

# CARE COORDINATION FOR MEDICAID BENEFICIARIES:

## PAPER 1: Literature Review



Prepared for the:  
Colorado Department of Health Care Policy and Financing

Shana Montrose  
August 23, 2012

**Paper 1**

Cover Art:  
ACA SEC. 3502. Establishing Community Health Teams to Support Patient-Centered Medical Home.  
Wordle by Jonathan Feinberg

## Contents

Executive Summary .....	3
I. Legislation, Regulation and Awards for Care Coordination .....	5
II. Definitions .....	6
III. National Studies on Effectiveness .....	7
IV. Population Segmentation .....	10
V. Other Policy Recommendations from the Literature .....	16
Core Components of Care Coordination.....	16
Payment.....	16
Workforce .....	17
Evaluation .....	18
Recommended Reading on Care Coordination.....	19

## Executive Summary

Care coordination has been debated by policymakers and healthcare providers for over twenty-five years – yet no one has conclusively defined it, let alone implemented it to scale or provided indisputable evidence of its benefits. Usually when we think about care coordination we think about clinical and non-clinical ways that support people in accessing the healthcare system and taking care of themselves wherever they live.

Despite its somewhat ambiguous nature, the general concept of care coordination stands at the forefront of health reform: for example, care coordination concepts and ideals permeate 2010's Patient Protection and Affordable Care Act (commonly known as the Affordable Care Act, or the ACA). This is due to the persistent belief that care coordination is the key to reducing cost while simultaneously improving health outcomes. The rationale for healthcare payment reform is to incentivize better coordination of care, which is thought to reduce waste, fix fragmentation problems, and enable efficiencies in the delivery system. In Colorado, the Accountable Care Collaborative (ACC) is becoming the predominant delivery system of Medicaid; care coordination is one of the defining elements of the ACC.

This paper is the first in a series of three, designed to provide leadership at the Department with research and directions for contemplating a comprehensive care coordination program. This paper is primarily a review of the extant literature surrounding care coordination, while the second paper provides a landscape analysis of care coordination in Colorado. The third paper recommends next steps for integration of care coordination concepts into Colorado Medicaid.

The first section in this paper provides a brief summary of care coordination activity in the national policy arena, focusing on Community Health Teams in the Affordable Care Act, the Accountable Care Organization Final Rule, and the Center for Medicare and Medicaid Innovation Health Care Innovation Awards.

The second section reviews the problem of the unsettled definition of care coordination by citing studies that have scanned existing definitions and offered new consolidated definitions. Having no universally accepted definition allows health care entities the advantages of experimentation with various models; however, the disadvantage is that, without that definition, it is difficult to compare the effectiveness of such experiments.

The third section reviews the studies, such as those produced by the Agency for Healthcare Research and Quality (AHRQ) and the Robert Wood Johnson Synthesis Project, of the effectiveness of care coordination at large, and finds these studies to be inconclusive. While they suggest that care coordination may result in improved health outcomes, there is also inconclusive evidence on whether such initiatives are simultaneously successful at reducing costs. These studies suggest that care coordination initiatives are difficult to compare because of their diverse nature – different settings, different target groups, different payment models – and that more study is required. Additionally, it may be too early to make judgments about cost-benefit analyses, as base-years are rarely good indicators of out-year performance. The other studies cited are the Mathematica study of the Medicare Coordinated Care Demonstration, the Washington University School of Medicine study, and the Vermont Blueprint for Health. These studies show varying levels of success.

The fourth section examines an area of care coordination that has garnered much attention in recent years: population segmentation. This section explains the rationale for developing care coordination models based on which groups of individuals will receive which services. It

introduces the two most common ways to segment populations: what we'll call the complex chronic condition model and the life cycle model.

The fifth section explores other policy recommendations, beyond patient segmentation, that require further investigation. There is a brief section on payment systems, which should be further developed as care coordination discussions progress and within the context of the existing ACC model and the political climate of Colorado. Hybrid models that offer per-member per-month (PMPM) care coordination payments on top of fee-for-service reimbursement seem to be the most politically feasible option right now. (See the second paper for more information on how care coordination is reimbursed in Colorado Medicaid.)

Another portion (which relies on a paper from the Case Management Society of America and the National Association of Social Workers) focuses on issues of the care coordination workforce to highlight how work environments and workloads affect care coordinators, which in turn effects care coordination in the system, and is an important consideration in the implementation of any successful care coordination plan. T The fifth section concludes with a brief discussion of the challenges of evaluating care coordination.

## I. Legislation, Regulation and Awards for Care Coordination

### **Community Health Teams in the Affordable Care Act**

Care coordination is mentioned in the Affordable Care Act (ACA) under sections on quality improvement, payment reform, and monitoring savings, as well as within special considerations of patients with diabetes or depression, dual eligibles, and health home members. Section 3502 of the Act establishes “Community Health Teams” (which bridge clinical and community settings) to support Patient-Centered Medical Homes and defines the role of these teams. They coordinate disease prevention and chronic disease management, develop interdisciplinary care plans, and involve patients and caregivers. They support Primary Care Physicians (PCPs) by coordinating access to prevention, and services that are quality-driven, cost-effective, culturally appropriate, and patient- and family-centered. Community Health Teams provide access to pharmacist-delivered medication management services (including medication reconciliation) and coordination of the appropriate use of complementary and alternative medical services; they also promote effective strategies for monitoring health outcomes and resource use by sharing information, supporting treatment decisions, and organizing care to avoid duplication.

### **The Accountable Care Organization (ACO) Final Rule Nov. 2, 2011**

Section 1899(b)(2)(G) of the Affordable Care Act requires an ACO to “define processes to...coordinate care, such as through the use of telehealth, remote patient monitoring, and other such enabling technologies.” (See the ACO definition of Care Coordination in the definitions section of this paper.) CMS suggests creating systems to identify high-risk individuals and processes to develop individualized care plans for targeted patient populations. Such care plans are to be tailored to—(1) the beneficiary’s health and psychosocial needs; (2) account for beneficiary preferences and values; and (3) identify community and other resources to support the beneficiary in following the plan. CMS establishes 65 Quality Performance Standards that ACOs must meet to receive shared savings. Six measures relate to care coordination; including measures of readmissions, EHR incentive payments, medication reconciliation and screening for falls risk. CMS will consider adding new care coordination measures for future years.

### **Center for Medicare and Medicaid Innovation Health Care Innovation Awards**

The Center for Medicare & Medicaid Innovation announced 107 Health Care Innovation Awards in May and June of 2012. Of these, 37 projects were specifically geared toward achieving the Triple Aim through improved care coordination. The setting varied from home care and hospice to hospitals and primary care – even to centers devoted to care coordination. Most projects either focused on complex multi-condition individuals flagged for high risk of readmissions or on specific conditions such as asthma or diabetes. Other projects focused on safe transitions and cultural competency. A number of projects planned to use technology to improve information sharing and communication between the patients and the health systems

In these pilots, care coordinators ranged from high school and college students to registered nurses and primary care physicians. Most projects involved training existing staff, as well as creating new positions such as care coordinator, case manager, community health worker, lay health worker, patient navigator, or patient coach. Many projects described a care coordination team with stratified qualifications or the use of an “embedded” care coordinator at an FQHC or school..

## II. Definitions

The following is a high-level summary of some of the research that has been done to develop definitions for care coordination and case management. The Department of Health Care Policy and Financing is not endorsing the use of these definitions, but is providing this information to the Long Term Care Advisory Committee's Care Coordination Subcommittee for informational purposes only.

Like many elements of the ACA, "care coordination" is required, but not defined. AHRQ hired Stanford University to review existing definitions of care coordination and to formulate a comprehensive definition. The Stanford team proved there is no extant universal definition: they conducted a targeted literature search in PubMed, CINAHL, and Health and Psychological Instruments databases and found over 40 distinct and heterogeneous definitions. Informed by this literature, Stanford proposed the following working definition:<sup>1</sup>

*Care coordination is the deliberate organization of patient care activities between two or more participants (including the patient) involved in a patient's care to facilitate the appropriate delivery of health care services. Organizing care involves the marshalling of personnel and other resources needed to carry out all required patient care activities, and is often managed by the exchange of information among participants responsible for different aspects of care.*

Also in 2007, the RWJF Synthesis Project conducted a literature review of existing definitions and concluded that:

*Care management is a set of activities designed to assist patients and their support systems in managing medical conditions and related psychosocial problems more effectively, with the aim of improving patients' health status and reducing the need for medical services. The goals of care management are to improve patients' functional health status, enhance coordination of care, eliminate duplication of services, and reduce the need for expensive medical services.*

The Case Management Society of America defines case management as:

*Case management is a collaborative process of assessment, planning, facilitation, care coordination, evaluation, and advocacy for options and services to meet an individual's and family's comprehensive health needs through communication and available resources to promote quality cost effective outcomes.*

There remains confusion about what distinguishes care coordination from case management and either from care management. Similarly, there is no universally agreed upon distinction between a patient navigator, health coach, community health worker, and care coordinator.

The November 2011 ACO Final Rule defines care coordination as:

*Strategies to promote, improve, and assess integration and consistency of care across primary care physicians, specialists, and acute and post-acute providers and suppliers, including methods to manage care throughout an episode of care and during its transitions, such as discharge from a hospital or transfer of care from a primary care physician to a specialist.*

---

<sup>1</sup> *Care Coordination Measures Atlas*. AHRQ Publication No. 11-0023-EF, January 2011. Agency for Healthcare Research and Quality, Rockville, MD. <http://www.ahrq.gov/qual/careatlas>

### III. National Studies on Effectiveness

**Agency for Healthcare Research and Quality:** Studies on the effectiveness of care coordination remain inconclusive. In 2007 ARHQ conducted a comprehensive analysis of published studies on care coordination, which included a full-text review of 75 articles published through June of 2005. These studies were difficult to compare due to divergent definitions of care coordination and because few studies evaluated care coordination as a general concept. Rather most studied a specific type of care coordination (e.g., assertive community treatment, case management, collaborative care, disease management, multidisciplinary teams, shared care, team coordination) in a defined setting (outpatient, hospital, specialist facility, community, home, hospice, or nursing home) and often for a particular condition (heart failure, stroke, diabetes, asthma, cancer, rheumatoid arthritis, pain management, palliative care, and multiple clinical focus) or for an identified population (e.g., the elderly or individuals with mental health conditions). This heterogeneity limits the ability to synthesize studies on care coordination. That said, AHRQ reports that there is evidence to suggest improved outcomes in a number care coordination studies.<sup>2</sup>

**Medicare Coordinated Care Demonstration:** The Medicare Coordinated Care Demonstration results were less promising. In 2001 CMS awarded grants to 15 out of 58 applicants to coordinate care in Medicare fee-for-service (FFS) settings. Mathematica evaluated these awards and reported to Congress that none of the 15 programs generated net savings over the original four-year evaluation period: 9 programs definitely increased net costs and 3 probably increased costs. Only 3 appeared to be cost neutral and were potential candidates for an extension. However, only 1 of the 3 candidates for extension Health Quality Partners, continued beyond 2008.<sup>3</sup>

**Washington University:** The Washington University School of Medicine in St. Louis was one of the original fifteen participants in the Medicare Coordinated Care Demonstration and one of many to drop out after failing to demonstrate reduction in hospitalizations or Medicare spending. In the original demonstration, spending increased by 12 percent. However, following a major redesign, the program managed to reduce hospitalizations by 12 percent and to reduce PMPM spending by \$217 per enrollee, which more than offset the \$151 care management fee. The new program focused on patients at the highest risk of hospitalization and offered stronger hospital transition planning and medication reconciliation; they also shifted from frequent telephonic communication to occasional in-person contact. Additionally, the University developed its own standard care plans to focus on specific conditions such as congestive heart failure, coronary artery disease, COPD, and diabetes.<sup>4</sup>

**RWJF Synthesis Project:** In 2009 the Robert Wood Johnson Foundation summarized research studies analyzing quality and cost outcomes of care management programs for patients with complex health care needs in a variety of settings (Figure 1). The Foundation's findings were more positive than those of the Mathematica study of Medicare demonstrations, but remained inconclusive. The RWJF report suggests that the Medicare demonstrations have mainly failed to

---

<sup>2</sup> McDonald KM, Sundaram V, Bravata DM, et al. Closing the Quality Gap: A Critical Analysis of Quality Improvement Strategies (Vol. 7: Care Coordination). Rockville (MD): Agency for Healthcare Research and Quality (US); 2007 Jun. (Technical Reviews, No. 9.7.) <http://www.ncbi.nlm.nih.gov/books/NBK44016/> McDonald KM, Sundaram V, Bravata DM, et al. Closing the Quality Gap: A Critical Analysis of Quality Improvement Strategies (Vol. 7: Care Coordination). Rockville (MD): Agency for Healthcare Research and Quality (US); 2007 Jun. (Technical Reviews, No. 9.7.)

<sup>3</sup> Schore, Jennifer, et al. "Fourth Report to Congress on the Evaluation of the Medicare Coordinated Care Demonstration," Mathematica, March 2011.

<sup>4</sup> Peikes, et al. "Pilot Ultimately Achieved Savings How Changes In Washington University's Medicare Coordinated Care Demonstration" Health Affairs, 31, no.6 (2012):1216-1226.



find consistent cost reductions because Medicare cost sharing does not account for short-term expenses that result in longer-term cost savings.<sup>5</sup>

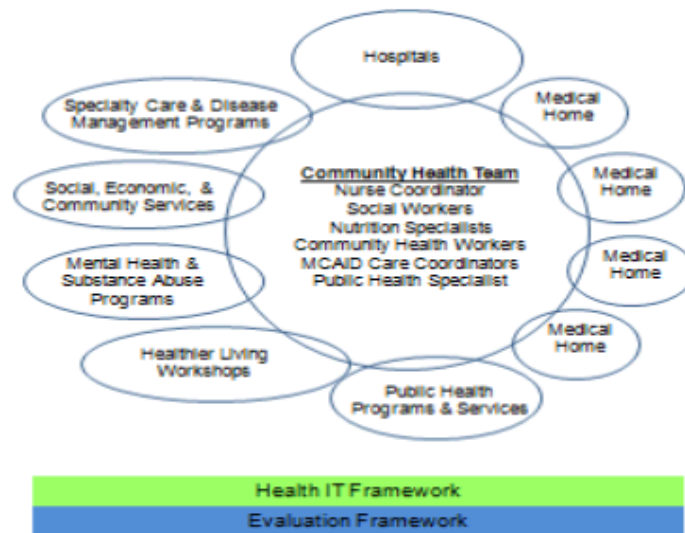
**Figure 1: Summary of findings of care management studies**

Site of study	Quality of care	Cost reduction
Primary care	7 out of 9 studies found improved quality	3 out of 8 studies found reduced hospital use for subpopulations
Vendor supported	Some evidence of improved quality	Inconclusive evidence
Integrated multispecialty group	2 out of 3 studies found improved quality	1 out of 3 studies found reduced costs
Hospital-to-home	Many studies found improved quality	Many studies found reduced hospital use and costs
Home-based	No clear evidence of improved quality	No evidence of reduced costs

Available at: <http://www.rwjf.org/files/research/52372caremtg.rpt.revised.pdf>

**Vermont’s Blueprint for Health:** The results of more recent studies remain mixed. Perhaps the most promising study is Vermont’s Blueprint for Medical Homes. Figure 2 shows the community health team at the center of the integrated health services model. Vermont is one of eight states in the Multi-Payer Advanced Primary Care Practice Demonstration. Vermont launched the Blueprint in 2006; the initiative is now operating three pilots. The first pilot showed significant decreases in hospital admissions and Emergency Department ED visits, as well as a reduction in PMPM costs. Once comprehensive financial reform is in place and the demonstration is rolled-out statewide, the initiative is expected to save 28.7 percent in incremental health spending by the fifth year. Results of key measurements on healthcare expenditures and utilization are shown in Figure 3.<sup>6</sup>

**Figure 2: Blueprint Integrated Health Services Model**



Source: Vermont Blueprint for Health, 2009 Annual Report

<sup>5</sup> Bodenheimer TS and Berry-Millett R. “The Synthesis Project, Issue 19,” Robert Wood Johnson Foundation. December 16, 2009.

<sup>6</sup> Bielaszka-DuVernay, Christina. “Vermont’s Blueprint for Medical Homes, Community Health Teams, and Better Health At Lower Cost,” Health Affairs, 30, no. 3 (2011):383-386.

**Figure 3: Results of key measurements on healthcare expenditures and utilization in Vermont**

Commercially Insured, Ages 18-64	Year to Year Growth (% Change)		
	2007 to 2008 Baseline	2008 to 2009 Startup	2009 to 2010 Operations
<b>Total Expenditures per capita</b>			
Participants	14%	5%	3%
Controls	17%	4%	10%
Statewide	7%	10%	4%
<b>Inpatient Expenditures per capita</b>			
Participants	12%	38%	-2%
Controls	50%	9%	34%
Statewide	17%	15%	4%
<b>Outpatient Emergency Department Expenditures per capita</b>			
Participants	32%	0%	3%
Controls	30%	6%	3%
Statewide	21%	8%	7%
<b>Outpatient Hospital Expenditures per capita</b>			
Participants	21%	3%	3%
Controls	24%	-1%	10%
Statewide	11%	11%	7%
<b>Inpatient Admissions per 1000</b>			
Participants	9%	-1%	-12%
Controls	14%	-10%	9%
Statewide	7%	1%	-2%
<b>Outpatient Emergency Department visits per 1000</b>			
Participants	15%	-11%	-9%
Controls	9%	-5%	-5%
Statewide	5%	-2%	-1%

#### IV. Population Segmentation

There is a growing trend toward strategically segmenting the population to provide effective, efficient, and equitable care coordination. For the purposes of this paper, efficiency is defined as the optimal allocation of resources to achieve effectiveness and equity, effectiveness is defined as matching outcomes to goals, and equity is defined as the allocation of resources according to need regardless of other attributes. While there is a variety of ways to segment the population, most models focus either on patients with multiple complex chronic conditions or divide the population by phases in the lifecycle trajectory.

##### Focus on Chronic Conditions

The average monthly Medicare expenditure of enrollees in the 2012 University of Washington study, which focused on patients with multiple conditions, during the year prior to enrollment was \$2,498; that's 4.5 times the national average for 2005.<sup>7</sup> In the June 2012 *Report to the Congress: Medicare and the Health Care Delivery System*, MedPAC reported that gaps in care coordination are symptoms of both fragmentation in the delivery system and lack of communication tools. Suggested improvements include a robust primary care system and a focus on populations with multiple chronic conditions and care transitions for this population.<sup>8</sup>

Figure 4 shows that, in 2009, average per capita spending increased exponentially by a patient's number of chronic conditions.<sup>9</sup> Rather than counting the number of conditions, TreoSolutions, the Department's State Data Analysis Contractor (SDAC), uses the 3M® Health Information Systems methodology<sup>10</sup> which categorizes conditions into minor, moderate, and dominant; it also considers at whether patients have multiple conditions by level of acuity. Figure 5 demonstrates the trend for Colorado Medicaid clients.<sup>11</sup>

---

<sup>7</sup> Ibid

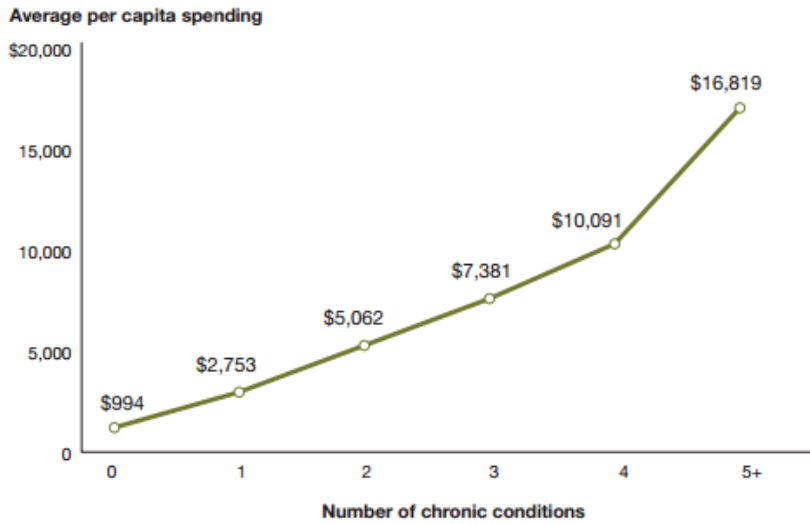
<sup>8</sup> MedPAC "Report to the Congress: Medicare and the Health Care Delivery System," June, 2012. Available at: [http://www.medpac.gov/documents/Jun12\\_EntireReport.pdf](http://www.medpac.gov/documents/Jun12_EntireReport.pdf)

<sup>9</sup> Ibid

<sup>10</sup> TreoSolutions. "The Significant Impact of Chronic "Pairs" on Readmissions and Cost." Available to HCPF staff [here](#).

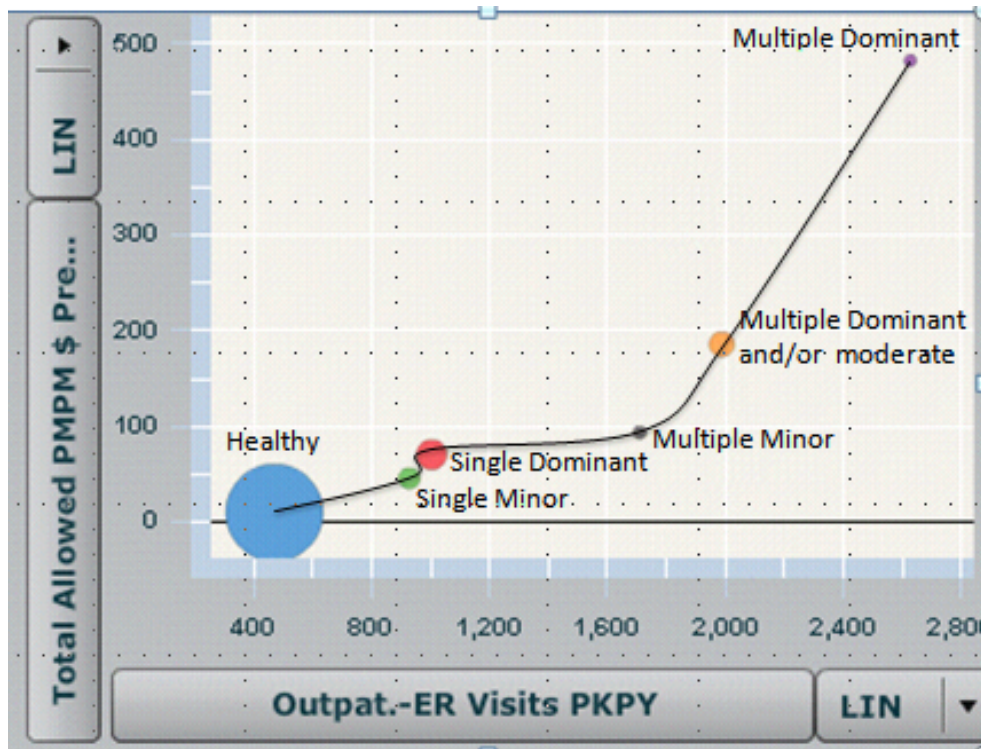
<sup>11</sup> This data was produced by the MPA members and providers tool and includes data from 530,700 Medicaid patients both in and outside of the ACC. This analysis excludes managed care patients and third-party liability patients because claims data for these patients does not accurately describe the full dollar amount of the patient's care. The bubble radius represents the number of members in each category.

**Figure 4: Average per capita spending by number of chronic conditions**



Available at: <http://www.rwjf.org/pr/product.jsp?id=52372>

**Figure 5: The cost of Medicaid patients with chronic conditions by ACRG4 acuity**



TreoSolutions Analysis of SDAC Data 4/2011-3/2012

The 2009 RWJF report provides a sample of predictive models that can be used for selecting patients for care coordination programs. These are:

#### **The Charlson Comorbidity Index**

This model was designed to measure the risk of 1-year mortality in hospitalized patients; it used diagnosis codes for 17 conditions weighted to reflect their seriousness.

#### **The Chronic Disease Score**

This model reviews the classes of medications a patient is taking, weights them to correspond to disease complexity and severity, and then predicts health status, mortality and hospitalization rates. It has been validated to correlate with physician ratings of disease severity and to predict mortality in the following year, hospitalization, and total health care costs after controlling for age, gender, and health care visits.

#### **The Hierarchical Condition Categories (HCC)**

The HCC model of disease severity has been adopted by the Centers for Medicare and Medicaid Services (CMS) to risk-adjust capitation payments under the Medicare Advantage program. The model creates 804 diagnostic groups, which are further aggregated into 189 condition categories (HCCs) that are clinically- and cost-similar.

#### **The Adjusted Clinical Groups (ACG)**

This system, developed at Johns Hopkins, can be used to predict high risk in patients for inclusion in care management, to set risk-adjusted capitation rates, and to provide a risk-adjustment tool for measuring the quality and efficiency of medical practices. This system assigns patients to one of 32 diagnosis groups based on the duration, severity, diagnostic certainty, cause, and need for specialty care services associated with the disease. Because a particular patient is likely to have diagnoses falling into more than one diagnosis group, 93 adjusted clinical groups (ACGs) were developed, and individual patients are assigned to an ACG based on their combination of diagnosis groups plus age and gender. Individuals within a given ACG have a similar pattern of morbidity and resource consumption over the course of a year ([www.acg.jhsph.edu](http://www.acg.jhsph.edu)).

## **The Lifecycle Approach**

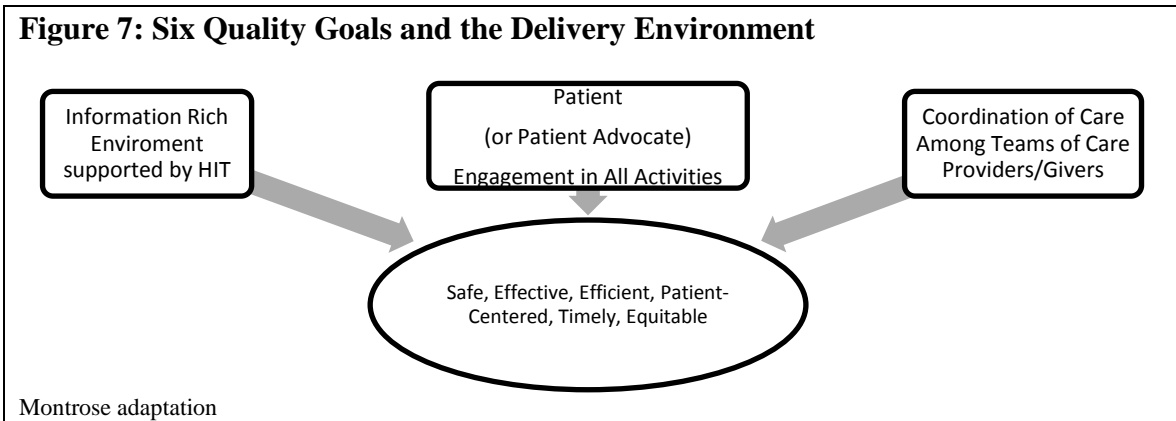
Another approach was proposed by CMS staff and published in the *Milbank Quarterly*. This model divides the population into eight groups; each of which has its own definitions of optimal health and distinct priorities among services (Figure 6). These groups are: healthy; maternal and infant health; acute with likely return to health; chronic conditions with generally normal function; significant but relatively stable; “dying” with short decline; limited reserve and serious exacerbations; and long course of decline. This framework, called “Bridges to Health,” responds to the six quality goals identified by the Institute of Medicine (IOM) in the seminal report *Crossing the Quality Chasm*.<sup>12</sup> Figure 7 shows the IOM vision of an information rich environment in which patients engage in all activities and in which the teams providing care to patients are well coordinated. Combined, these three factors enable the realization of the IOM’s six aims for care: safe, effective, efficient, patient-centered, timely and equitable.

---

<sup>12</sup> Lynn, Joanne, et al. Using Population Segmentation to Provide Better Health Care for All: The “Bridges to Health” Model. The *Milbank Quarterly*, Vol. 85, No 2 (June 2007), pp. 185-208.

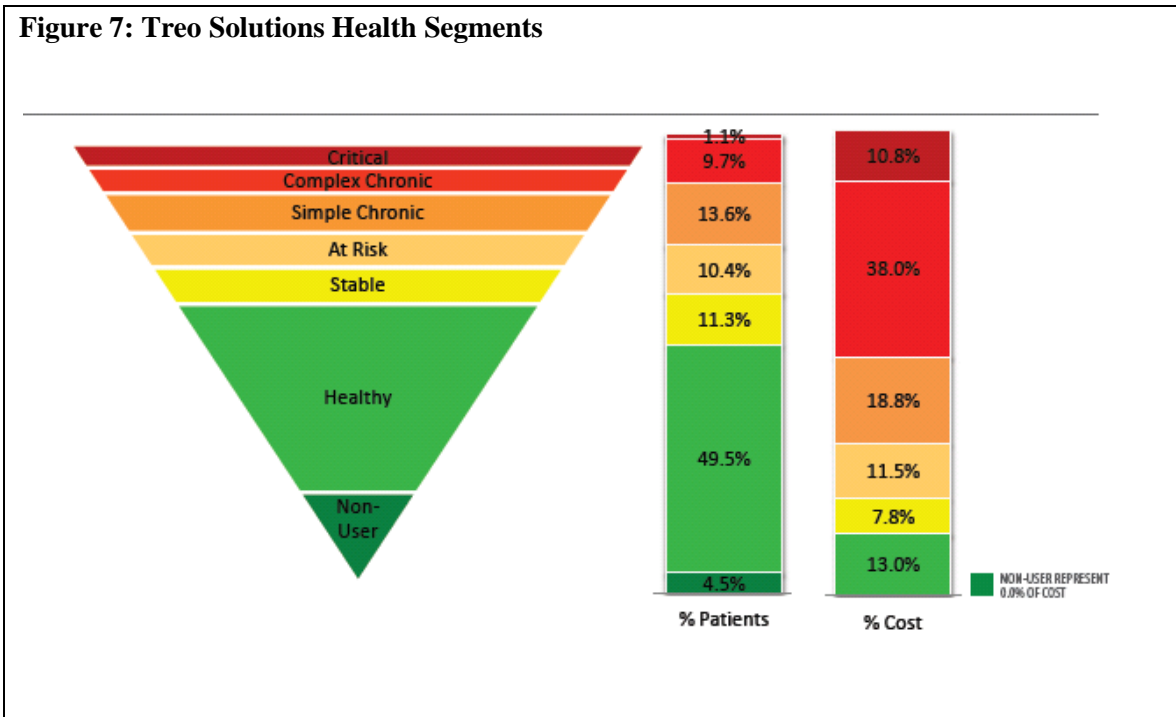
<b>Figure 6: Bridges to Health Model (HCPF adaptation)</b>		Priority Concerns for this population	Major components of healthcare
	IOM/AHRQ/FACCT Goals for these populations	Staying healthy	
Intensive Care Coordination	Healthy	Longevity, by preventing accidents, illness, and progression of early stages of disease	Office visits, occupational health, health information
	Maternal and infant health	Healthy babies, low maternal risk, control of fertility	Office visits, delivery, perinatal care, fertility control and enhancement
	IOM/AHRQ/FACCT Goals for these populations	Living with illness of disability	
Active Care Coordination	Acutely ill, with likely return to health	Return to healthy state with minimal suffering and disruption	Office visits, hospital, ER, medication, short-term rehabilitation
	Chronic conditions, with generally “normal” function	Longevity, limiting disease progression, accommodating environment	Office visits, self-management, hospital, ER
	Significant but relatively stable disability, including mental illness	Autonomy, rehabilitation, limiting progression, accommodating environment, care-giver support	Home-based services, environmental adaptation, institutional services
	IOM/AHRQ/FACCT Goals for these populations	Coping with illness at the end of life	
Intensive Care Coordination	“Dying” with short decline	Comfort, dignity, life closure, caregiver support, planning ahead	At-home services, hospice, personal care
	Limited reserve and serious exacerbations	Avoiding exacerbations, maintaining function, and specific advance planning	Self-care support, at-home services, 24/7 on-call access to medical guidance, home-based care
	Long decline, dementia and/or frailty	Support for caregivers, maintaining function, skin integrity, mobility, and specific advance planning	Home-based services, mobility and care devices, family caregiver training and support, nursing facilities

**Figure 7: Six Quality Goals and the Delivery Environment**



The life cycle model is appealing because it helps achieve the right care for the right person at the right time; the challenge is that it is more subjective. Treo Solutions, on the other hand, applies logarithms to claims data in order to categorize every Medicaid individual in one, and only one, health segment. Figure 8 shows national data, which indicates the relative cost of treating patients in different health status segments. Not surprisingly, patients with chronic conditions represent just under 10% of the population, but account for nearly 40% of the cost. Figure 8 explains the definition and methodology for this model.

**Figure 7: Treo Solutions Health Segments**



**Figure 8: Treo Solutions Health Segments Model**

<b>SEGMENT</b>	<b>DEFINITION</b>	<b>METHODOLOGY</b>
NON-USER	<i>No use of services</i>	Patients within this segment have not had any health system encounters; there is no cost associated with them and their illness burden is unknown.
HEALTHY	<i>No or temporary illness burden; low use of services primarily related to prevention, well care, and minor acute services</i>	Patients within this segment have a low use of healthcare services and do not have a recent history of significant event(s) that would indicate a chronic illness.
STABLE	<i>Low illness burden; modest use of services including well care and occasional acute care services</i>	Patients in the Stable segment have occasionally used healthcare services for acute events that have not manifested into any evidence of chronic illness.
AT-RISK	<i>Modest illness burden but with clear potential for deterioration; increasing, inconsistent use of well care, specialty, and acute care services</i>	Patients within this segment have used healthcare services, are showing early indications of chronic illness, and are at risk of higher utilization of services. This population is considered unstable and at-risk given the inconsistent use of services during the past year.
SIMPLE CHRONIC	<i>Medium illness burden; consistent use of services to treat a chronic condition</i>	Patients in the Simple Chronic segment have used healthcare services that are clearly targeted for treatment of a single, moderate chronic illness.
COMPLEX CHRONIC	<i>Medium to high illness burden; consistent use of services to treat severe or multiple chronic conditions</i>	Patients within this segment utilize healthcare services for the management and control of co-morbid, chronic illnesses that tend to be life-long conditions.
CRITICAL	<i>High illness burden; consistent use of services for life threatening illnesses</i>	Patients within the Critical segment use healthcare services that are clearly targeted for treatment of a chronic illness.



## V. Other Policy Recommendations from the Literature

### Core Components of Care Coordination

In 2009 the Robert Wood Johnson Foundation defined the key components of care management in a report entitled *Care management of patients with complex health needs*. These include:

1. Identifying patients most likely to benefit from care management.
2. Assessing the risks and needs of each patient.
3. Developing a care plan together with the patient/family.
4. Teaching the patient/family about the diseases and their management, including medication management.
5. Coaching the patient/family in how to respond to worsening symptoms in order to avoid the need for hospital admissions.
6. Tracking how the patient is doing over time.
7. Revising the care plan as needed.

In March 2012, the Care Continuum Alliance published a report called *Designing and Deploying Core Components of Integrated Dual Eligible Models* in which they develop the following core components:<sup>13</sup>

1. Centralized, Comprehensive and Interconnected Data
2. Health Risk Assessments and Stratification
3. Population-Specific and Personalized Care Planning
4. Care Coordination and Transitions of Care
5. Education, Training and Incentives for Patients and Providers
6. Program Evaluation and Outcomes toward Improvements

### Payment

In the June 2012 *Report to the Congress: Medicare and the Health Care Delivery System*, MedPAC emphasized that the most successful model from the Medicare demonstrations restricted systems, including payment reform, to support care coordination intervention. MedPAC told Congress that the approaches most likely to succeed were those that “create incentives to provide better, rather than more, care; give organizations the flexibility to use the best tools for their population; and support, facilitate, and permit innovation that will improve care for beneficiaries.”<sup>14</sup>

MedPAC supports payment reforms such as bundling and ACOs, but encourages intermediary steps in the existing FFS system; these include creating a PMPM and adjusting codes to allow practitioners to bill for care coordination activities, or using payment policy to reward or penalize outcomes resulting from coordinated or fragmented care.<sup>15</sup> In the Vermont Blueprint, PCPs in the pilots continued to receive FFS payments from commercial insurers and Medicaid. These practices also received a quality-based PMPM. (The PMPM started at \$1.20 and increased by \$0.08 with each five-point change in National Committee for Quality Assurance (NCQA) score.)<sup>16</sup>

---

<sup>13</sup> “Designing and Deploying Core Components of Integrated Dual Eligible Models,” Care Continuum Alliance, March 2012. Available at: [http://www.carecontinuumalliance.org/policy\\_paper\\_download.asp](http://www.carecontinuumalliance.org/policy_paper_download.asp)

<sup>14</sup> MedPAC, *Report to the Congress: Medicare and the Health Care Delivery System*, June 2012.

<sup>15</sup> Ibid

<sup>16</sup> Ibid

## Workforce

The Case Management Society of America and the National Association of Social Workers conducted a study in 2008 to better understand issues impacting caseload and how caseload impacts care coordination. They found the initial elements to impact caseload include: business environment, market segment (physical or behavioral health), clinical practice setting, types and characteristics of case management services, and technology and tools. In addition to these factors, specific factors concerning the individual case manager are significant. These factors include:

1. Responsibilities (case management and non-case management)
2. Skill level
3. Previous training and experience
4. Connectivity with patients/group
5. Contact frequency
6. Level of supervision and support
7. Type of team environment
8. Caseload maturity

The table below, which was slightly adapted, shows how various elements of the case manager experience affects clients; which has an impact on the overall system.

Case Manager Outcomes	Client Outcomes	System Outcomes
Job satisfaction	Changes in client’s health-related behaviors	Appropriate utilization of healthcare services
Competency	Changes in adherence	Cost effectiveness
Burnout	Changes in environmental barriers to services	Improved health status of population
Health and safety	Safe, effective transitions of care	Improved ability to self-manage and live independently, along with improved quality of life

There are a variety of caseload calculators, but this study emphasizes the importance of building calculators that are based on factors such as type of client, setting and responsibilities. The paper’s authors found studies that suggested higher likelihood of referrals, screenings, health instruction, and positive changes in blood sugar level among patients with nurse care managers. “Softer” interventions, such as emotional support, proved critical yet difficult to reimburse. The paper suggests that the capacity of case managers decreases with increasing caseloads, which negatively affects both the case manager and the clients as a result; however, more studies are needed to support this claim.<sup>17</sup>

The Vermont Blueprint has 5 full-time equivalent employees to staff the community health teams, which serves a population of about 20,000. Teams typically include nurse coordinators, behavioral health counselors, and social workers, but the composition of a team varies due to local determination. The annual cost of employing a 5 FTE team is \$350,000. This cost is shared by Vermont’s three commercial insurers as well as Medicaid.<sup>18</sup> Data on caseload from the Vermont pilots would be useful to assessing workload issues in Colorado.

<sup>17</sup> CMSA and NASW “Case Management Caseload Concept Paper: Proceedings of the Caseload Work Group,” Public version: Oct. 30, 2008.

<sup>18</sup> *ibid*

## Evaluation

AHRQ identified five ways to measure care coordination interventions. These are:

1. Patient Outcomes
2. Cost Outcomes
3. Care Delivery Process Measures
4. Coordination Mechanism Measures
5. Patient/Family Perception of Coordination

Unfortunately, reports AHRQ, these measures provide limited insight into the process that facilitated the appropriate performance in accordance with recommended guidelines. Care coordination measures reported in the literature tend to measure information exchanges, relational coordination among participants, or enabling resources. Further research is needed to develop the best ways of measuring these interactions and behaviors. Additionally, patient-reported perceptions of coordination provide a proxy for the overall experience of care coordination; while these measures can be meaningful, not all patients are aware of all coordination that occurs and individual patients' standards for such activities vary widely. Further research is needed to identify the best measures, data collection, and instruments to evaluate care coordination.

One source to consider while developing qualitative evaluation methods is the Vermont Blueprint for Health:

**VCHIP - Qualitative Evaluation of Provider and Practice Staff & Blueprint-Related Team Members**  
[http://hcr.vermont.gov/sites/hcr/files/Blueprint\\_QualitativeEval\\_VCHIP\\_July15\\_2011.pdf](http://hcr.vermont.gov/sites/hcr/files/Blueprint_QualitativeEval_VCHIP_July15_2011.pdf)

**Patient Perceptions Related to Adoption of the Blueprint for Health in Two Vermont Communities**  
[http://hcr.vermont.gov/sites/hcr/files/Blueprint\\_QualitativeEval\\_VCHIP\\_July15\\_2011.pdf](http://hcr.vermont.gov/sites/hcr/files/Blueprint_QualitativeEval_VCHIP_July15_2011.pdf)

**\*\*See Paper 2 and Paper 3 for this series for more information on Care Coordination in Colorado and recommendations to the Department.**

### **Recommended Reading on Care Coordination**

The following is a list of some key readings and research (along with links to those readings) in the area of care coordination and is provided to the Long Term Care Advisory Committee's Care Coordination Subcommittee, in response to a request for informational readings.

#### [Enhanced Primary Care Case Management Programs in Medicaid: Issues and Options for States](#)

James Verlier, Vivian Byrd, Christal Stone; Mathematica  
Center for Health Care Strategies, Inc.;  
Sept 2009; 36 pages

#### [Structuring, Financing and Paying for Effective Chronic Care Coordination](#)

Robert Berenson, Julie Howell; Mathematica  
Commissioned by The National Coalition on Care Coordination (N3C)  
June, 2009; 29 Pages

#### [Care Management of Patients with Complex Health Care Needs](#)

Thomas Bodenheimer, Rachel Berry-Millet; UCSF  
Robert Wood Johnson Foundation The Synthesis Project  
December, 2009; 19 Pages

#### [The Promise of Care Coordination: Models that Decrease Hospitalizations and Improve Outcomes for Medicare Beneficiaries with Chronic Illnesses](#)

Randall Brown; Mathematica  
Commissioned by The National Coalition on Care Coordination (N3C)  
March, 2009; 30 Pages

#### [Care Coordination: Reducing Care Fragmentation in Primary Care](#)

Safety Net Medical Home Initiative  
Qualis Health, The Commonwealth Fund, GroupHealth  
April, 2011; 5 Pages

#### [Designing and Deploying Core Components of Integrated Dual Eligible Models](#)

Care Continuum Alliance  
March, 2012, 15 Pages