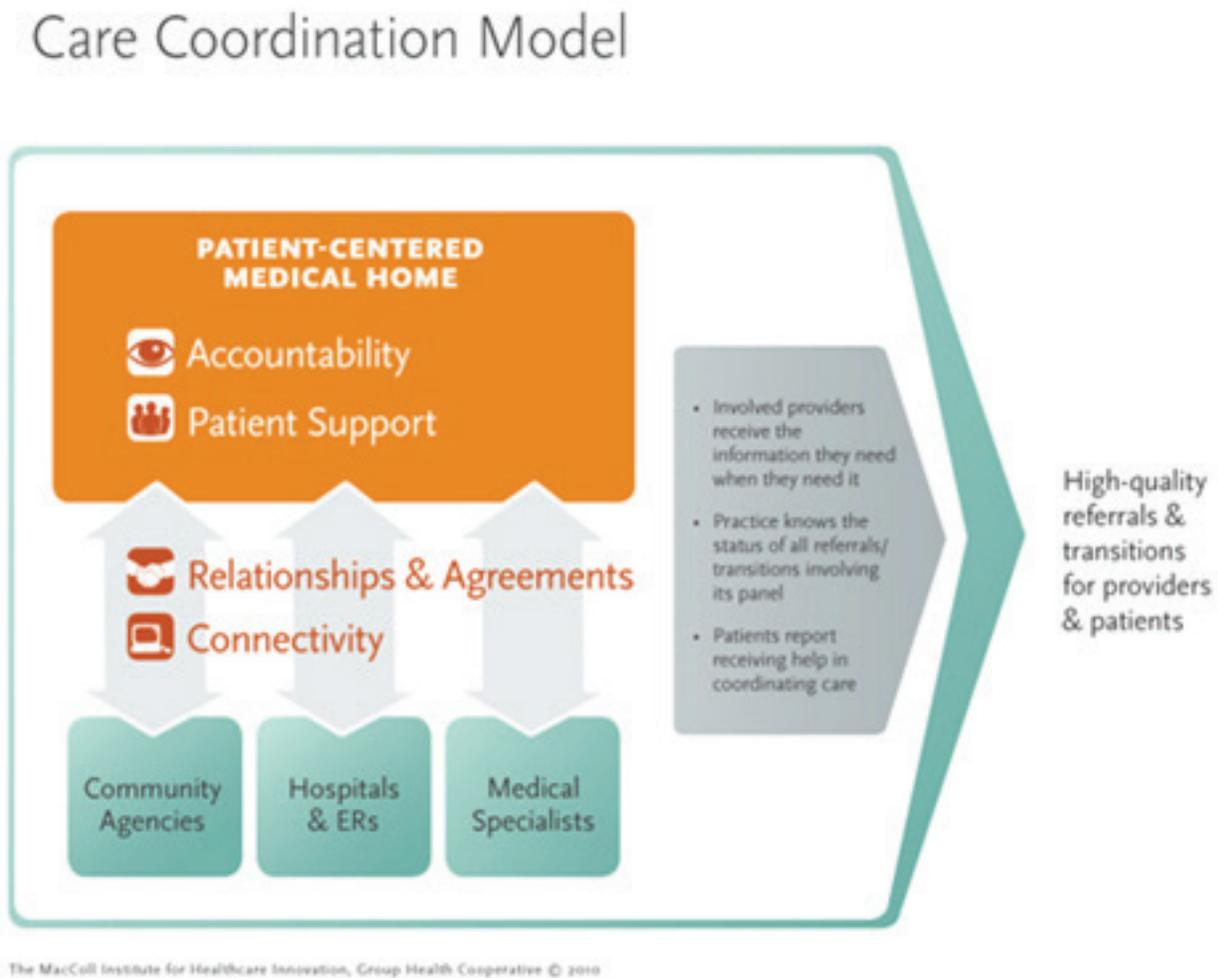
As adapted and summarized in McDonald KM, Sundaram V, Bravata DM, Lewis R, Lin N, Kraft S, McKinnon M, Paguntalan H, Owens DK. (2007). Care Coordination. Vol 7 of: Shojania KG, McDonald KM, Wachter RM, Owens DK, editors. *Closing the Quality Gap: A Critical Analysis of Quality Improvement Strategies*. Technical Review 9 (Prepared by the Stanford University-UCSF Evidence-based Practice Center under contract 290-02-0017). AHRQ Publication No. 04(07)-0051-7. Rockville, MD: Agency for Healthcare Research and Quality. June 2007. Retrieved from <http://www.ahrq.gov/research/findings/evidence-based-reports/caregapt.html>.

Attachment 2b: Framework for the study of access. (Aday and Andersen)



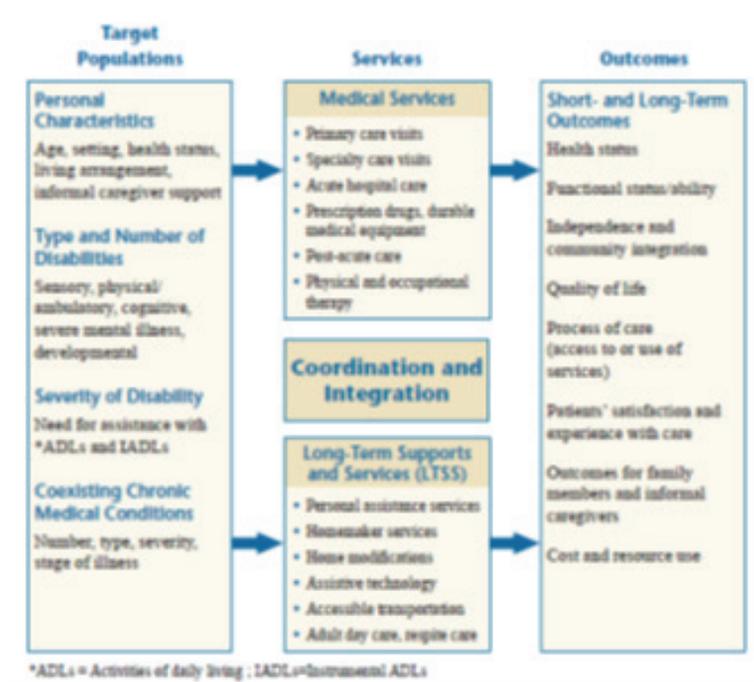
Aday, L.A., Andersen, R. (1974) A Framework for the Study of Access to Medical Care. *Health Services Research*, 9(3), 208-210.

Attachment 3: Care Coordination Model



Care Coordination Model (The MacColl Institute for Healthcare Innovation, Group Health Cooperative). (2010). Retrieved from http://www.improvingchroniccare.org/index.php?p=Care_Coordination_Model&s=353.

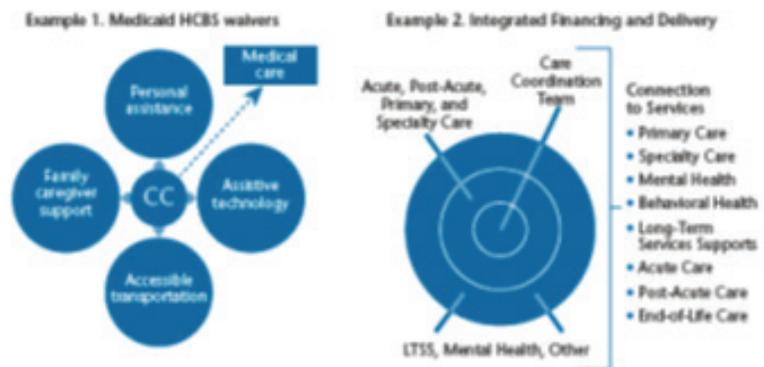
Attachment 4: Care Coordination Model for Adults with Disabilities Populations, Services, and Outcomes



Dimensions and Features of Care Coordination Models

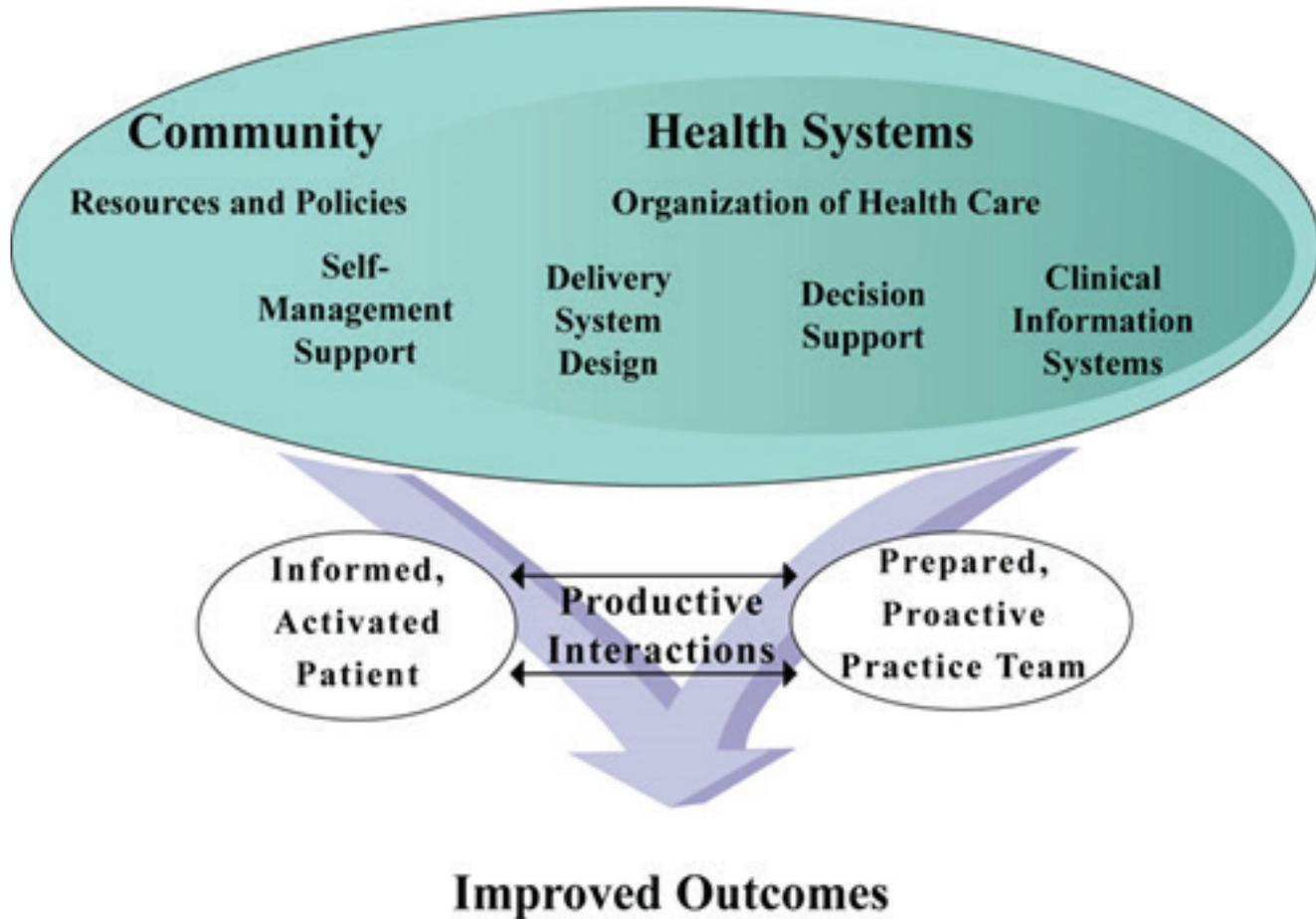


Organization and Financing



Attachment 5: Chronic Care Model (CCM)

The Chronic Care Model



Developed by The MacColl Institute
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MacColl Center for Health Care Innovation at Group Health Research Institute. (2003). *Chronic care model*. Retrieved from http://www.improvingchroniccare.org/index.php?p=The_Chronic_Care_Model&s=2

Attachment 6: Comprehensive Conceptual Framework Based on the Integrative Functions of Primary Care

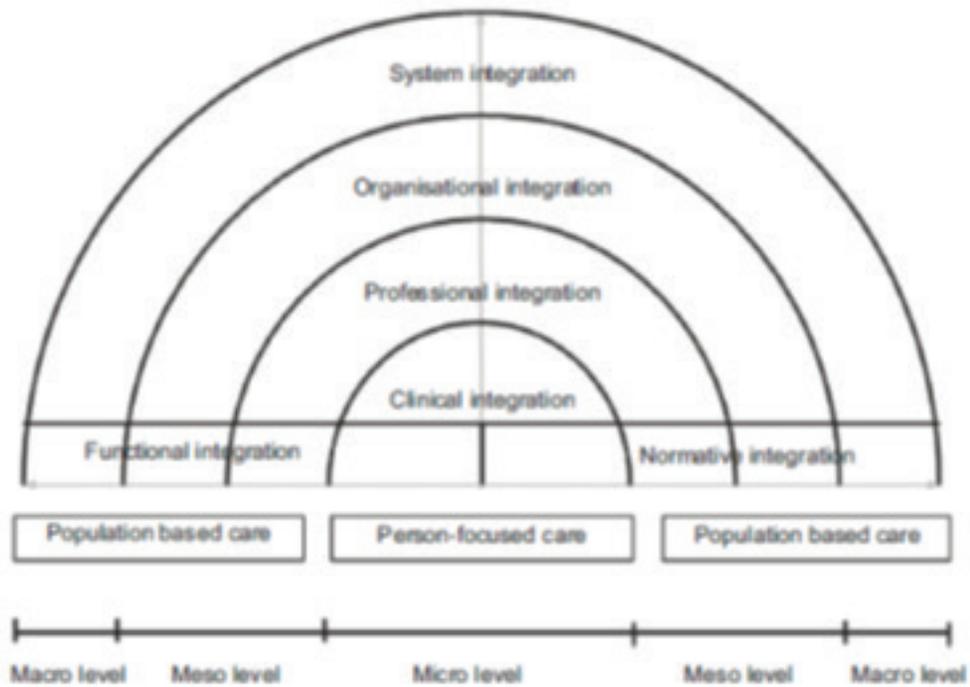
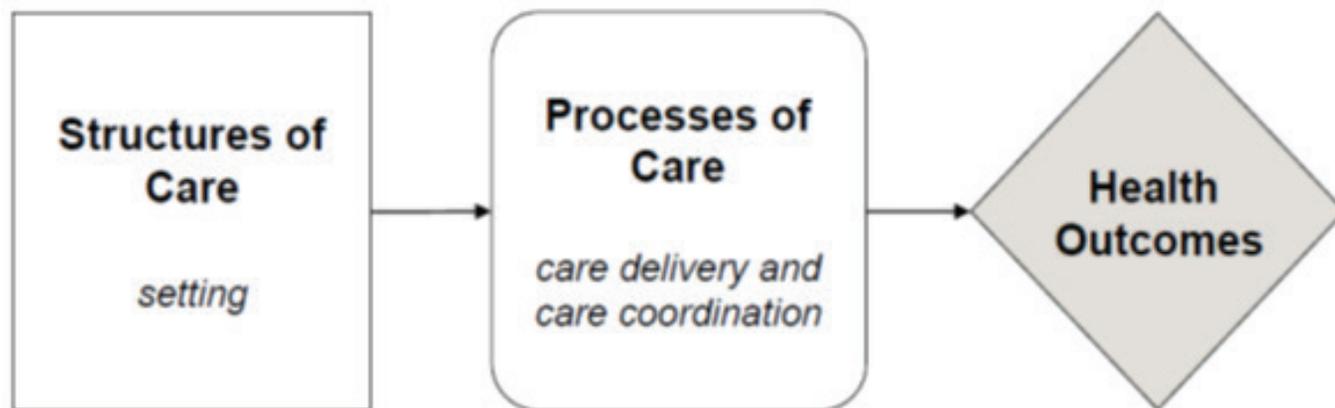


Figure 3. Conceptual framework for integrated care based on the integrative functions of primary care.

Valentijn, P. P. (2013). Understanding integrated care: a comprehensive conceptual framework based on the integrative functions of primary care. *International Journal of Integrated Care*, (13) 1-12. Retrieved from <http://www.ijic.org/index.php/ijic/article/view/886>.

Attachment 7: Donabedian Quality of Care



Donabedian A. (1982). *The criteria and standards of quality*. Ann Arbor, Mich.: Health Administration Press.

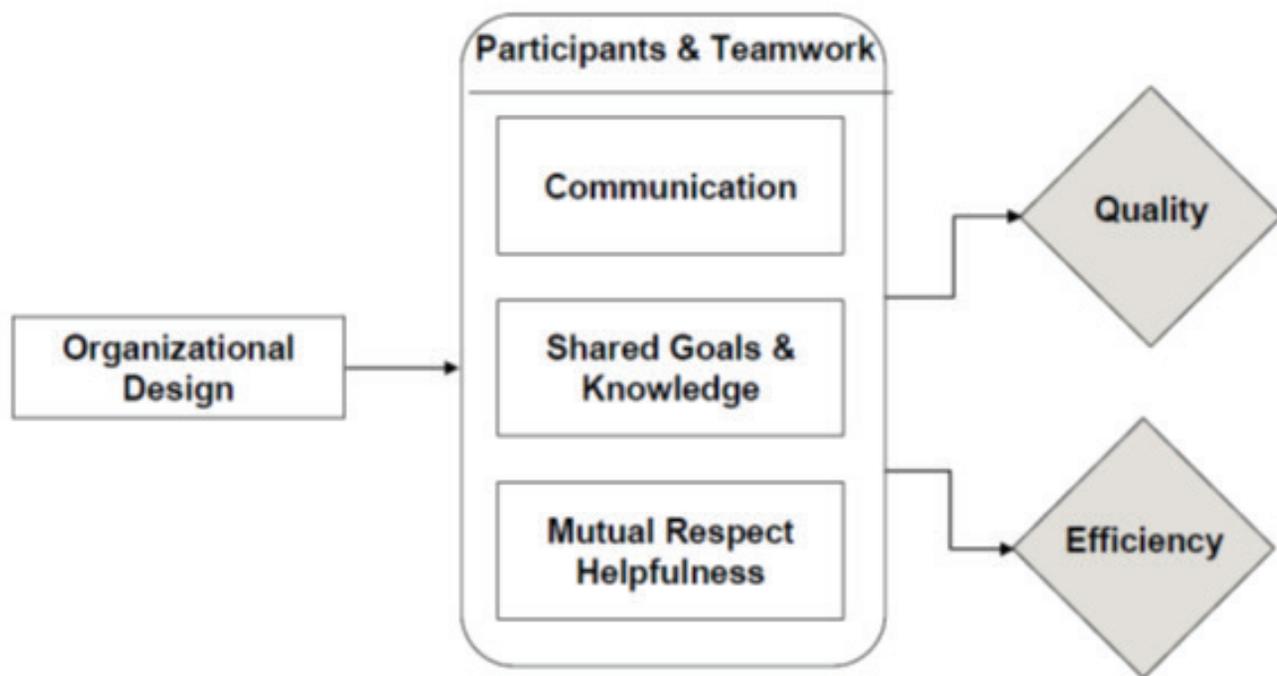
As summarized and adapted in McDonald KM, Sundaram V, Bravata DM, Lewis R, Lin N, Kraft S, McKinnon M, Paguntalan H, Owens DK. Care Coordination. Vol 7 of: Shojania KG, McDonald KM, Wachter RM, Owens DK, editors. *Closing the Quality Gap: A Critical Analysis of Quality Improvement Strategies*. Technical Review 9 (Prepared by the Stanford University-UCSF Evidence-based Practice Center under contract 290-02-0017). AHRQ Publication No. 04(07)-0051-7. Rockville, MD: Agency for Healthcare Research and Quality. June 2007. Retrieved from <http://www.ahrq.gov/research/findings/evidence-based-reports/caregapt.html>.

Attachment 8: A Framework for High-Performing Pediatric Care Coordination

<p>Care Coordination Definition:</p> <p><i>Pediatric care coordination is a patient- and family-centered, assessment-driven, team-based activity designed to meet the needs of children and youth while enhancing the caregiving capabilities of families. Care coordination addresses interrelated medical, social, developmental, behavioral, educational, and financial needs to achieve optimal health and wellness outcomes.</i></p>					
<p>Defining Characteristics of Care Coordination:</p> <table border="0"> <tr> <td>1. Patient- and family-centered</td> <td>3. Promotes self-care skills and independence</td> </tr> <tr> <td>2. Proactive, planned, and comprehensive</td> <td>4. Emphasizes cross-organizational relationships</td> </tr> </table>		1. Patient- and family-centered	3. Promotes self-care skills and independence	2. Proactive, planned, and comprehensive	4. Emphasizes cross-organizational relationships
1. Patient- and family-centered	3. Promotes self-care skills and independence				
2. Proactive, planned, and comprehensive	4. Emphasizes cross-organizational relationships				
<p>Care Coordination Competencies:</p> <ol style="list-style-type: none"> 1. Develops partnerships 2. Communicates proficiently 3. Uses assessments for intervention 4. Is facile in care planning skills 5. Integrates all resource knowledge 6. Possesses goal/outcome orientation 7. Takes an adaptable and flexible approach 8. Desires continuous learning 9. Applies team-building skills 10. Is adept with information technology 	<p>Care Coordination Functions:</p> <ol style="list-style-type: none"> 1. Provides separate visits and care coordination interactions 2. Manages continuous communications 3. Completes/analyzes assessments 4. Develops care plans with families 5. Manages/tracks tests, referrals, and outcomes 6. Coaches patients/families 7. Integrates critical care information 8. Supports/facilitates care transitions 9. Facilitates team meetings 10. Uses health information technology 				
<p>Delivery of Family-Centered Care Coordination Services Includes:</p> <div style="text-align: center;"> <pre> graph TD A[Assessment] --> B[Goal Setting] B --> C[Care Planning] C --> D[Continuous Monitoring] D --> A </pre> </div>					

Antonelli, R.C., McAllister, J.W. and Popp, J. (2009). *Making Care Coordination a Critical Component of the Pediatric Health System: A Multidisciplinary Framework*. Retrieved from http://www.commonwealthfund.org/~media/Files/Publications/Fund%20Report/2009/May/Making%20Care%20Coordination%20a%20Critical%20Component/1277_Antonelli_making_care_coordination_critical_FINAL.pdf

Attachment 9: Gittell's Framework of Relational Coordination



Bower P, Campbell S, Bojke C, Sibbald B. (2003). Team structure, team climate and the quality of care in primary care: an observational study. *Qual Saf Health Care*, 12(4), 273-9. doi: 10.1136/qhc.12.4.273

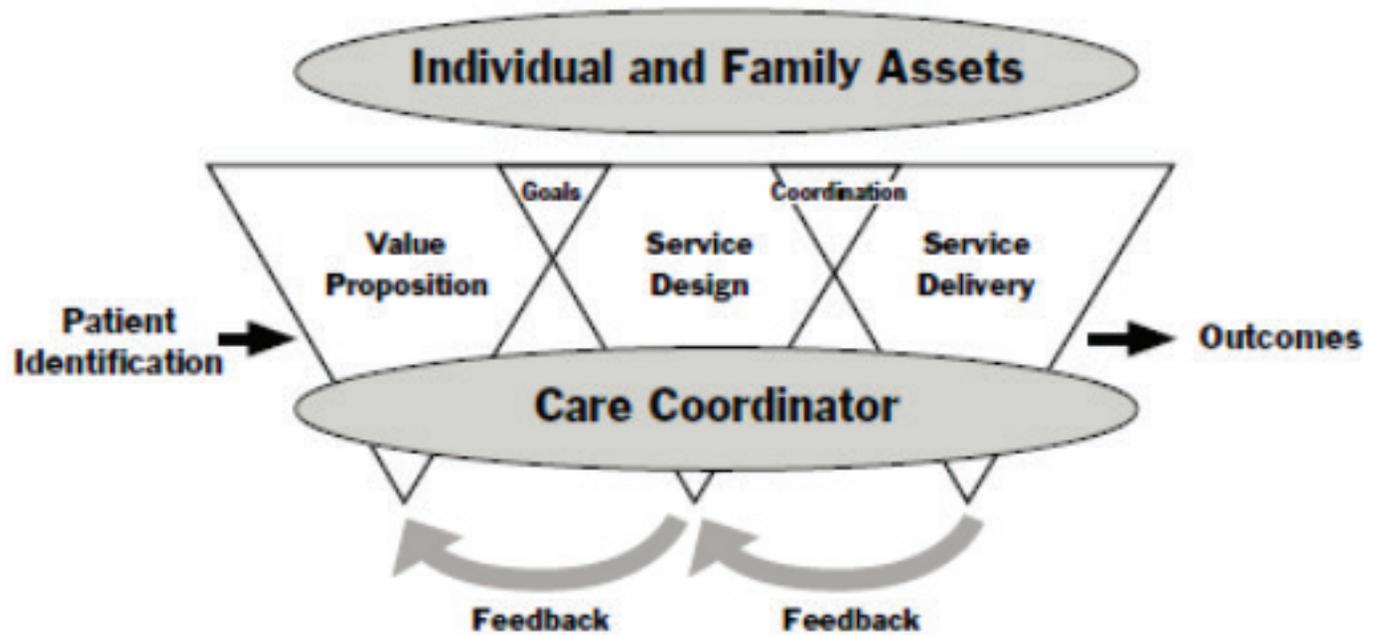
Gittell JH. (2002). Coordinating mechanisms in care provider groups: relational coordination as a mediator and input uncertainty as a moderator of performance effects. *Management Science*, 48(11),1408-26. doi:10.1287/mnsc.48.11.1408.268

Gittell JH, Fairfield KM, Bierbaum B, et al. (2000). Impact of relational coordination on quality of care, postoperative pain and functioning, and length of stay: a nine-hospital study of surgical patients. *Med Care*, 38(8), 807-19. Retrieved from http://ipls.dk/pdf-filer/gittell_2000.pdf.

Gittell JH. (2000). Organizing work to support relational co-ordination. *Int J of Human Resource Management.*, 11(3), 517-39. doi:10.1080/095851900339747

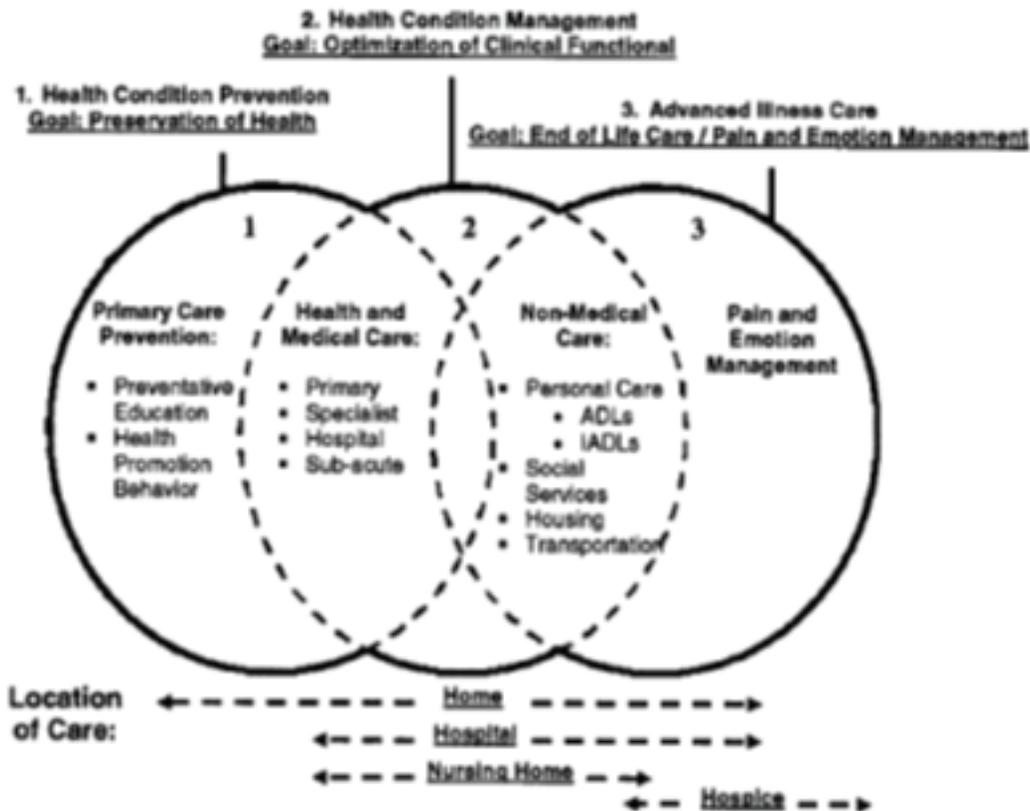
As summarized and adapted n McDonald KM, Sundaram V, Bravata DM, Lewis R, Lin N, Kraft S, McKinnon M, Paguntalan H, Owens DK. Care Coordination. Vol 7 of: Shojania KG, McDonald KM, Wachter RM, Owens DK, editors. Closing the Quality Gap: A Critical Analysis of Quality Improvement Strategies. Technical Review 9 (Prepared by the Stanford University-UCSF Evidence-based Practice Center under contract 290-02-0017). AHRQ Publication No. 04(07)-0051-7. Rockville, MD: Agency for Healthcare Research and Quality. June 2007. Retrieved from <http://www.ahrq.gov/research/findings/evidence-based-reports/caregapt.html>).

Attachment 10: Institute for Healthcare Improvement (IHI) Care Coordination Model for People with Multiple Health and Social Needs



Craig C, Eby D, Whittington J. (2011). *Care coordination model: Better care at lower cost for people with multiple health and social needs*. IHI Innovation Series white paper. Cambridge, Massachusetts: Institute for Healthcare Improvement. Retrieved from <http://www.ihl.org/knowledge/Pages/IHIWhitePapers/IHICareCoordinationModelWhitePaper.aspx>.

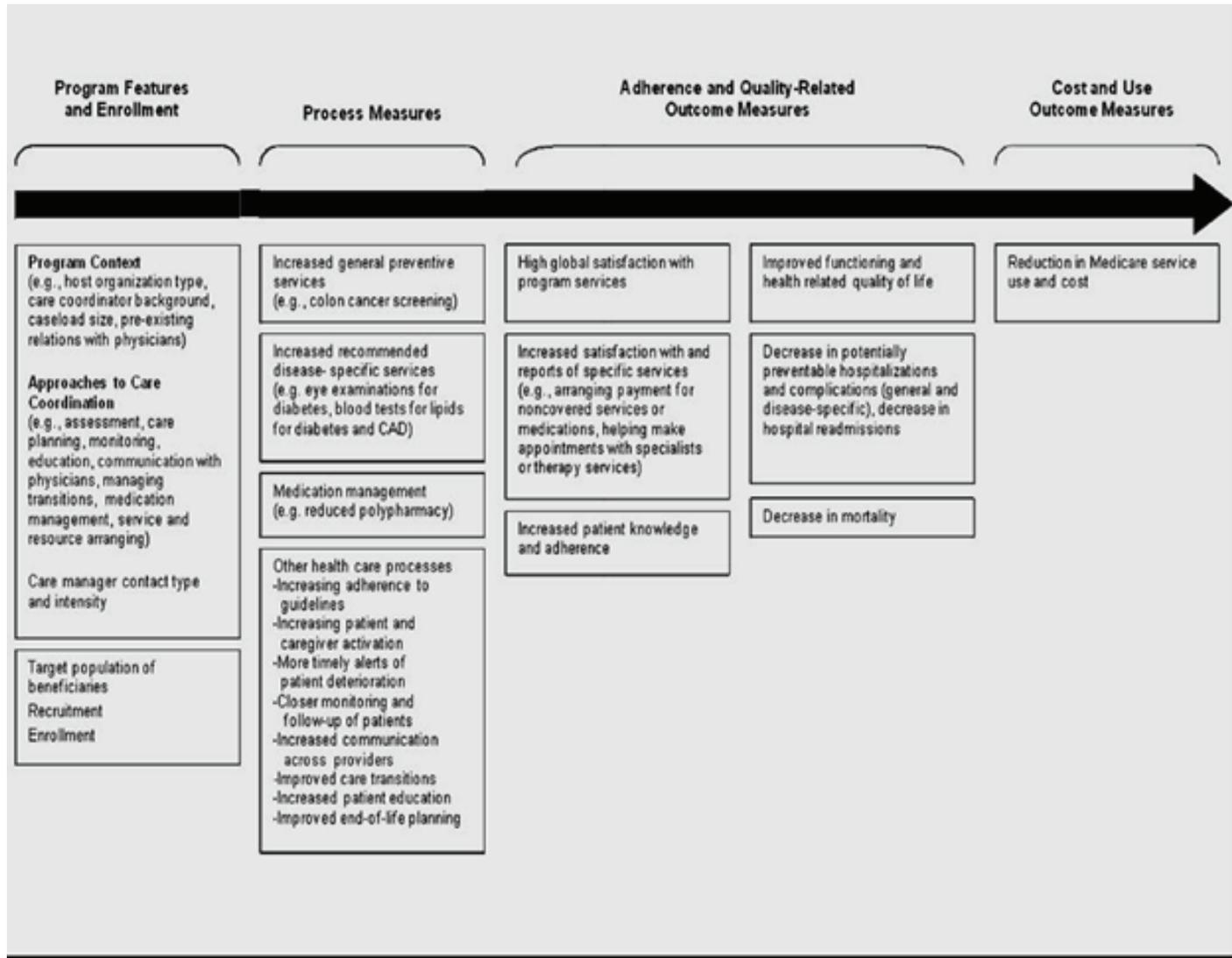
Attachment 11: Integrated Care—A Framework that Characterizes the Continuum of Health and Long Term Care



Dobell, L. Gail, and Robert J. (2008). Newcomer. Integrated Care: Incentives, Approaches, and Future Considerations.” *Social Work in PublicHealth*, 23(4), 25-47.

(NOTE: Adapted in Shraeder & Shelton. (2011). *Comprehensive care coordination for chronically ill adults*. West Sussex, UK: John Wiley & Sons, Inc., p. 130).

Attachment 12: Logic Model for Care Coordination Interventions



Shraeder & Shelton. (2011). *Comprehensive care coordination for chronically ill adults*. West Sussex, UK: John Wiley & Sons, Inc., p. 42.

Attachment 13: Nursing Care Performance Framework (NCPF)

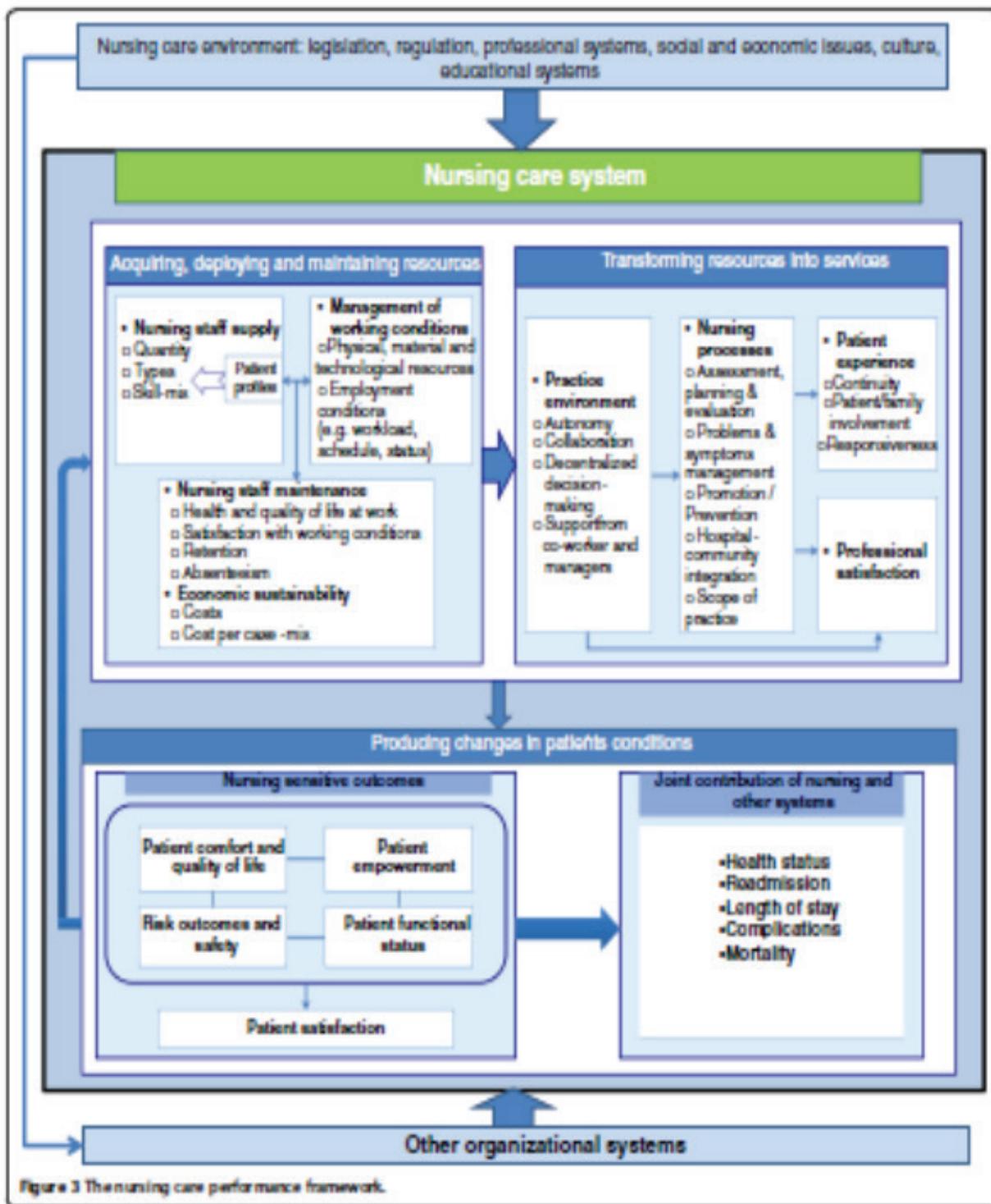
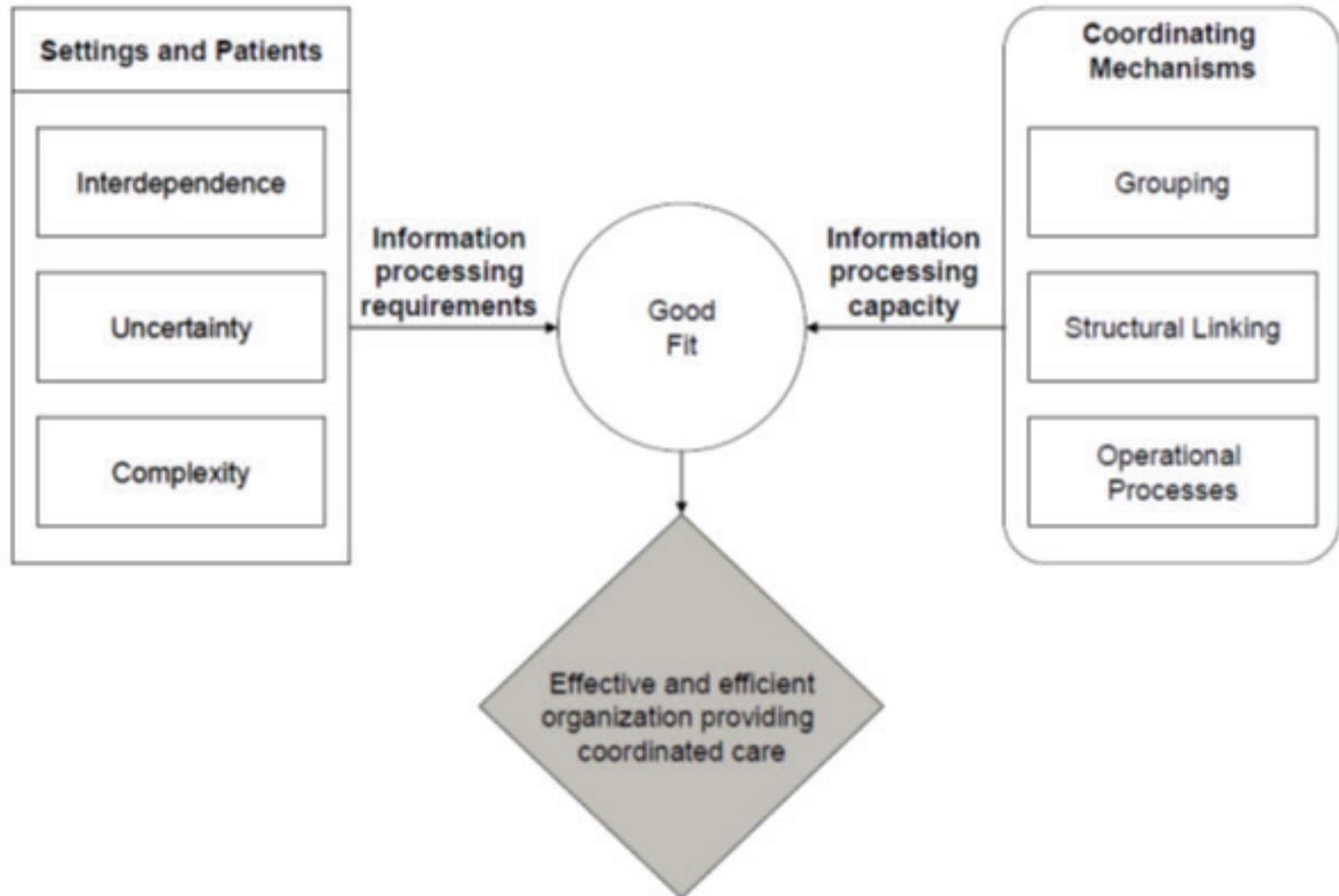


Figure 3 The nursing care performance framework.

Dubois CA, D'Amour D, Pomey MP, Girard F, Brault I. (2013). Conceptualizing performance of nursing care as a prerequisite for better measurement: a systematic and interpretive review. *BMC Nurs.*, (12)7. doi:10.1186/1472-6955-12-7 1472-6955-12-7. Retrieved from <http://www.biomedcentral.com/1472-6955/12/7>.

Attachment 14: Organizational Design Model/Framework



Nadler D, Tushman M. Strategic Organization Design. Glenview, Illinois and London, England: Scott, Foresman and Company; 1988.

As summarized and adapted in McDonald KM, Sundaram V, Bravata DM, Lewis R, Lin N, Kraft S, McKinnon M, Paguntalan H, Owens DK. Care Coordination. Vol 7 of: Shojania KG, McDonald KM, Wachter RM, Owens DK, editors. *Closing the Quality Gap: A Critical Analysis of Quality Improvement Strategies*. Technical Review 9 (Prepared by the Stanford University-UCSF Evidence-based Practice Center under contract 290-02-0017). AHRQ Publication No. 04(07)-0051-7. Rockville, MD: Agency for Healthcare Research and Quality. June 2007. Retrieved at <http://www.ahrq.gov/research/findings/evidence-based-reports/caregapt.html>.

Attachment 15: Patient Lock Model©: A Continuum of Care



The patient's needs are represented by the use of a digital pad, with one keypad determining the setting or care environment, another keypad the provider and skill level, and so on through outcomes, delivery model, and resource utilization in consultation with health care providers and family. The goals, focused on patient desired outcomes, are established by the patient and nurse, or health care provider.

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