



# Coordinating Care for Adults With Complex Care Needs in the Patient- Centered Medical Home: Challenges and Solutions



WHITE PAPER



*Agency for Healthcare Research and Quality*

*Advancing Excellence in Health Care* • [www.ahrq.gov](http://www.ahrq.gov)

Prevention/Care Management



# Coordinating Care for Adults With Complex Care Needs in the Patient- Centered Medical Home: Challenges and Solutions

WHITE PAPER



**Prepared for:**

U.S. Department of Health and Human Services  
Agency for Healthcare Research and Quality  
540 Gaither Road  
Rockville, MD 20850  
[www.ahrq.gov](http://www.ahrq.gov)

**Contract No. HHSA290200900019I/HHSA29032005T**

**Prepared by:**

Mathematica Policy Research  
Princeton, NJ

Eugene Rich, Mathematica Policy Research  
Debra Lipson, Mathematica Policy Research  
Jenna Libersky, Mathematica Policy Research  
Michael Parchman, Agency for Healthcare Research and Quality

AHRQ Publication No. 12-0010  
January 2012

This document is in the public domain and may be used and reprinted without permission except those copyrighted materials that are clearly noted in the document. Further reproduction of those copyrighted materials is prohibited without the specific permission of copyright holders.

**Suggested Citation:**

Rich E, Lipson D, Libersky J, Parchman M. Coordinating Care for Adults With Complex Care Needs in the Patient-Centered Medical Home: Challenges and Solutions. White Paper (Prepared by Mathematica Policy Research under Contract No. HHSA290200900019I/HHSA29032005T). AHRQ Publication No. 12-0010-EF. Rockville, MD: Agency for Healthcare Research and Quality. January 2012.

None of the investigators has any affiliation or financial involvement that conflicts with the material presented in this report.

## Acknowledgments

We would like to thank the following members of the expert panel for their helpful perspectives and insights in the preparation of this white paper: Richard Baron, MD (CMS Seamless Care Models Group, affiliated with Greenhouse Internists at the beginning of the project); Michael Barr, MD (American College of Physicians); Tom Bodenheimer, MD (University of California at San Francisco); Christine Cassel, MD (American Board of Internal Medicine); Lisa Iezzoni, MD (Harvard Medical School, Mongan Institute for Health Policy at Massachusetts General Hospital); K. Charlie Lakin, PhD (University of Minnesota Rehabilitation Research and Training Center on Community Living); Walter Leutz, PhD (Brandeis University); R. Sean Morrison, MD (National Palliative Care Research Center, Brookdale Department of Geriatrics and Adult Development, Hertzberg Palliative Care Institute, Mount Sinai School of Medicine); Howard Tuch, MD (Suncoast Hospice); Don Liss, MD (Independence Blue Cross); and Leslie Tucker (American Board of Internal Medicine Foundation).

We would also like to thank the following experts for sharing their important work and for allowing us to describe their programs: Kyle Allen, DO (Summa Health System); Chris Collins (North Carolina Office of Rural Health and Community Care); Paul Cook (Community Health Partnership); Lori Feia (Community Health Partnership); Denise Levis Hewson, MSPH, RN (North Carolina Community Care Networks, Inc.); Carolyn Holder, MSN, RN (Summa Health System); Richard Hudspeth, MD (Community Care of Western North Carolina); Marie Maes-Voreis, RN, MA (Minnesota Health Care Homes); Robert J. Master, MD (Commonwealth Care Alliance); Skip Radwany, MD (Summa Health System); Cherylee Sherry, MPH (Minnesota Health Care Homes); Robert L. Rich, Jr., MD (Cape Fear Valley Medical); and Jennifer Wehe (Community Care of Western North Carolina). Thanks also to Becky MacAninch-Dake; Anne Shields, MHA, BSN; and Juneau Whittaker of the Washington State Department of Social and Health Services, who shared details of the Washington State Medicaid Integration Program (WMIP).

At the Agency for Healthcare Research and Quality, Janice Genevro and David Meyers provided very helpful comments and guidance during the development of this paper. At Mathematica, we thank Deborah Peikes, Erin Taylor, and Arnold Chen for providing overall direction and support throughout the project.

## Abstract

Patients who have complex health needs require both medical and social services and support from a wide variety of providers and caregivers, and the patient-centered medical home (PCMH) offers a promising model for providing comprehensive, coordinated care. Smaller practices, however, face particular challenges in coordinating care for these patients. This paper explores the current landscape of PCMH services for patients with complex needs, details five programs that have addressed the challenges of caring for these patients, and offers programmatic and policy changes that can help smaller practices better deliver services to all patients, including those with the most complex health needs.

## Contents

<b>Chapter 1</b>	<b>Introduction .....</b>	<b>1</b>
<b>Chapter 2.</b>	<b>How the Patient-Centered Medical Home Could Improve Care for Patients with Complex Needs.....</b>	<b>3</b>
<b>Chapter 3.</b>	<b>Barriers to Transforming Primary Care to Serve Patients with Complex Needs .....</b>	<b>7</b>
	Primary Care Payment .....	7
	Assuring Clinical Competence.....	7
	Managing the “Tyranny of the Urgent” .....	8
	Fragmented Financing and Administration of Health and Social Services .....	8
	The Special Issues of Smaller Practices .....	8
<b>Chapter 4.</b>	<b>Essential Elements of Care Coordination for Populations with Complex Needs .....</b>	<b>11</b>
	Conduct and Regularly Update a Comprehensive Needs Assessment.....	11
	Develop and Update an Individualized Care Plan.....	12
	Facilitate Access to Medical Care and Home and Community-Based Services and Supports .....	12
	Regularly Monitor and Communicate.....	13
<b>Chapter 5.</b>	<b>Strategies for Supporting Primary Care for Populations with Complex Needs .....</b>	<b>15</b>
	Program Sponsors, Participating PCPs, and Populations Served .....	15
	Approaches to Care Coordination and Case Management .....	16
	Other Support to PCPs in Managing Care for Complex Populations .....	18
	Payment to PCPs for Care Coordination .....	20
	Lessons for Providing Care Coordination Support to PCPs.....	22
<b>Chapter 6.</b>	<b>Conclusion and the Path Forward .....</b>	<b>27</b>
	Policies and Strategies to Surmount Barriers to Serving Complex-Needs Patients in Small PCPs .....	27
	Research to Inform More Effective Ways of Financing and Organizing Support for PCPs Serving Patients with Complex Needs.....	29
	Summary.....	32
	<b>REFERENCES.....</b>	<b>35</b>



<b>APPENDIX .....</b>	<b>39</b>
Table 1. Profile of Organizations Supporting Primary Care Practices in Serving Complex-Needs Populations.....	41
Table 2. Characteristics and Case Management Approaches of Participating Primary Care Practices, by Program.....	45
Table 3. Financing Sources and Payment for Case Management of Complex Populations, by Program .....	49
<b>TABLE REFERENCES .....</b>	<b>52</b>

## FIGURES

Figure 1. Patient Experiences.....	3
Figure 2. Methods .....	15
Figure 3. How the Affordable Care Act can support adoption of patient-centered medical homes.....	33

# Chapter 1. Introduction

In light of widespread problems with primary health care in the U.S., many policymakers have called for major improvements in primary care as a key element of successful health care reform. The patient-centered medical home (PCMH) is a model for strengthening primary care through the reorganization of existing practices to provide patient-centered, comprehensive, coordinated, and accessible care that is continuously improved through a systems-based approach to quality and safety (AHRQ, 2011). Diverse stakeholders, including Federal and State agencies, insurers, physicians and other clinicians, employers, and patient advocacy organizations, are engaged in numerous efforts to promote primary care practice transformation into PCMHs through payment reform, practice support, and recognition programs (Maxfield et al., 2008; Berry, 2009; Adams et al., 2009; CMS, 2009; Deloitte, 2008; PCPCC, 2009; Qualis, 2009).

PCMH standards have focused thus far on improved access to and coordination of medical services. There are, however, some groups of patients with more complex health care needs who require more intensive medical services coordinated across multiple providers, as well as a wide range of social supports to maintain health and functioning. Because of the range and intensity of services needed, these patients tend to be the most costly, and PCMHs that can effectively coordinate the full range of medical, mental health, and social services may have special benefit for them. In the process of acquiring such capabilities, primary care practices may become more effective in providing care to their broader patient population and better ready to serve when those patients suffer complex problems as well.

This paper describes the challenges, as well as some promising approaches, for improving the capacity of primary care practices (PCPs) to deliver coordinated and comprehensive care to patients with complex needs. To explore this topic we consider two groups of community-dwelling, noninstitutionalized patients<sup>1</sup> with especially complex health and social support needs: (1) the frail elderly and (2) working-age adults with disabilities. According to the 2009 American Community Survey, about 10 percent of adults ages 18 to 64 (19 million individuals) and 37 percent of adults age 65 and older (14 million individuals) have a disability (U.S. Census Bureau, 2009).<sup>2</sup>

---

<sup>1</sup> About 1.2 million individuals are long-term residents of nursing homes, with lengths of stay more than 90 days. (Jones Dwyer, Bercovitz, et al., 2009). However, this paper focuses on care for those living in home and community-based residences.

<sup>2</sup> The American Community Survey is representative of the U.S. civilian noninstitutional population and defines disability as a serious difficulty in one of six capacities: hearing; seeing; concentrating, remembering, or making decisions; walking or climbing stairs; dressing or bathing; doing errands alone.



Like all people with chronic health conditions, these patients generally use more health services and receive care from more and different health professionals than do people without chronic conditions. But most of these patients with complex care needs also have functional limitations, which means they often need assistance from family members or paid personal care assistants to perform activities of daily living, such as toileting, eating, and getting dressed. They also frequently rely on such social services as accessible transportation or home-delivered meals provided by community organizations. Furthermore, given the complexity of their health problems, they are more likely to have chronic, progressive illnesses or experience life-threatening complications. Thus, palliative care and hospice services are more often a consideration for these patients than for others in primary care, further expanding the range of potential services that must be coordinated to optimize quality of life.

In considering the challenges of providing high-quality primary care for these complex-needs patients, we focus particular attention on the capabilities of small practices. While the transformation of a practice into one that meets PCMH standards is difficult for most PCPs, it can be especially challenging for smaller practices where managing the workload is a daily struggle and where limited financial reserves, staff time, and administrative infrastructure may complicate practice redesign efforts. Yet, most primary care clinicians work in such settings: 78 percent work in practices of 5 or fewer physicians (Hing, 2006).

The goal of this paper is to promote broader understanding and stimulate discussion about policies and strategies that could help typical smaller PCPs transform into effective medical homes that appropriately serve complex-needs patients. Accordingly, our audience includes private and public payers, policymakers, primary care professional leaders, primary care researchers, and advocates for the PCMH. We first discuss the importance and potential benefits of transforming current PCPs to serve these complex-needs population groups (Chapter 2). We then turn to the current challenges that prevent many primary care clinicians from doing so (Chapter 3) and review the key elements of coordinating care for complex-needs populations (Chapter 4). We next describe several successful programs across the country that work in collaboration with smaller PCPs to provide comprehensive, coordinated care across health and community social service systems. In this discussion, we identify lessons from their experiences (Chapter 5) and conclude by highlighting promising ways of overcoming the barriers to providing primary care to complex-needs patients, and we also identify topics for future research (Chapter 6).

## Chapter 2. How the Patient-Centered Medical Home Could Improve Care for Patients with Complex Needs

Accounts of the health care system's failures in primary care are numerous, but perhaps the most poignant are those highlighting the daunting problems of complex-needs patients and their families. Because of their severe or multiple health conditions and functional limitations, these patients are more likely to go to hospitals, emergency rooms, and long-term care facilities, and to need more supportive services to help with activities of daily living or arrange for transportation. As a result, they are more vulnerable to fragmented care and "falling through the cracks."

The frustration of patients is evident (see Figure 1), and the burden placed on their families is large. Even professionals with expertise in health care delivery and long-term care find it hard to navigate across the two systems. For example, Drs. Rosalie and Robert Kane, prominent long-term-care experts, describe the way the current health care system often causes confusion among their patients, contributes to misunderstanding of patients' inter-related conditions, and subverts patient privacy and quality of life (Gross, 2005). Despite their own considerable expertise, the two doctors found it difficult to arrange reliable home care for their own family members who were frail or disabled. Said Dr. Robert Kane: "It's technically complex, emotionally taxing, there's not much help out there, and panic is the normal reaction. If Rosalie and I can't do it, what chance does the average person have?" David Lawrence, the former CEO of Kaiser Permanente, described his mother's care after she fell as a "pick-up soccer game in which the participants were playing together for the first time, didn't know each other's names, and wore earmuffs so they couldn't hear one another" (Lawrence, 2003). The disjointed, myopic care Dr. Lawrence's mother received stalled her recovery and taxed—emotionally and physically—the patient and the family. Unfortunately, these experiences are all too common. An AARP survey showed that a significant proportion of older adults experience problems with their medical care, including a medical error (23 percent), poor communication (20 percent), readmission (15 percent), and lack of followup (6 percent) (AARP, 2009).

In light of the existing medical system's failure to provide accountable, accessible, comprehensive, and coordinated care, the primary care medical specialties for adults have reaffirmed the responsibility of primary care clinicians to address the broad range of patient health care needs (AAFP, 2011; ACP, 2006),

### Figure 1. Patient Experiences

- "A lot of things I think I can handle myself, but we [patients] are not medical people and we don't know the terminology that [the doctors] use," said a 71-year-old man.
- "Sometimes, I have to spend all day on the phone to my doctor, even to get an appointment," said an 81-year-old woman.
- "They don't assist on the transition [from the hospital back to] home. You have to be tough; be an advocate ... I'd like somebody to tell me what's available. I don't know," said an 82-year-old man caring for his wife, who has terminal cancer and dementia.

Quotes are from focus groups with patients and caregivers (AARP 2009).

and have promoted the PCMH as a means of practice reorganization to help primary care clinicians address health system problems (Martin et al., 2004; ACP, 2006). The medical home is intended to modernize and build the practice infrastructure to support high quality primary care, which the Institute of Medicine (IOM) defines as “the provision of integrated, accessible health care services by clinicians who are accountable for addressing a large majority of personal health care needs, developing a sustained partnership with patients, and practicing in the context of family and community” (IOM, 1978; IOM, 1996).

In theory, a PCP transformed into a PCMH should improve care for all its patients, including those with complex needs. Indeed, the pediatrics profession first articulated the medical home concept more than 30 years ago as a way to enhance primary care through better coordination of care for children with special health care needs (Cooley, 2004). Thus far, however, PCMH accreditation and recognition standards, PCMH research priorities, and advocates of primary care improvement have given limited attention to the challenges faced by small practices trying to properly care for complex-needs patients (AAAHC, 2009; AAFP, AAP, ACP, AOA, 2007; BCBS, 2011; NCQA, 2011; URAC, 2011; Landon et al., 2010; PCPCC, 2009). Because complex-needs patients receive services from multiple health professionals and social service agencies, they are at the highest risk for fragmented care and poor outcomes. Examples include poor chronic disease care for those with persistent mental illness (Frayne et al., 2005), inadequate preventive services for adults with developmental or physical disabilities (Fisher, 2004), critical lapses in assessment of vulnerable elders (Boult, Counsell, Leipzig et al., 2010), and poor comfort management for the terminally ill (Field and Cassel, 1997). A fully transformed PCMH practice should be able to address many of these shortcomings. We use the framework from Agency for Healthcare Research and Quality (AHRQ) for the core functions of the PCMH to describe in more detail how the medical home model could support the delivery of high quality primary care for patients with complex needs.

- **Patient-centered: The primary care medical home provides primary health care that is relationship-based with an orientation toward the whole person.** As noted in the AHRQ definition, “partnering with patients and their families requires understanding and respecting each patient’s unique needs, culture, values, and preferences...” Individual patient preferences can have a major influence on a broad range of decisions, from the scope of appropriate medical interventions to the venue of care (Peikes, Genevro, Scholle et al., 2011). Maintaining independence and patient involvement in self care is also an important element in the care of complex-needs patients, so it is especially important that “the medical home practice actively supports patients in learning to manage and organize their own care at the level the patient chooses...” Furthermore, it is often essential that the families of frail elders, patients at the end of life, and individuals with disabilities “are core members of the care team ... [and] fully informed partners in establishing care plans” (AHRQ, 2011).
- **Comprehensive care: The primary care medical home is accountable for meeting the large majority of each patient’s physical and mental health care needs,** including prevention and wellness, acute care, mental health treatment, rehabilitation, and chronic care. Primary care clinicians typically cannot provide on their own the broad array of services often required by complex-needs patients, so medical homes may have to employ or partner with diverse teams of care providers. As described by AHRQ, medical home teams “might include physicians, advanced practice nurses, physician assistants, nurses, pharmacists, nutritionists, social workers, educators, and care coordinators” (AHRQ, 2011). For patients with complex needs, the team might also include

community mental health workers, personal care assistants, physical and occupational therapists, and family caregivers. AHRQ's definition suggests that some medical home practices may operate through "virtual teams linking themselves and their patients to clinicians and services in their communities"; this virtual-team approach may be particularly relevant to smaller PCPs that cannot afford to hire staff to manage all of the services required by patients with complex needs.

- ***Coordinated care: The primary care medical home coordinates care across all elements of the broader health care system.*** including specialty care, hospitals, rehabilitation centers, home health care, and community services and supports. Patients with complex needs typically require not only a broad range of medical services provided by diverse clinicians and health care institutions but also home and community-based services (HCBS) to overcome functional limitations and maintain independence (personal assistants, home modifications, home care aides, physical therapy, assistive technology, and respite programs supporting family caregivers, for example). Such patients may also need services to facilitate social participation in the community, such as accessible transportation and adult day care (Peikes, Brown, Peterson et al., 2009). The diversity of services calls for robust care coordination; without it, there is great risk of diffused professional responsibility and fragmented care that does not meet patient needs. Primary care coordination may also call for the medical home team to serve as an advocate for patients with complex needs. To achieve this for these most complex patients, medical homes "... [must] excel at building clear and open communication among patients and families, the medical home, and members of the broader care team" (AHRQ, 2011).
- ***Superb access to care: The primary care medical home delivers accessible services.*** For complex patients, the emphasis on enhanced access to timely care by medical homes is especially important, yet highly challenging. Over time, patients with multiple serious chronic conditions are subject to more health concerns and acute events, thus warranting more consultations with medical professionals. Patients nearing the end of life are often medically unstable and require timely access to medical advice to improve comfort and provide reassurance to family. Frail elderly patients and others with physical disabilities often have limited mobility as well as communication impairments, necessitating alternative means for access to assessment and advice, such as around-the-clock telephone or electronic access to a member of the care team as well as the ability to use alternative methods of communication that respond to patients' preferences and needs.
- ***A systems-based approach to quality and safety: The primary care medical home demonstrates a commitment to quality and quality improvement.*** There are a host of challenges to assuring and improving the quality of care for patients with multiple chronic conditions (Ostbye et al., 2005). Primary care clinicians can be overwhelmed by the task of keeping up with all of the recommended services and clinical guidelines for their care. Moreover, many medical practices see only a few patients with a given disability or constellation of disabilities, and even frail elders may make up only a small proportion of a medical home's patient panel. Therefore, patients with complex needs would particularly benefit from the systems-based approach to quality and safety inherent to the PCMH, drawing on decision-support tools, taking into account patient experience, and using population health management approaches.



## Chapter 3. Barriers to Transforming Primary Care to Serve Patients with Complex Needs

The organization and financing of the U.S. health system pose many barriers to fulfilling the core functions of a PCMH. Many of the problems are compounded for PCPs trying to provide high quality care to patients with complex needs.

### Primary Care Payment

The predominant method of paying physicians in the U.S.—fee-for-service (FFS) payments such as those set by the Medicare Physician Fee Schedule—provide little reward for the core primary care functions (Berenson and Rich, 2010). While this creates a barrier to effective primary care for any patient, it imposes even greater challenges to comprehensive and coordinated care for patients with complex illness. For example, it is more efficient under current FFS payment mechanisms to identify and document the health problems of a complex-needs patient and then refer that individual to specialists for diagnosis or treatment. Moreover, physician fees do not cover the extra costs of comprehensive geriatric assessments (Brangman and Hansen, 2010), nor do they cover the additional time required to communicate with patients with cognitive impairments or to examine those with physical disabilities. Furthermore, FFS payments are generally based on documented services provided during encounters, which means there is no additional payment for non-visit-related care coordination activities like outreach to patients, collaborating with community agencies on care plans, determining patient eligibility for public assistance benefits, or consultations with specialists, family members, or home care providers. For most PCPs, the additional effort to provide comprehensive assessment and management as well as care coordination for patients with complex needs will result in a financial loss to the practice, even if these efforts generate savings for the overall health system.

The current FFS system also makes it hard for PCPs to provide enhanced access to care, an important service for complex-needs patients who often have urgent issues. Existing practices struggle to maintain adequate “same-day” openings in their schedules for urgent visits during regular business hours (Mehrotra, Keehl-Markowitz, Ayanian, 2008). Additionally, there is no payment to offset the higher costs of after-hours visits or weekend services, either in the office or in the patient’s home. Neither does current FFS payment support 24/7 telephone or email communication access, even though patients with complex illness often need assessment and advice of the sort that does not require an office visit. Some of these patients, in fact, have considerable difficulty getting to the office for face-to-face encounters due to limited physical mobility, frailty, transportation issues, or cognitive impairment.

### Assuring Clinical Competence

Compounding the problem of limited reimbursement is the fact that complex-needs patients often have highly specific diagnostic and management issues. While primary care clinicians may receive relevant training early in their careers, medical knowledge evolves over time, and needed competencies decline without use (Choudhry, Fletcher, and Soumerai, 2005; Lin, Xirasagar, Lin, et al., 2008). Busy primary care clinicians generally cannot devote much time to maintaining skills and knowledge in narrow topics applicable to the care of just a few patients. For example, comprehensive care of frail elders requires skill

in recognizing subtle depression; differential diagnosis of delirium, frailty, and cognitive impairment; management of poly-pharmacy; and knowledge of gero-pharmacology. Primary care clinicians with many older patients may keep abreast of new developments in geriatrics, but clinicians serving a predominantly younger population may not. Similar issues arise for the care of patients with severe and persistent mental illness (Croghan and Brown, 2010), developmental disabilities, spinal cord injuries, and a host of other specific disabling conditions. Likewise, providing excellent palliative care requires its own specific knowledge base and competencies (AAHPM, 2009). Thus, accountability for the comprehensive care of patients with uncommon problems can pose a substantial professional burden and an additional barrier to delivering high-quality primary care.

### **Managing the “Tyranny of the Urgent”**

(Berenson, Hammons, Gans et al., 2008)

Coordinated and comprehensive care of patients with complex needs is further challenged by new acute medical problems that these patients frequently present to primary care clinicians. The natural history of chronic illnesses common to complex patients includes increased risk of acute complications, fluctuations in symptoms from the underlying condition, and incremental progression to organ failure. Therefore, primary care clinicians are compelled to address these acute medical issues when they arise. However, the time, attention, and emotional energy spent by the providers and the patient on these acute medical problems distracts from other important (albeit less pressing) activities, such as updating needs assessments in nonmedical domains, talking with family caregivers, and coordinating long-term support and community-based services.

### **Fragmented Financing and Administration of Health and Social Services**

The health and social service systems often have separate and distinct financing streams, delivery systems, professional training programs, eligibility rules, and terminology (Leutz, 1999). These divisions further complicate the ability of primary care clinicians to manage the full range of services used by patients with complex care needs. Depending on their income and level of disability, these patients may or may not be eligible for Medicaid and other programs for the aged and disabled, which can provide services not covered by Medicare or traditional private insurance. A variety of community-based organizations, such as Area Agencies on Aging (AAAs) and community mental health programs, may provide access to needed resources for some patients with complex needs. Depending on the covered benefits and reimbursement policies of State Medicaid programs, including those provided through waivers, other services may be available to some patients. The fact that these support services are “siloed” by payer substantially increases the administrative burden on the practice that is trying to determine which patients are eligible for these services. This complexity challenges not only the primary care clinicians’ ability to determine patient eligibility for services, but also the agencies’ ability to interact effectively and efficiently with primary care clinicians.

### **The Special Issues of Smaller Practices**

Over three quarters of primary care clinicians in the United States work in practices of five or fewer physicians (Hing, 2006). In general, smaller practices have little “reserve capacity” or flexibility to devote extra time to a new complex-needs patient or to a new set of comprehensive care challenges for an



established patient. While larger medical groups may have more complicated governance, they can draw upon a greater number and breadth of personnel, sometimes including nurse practitioners, social workers, dietitians, pharmacists, and other health professionals who can assist in the management of some patients with complex needs. Larger practices can also permit (and even encourage) areas of special focus among primary care clinicians, allowing, for example, one to stay up-to-date on resources for people with severe mental illness and another on services for people with spinal cord injury. Additionally, the substantially greater population of patients served by larger practices increases the likelihood of a critical mass of complex-needs patients with shared conditions and requirements. For smaller practices, the diverse range of impairments afflicting complex patients and the relatively low prevalence of such cases can create serious challenges. While some PCPs address this challenge through adopting a focus on patients with particular conditions (for example, geriatrics and HIV medicine), most do not specialize this way or are located in communities without a sufficient number of patients of each type to make this model clinically appropriate or financially viable. Thus, small PCPs rarely have sufficient numbers of patients with similar complex needs to make efficient use of any extra investments to develop relevant expertise and capabilities. When combined with inadequate provider payment and complicated health insurance and social service eligibility rules, few small practices can build and maintain the full range of internal expertise needed to effectively serve diverse complex patients.

Experience from the American Academy of Family Physicians' National Demonstration Project, one of the largest efforts to strengthen small PCPs, illustrates the challenges involved in transforming even highly committed small practices to provide better primary care for complex patients (Nutting et al., 2011). While the demonstration neither provided additional financial resources nor altered the underlying FFS system for participating practices, even the practices that had support from transformation facilitators were unable to put all of the basic components of a medical home in place during the 2-year demonstration. Virtually all practices had difficulty integrating with community services or working in teams. The authors contend that to keep patients from falling through the cracks in a highly fragmented system, small practices need a "health care neighborhood [to] coordinate and integrate care and eliminate the cracks." When one considers all of the medical care, social support, and home service providers that potentially comprise the health care neighborhood for complex patients, it is hard to imagine the unaided small primary care practice being able to identify and organize, much less keep track of all those needed services (Taylor, Lake, Nysenbaum, et al., 2011). Smaller PCPs will need additional resources and expertise to effectively coordinate and integrate care for complex-needs patients.





## Chapter 4. Essential Elements of Care Coordination for Populations with Complex Needs

In a PCMH, the level of care coordination depends largely on the complexity of needs of each patient:

As complexity increases, the challenges involved in facilitating the delivery of appropriate care also increase, often exponentially. Factors that increase the complexity of care include multiple chronic or acute physical health problems, the social vulnerability of the patient, and a large number of providers and settings involved in a patient's care. Patients' preferences and their abilities to organize their own care can also affect the need for care coordination. For patients with uncomplicated care needs in ambulatory settings, primary care physicians may be able to coordinate care effectively as part of their routine clinical work. **However, increasingly complex needs can overwhelm these informal or implicit coordinating functions, leading to the need for a care team to explicitly and proactively coordinate care** (Meyers et al., 2010; emphasis added).

Over the past 40 years, a variety of innovative care coordination programs have been developed and tested for these patient populations with complex needs. Numerous trials, pilot programs, and demonstrations have produced consensus on the basic elements of coordinated care and case management<sup>3</sup> for them: (1) comprehensive needs assessment, (2) individualized care planning, (3) facilitating access to needed services, and (4) communication and monitoring (Leutz, 1999; Nolte and McKee, 2008; Boulton and Wieland, 2010). In describing each of these components of care coordination, we discuss the potential challenges faced by small PCPs in trying to deliver patient-centered primary care for patients with complex needs.

### Conduct and Regularly Update a Comprehensive Needs Assessment

Care coordination for complex patients starts with a comprehensive assessment of each individual's need for health and social supports. This involves much more than a standard medical history and complete physical examination. In addition to evaluation of medical diagnoses and the traditional family and social history, a comprehensive assessment should note how individuals function in their daily lives and with their family and other social supports. This assessment should also clarify the patient's preferences regarding community participation and goals for care. The purpose of this comprehensive assessment is to identify all care needs and preferences of both the patient and the caregivers that can be used to formulate the individualized care plan. Primary care clinicians, in conjunction with other providers involved in the patient's care, should periodically update this information, including when new medical problems or other changes in health or functional status arise. Ensuring complete assessment of each of these domains often requires a multidisciplinary team of health and mental health professionals, as well as social workers

---

<sup>3</sup> This paper uses the terms "case management" and "case manager" because they have been regularly used to encompass the functions described in Section IV (assessment, care planning, facilitating access, and communication with providers). "Care management" or "care manager" is used when practices and programs described their case managers or care coordination activities using that term.

and therapists, depending on individual circumstances. For many, including the most complex patients, needs assessments may also have to include direct assessment of the home environment, which can determine the feasibility of care plans and identify adaptations necessary to accommodate an individual's need for assistance with daily living activities (Boult and Wieland, 2010).

Clearly, comprehensive needs assessment is much more than most primary care clinicians presently have the training or resources to perform. For example, the medical and social support service needs of an 80-year-old patient with diabetes, double amputation, and renal failure are quite different from those of a 55-year-old woman with diabetes, schizophrenia, and neuropathy. Moreover, the knowledge, skills, and tools needed to assess the value of various long-term support services for these specific complex patients will be quite different from those a primary care clinician employs to diagnose the neuropathy or manage renal disease. In many cases, developing such a comprehensive assessment requires teamwork between the primary care practice team and those outside of the primary care setting, such as home health nurses, social workers, and caregivers.

## **Develop and Update an Individualized Care Plan**

A care plan tailored to the patient's needs and based on the comprehensive assessment forms the foundation for care coordination efforts. Patients, their families, and the care team should jointly create this plan. Ideally, it should reflect current and long-term needs and goals for care; specify the types and frequency of all planned health, rehabilitation, and mental health treatments, medications, home care services and supports, and other services; identify who is responsible for providing each service; and flag any critical issues that trigger a need to revise the plan. In addition, the process of developing the care plan should involve the individual—and family members if appropriate—to ensure that it reflects their values and preferences. Additionally all members of the care team, including the patient, should have easy access to the plan.

Even primary care clinicians trained to conduct comprehensive assessments of complex patients (such as geriatricians and geriatric nurse practitioners) will often need additional knowledge and resources to develop a realistic care plan for a specific patient with complex illness. The typical PCP does not determine which services someone with a specific disability may qualify for, through private health or disability insurance or public programs, so they may not be aware of the available benefits. Family or other informal caregivers can also serve the needs of patients with complex illness, and their roles should be included in the care plan. Thus, to develop an adequate care plan, the medical home for these patients would need to devote the time and expertise to include family caregiving, reflecting cultural issues and family dynamics at play for each patient. Furthermore, a realistic care plan for complex-needs patients should reflect the physical setting of the patient's home as well as that individual's ability to access needed services.

## **Facilitate Access to Medical Care and Home and Community-Based Services and Supports**

Complex populations often have conditions and needs that require a multitude of health and long-term services and supports, so care coordination requires attention to a broader set of services than is typically offered by most PCPs. These services include assistive technology and durable medical equipment,

ranging from canes and commodes to motorized wheelchairs, to provide mobility and independence. Frequently, if individuals have disabilities that prevent them from performing activities of daily living, they might need hands-on help in the form of physical therapy, personal care assistance, transportation in accessible vans to get to medical appointments or shop for groceries, and home-delivered meals. In addition, they often need help accessing public benefit programs, such as Medicaid or food stamps.

Assuming all of this—the comprehensive needs assessment, determining eligibility for public and private benefits, and selecting appropriate and accessible vendors—is done well, someone must arrange and facilitate receipt of these services. This poses another challenge to the small practice wanting to provide comprehensive primary care services to complex patients. Even if practice staff members can correctly determine what services are needed and whether the patient is eligible for benefits, they must find providers willing and able to deliver the services. Primary care clinicians already struggle to coordinate care within the traditional medical care infrastructure (Taylor, Lake, Nysenbaum et al., 2011; Pham, O'Malley, Bach et al., 2009). When trying to fulfill medical home responsibilities for complex-needs patients, they face the additional challenge of navigating the social service system and referral processes. In many cases, it is also difficult to obtain payer authorization and timely appointments with other providers. In addition, the burden of repeatedly documenting a patient's ongoing need for these services, often on a monthly basis, strains the primary care clinician and team even further.

Some patients with complex illness have frequent life-threatening complications; others are in the final stages of illness. These patients may benefit from advance care directives and may need help getting appropriate palliative care, hospice, or other end-of-life services. Primary care clinicians are often expected to facilitate the conversations necessary for patients and families to make difficult decisions about requesting such services. Patients with complex illness often require an extensive array of ongoing medical services as well, including not only primary care visits but ongoing specialized medical care (for example, chemotherapy or dialysis), mental health services, physical or occupational therapy, or skilled nursing care. Exacerbated illnesses will expand this range of services to specialized consultations, diagnostic centers, and possibly acute care hospitals and skilled nursing facilities. Thus, the extent of medical care coordination needs for complex patients can present a daunting challenge to primary care practices.

## **Regularly Monitor and Communicate**

Last, but perhaps most important, effective care coordination can be accomplished only through regular monitoring of the patient's health status, needs, and services, and through frequent communication and the free exchange of information. It often requires multiple modes of communication (in person, by phone, or in writing) and increasingly depends on the effective use of electronic tools (for example, remote physiologic monitoring, electronic data acquisition and reminders, networked electronic health records (EHRs), patient education modules, and informed decisionmaking tools). While the frequency of communication depends on a variety of factors, it must occur at several levels: (1) between health care professionals and patients and their families to ensure they understand the care plan and their responsibility for self care, and any help, such as respite care, that is available; (2) within teams of health and social service professionals; and (3) across the entire care spectrum, particularly when individuals transfer between care settings (for example, hospital, rehabilitation facility, nursing home, or community residence). If care is to be coordinated effectively, all communication must be timely, and it must include

the information that each team member must know in order to provide care that is congruent with a patient's preferences without subjecting the team to information overload. Another key element involves monitoring and support for patient adherence to therapy and other elements of self care.

Many small PCPs currently lack the information management capabilities needed for effective monitoring and communication for complex patients. There are already widespread communication lapses just between medical specialists and primary care (O'Malley and Reschovsky, 2011; Chen, 2011) for regular patients without complex needs. Furthermore, the capabilities of current health information technology to solve this problem are quite limited (O'Malley, 2011). In light of the numerous other additional caregivers involved, and the range of care plan elements to be monitored, medical homes face much greater challenges keeping track of all the services that may warrant followup for complex patients.

## Chapter 5. Strategies for Supporting Primary Care for Populations with Complex Needs

Although the challenges of coordinating services and supports for patients with complex needs are many, there are several programs around the country that illustrate promising approaches for supporting and collaborating with PCPs serving them. We focused on programs that have experience working with smaller, independent PCPs because they let patients maintain existing relationships with primary care clinicians while giving PCPs extra resources to manage the greater needs of complex-needs patients. This section describes five of these programs and explains the different approaches they use to support and collaborate with smaller primary care practices in providing coordinated health and social services to complex-needs patients. In Figure 2 we explain our approach to identifying and selecting the five programs. Detailed information about the approaches used by each program is provided in Tables 1-3.

### Figure 2. Methods

Through searches of published and “grey” literature, recommendations from a technical expert panel (selected for their expertise in medical home policy, aging and disability services, end-of-life care, financing, small practice environments, and advocacy on behalf of people with disabilities), and conference presentations, we identified more than 20 promising programs serving complex-needs patients. We selected programs that met four criteria: (1) serve frail elderly or adults with disabilities; (2) work with a variety of relatively small primary care practice (PCP) sites, defined as fewer than 10 primary care clinicians; (3) coordinate care across medical and social service systems, though this can be done differently—for example, care coordinators employed by the practice, by the program, or through a team of individuals in the practice and the program; and (4) have been operating for several years.

We obtained background information about the programs from published articles, descriptions such as those in the AHRQ Innovations Exchange, and program Web sites. We then conducted short discussions with program leaders to gather information about their experiences and the lessons learned in working with small and medium-sized PCPs. The interviews covered four major topics: (1) the organizational structure, staffing, and processes used to support PCPs in providing care that meets PCMH standards; (2) strategies for overcoming challenges that typically prevent PCPs from effectively serving complex patients, such as availability of funds to support the extra time and resources to care for them; (3) factors that facilitate effective care coordination and linkages between medical and social services; and (4) policies or practice supports that would enable more PCPs striving to be patient-centered medical homes to effectively serve complex-needs patients.

### Program Sponsors, Participating PCPs, and Populations Served

The five selected programs are sponsored by different types of organizations (Table 1):

1. A nonprofit, physician-led practice support organization with regional branches (Community Care of North Carolina).
2. A State health or Medicaid agency (Minnesota Health Care Homes).

3. A large, integrated health system (Summa Health System in Ohio) with a geriatrics program (Center for Senior Health) that provides many services and programs to frail elderly patients.
4. Two nonprofit health plans (Commonwealth Care Alliance in Massachusetts and Community Health Partnership in Wisconsin).

The number of participating primary care practices in each program varies from about one dozen in Summa Health System's program to more than 1,400 in Community Care of North Carolina (Table 3).

Most of these programs are partnerships among several organizations, including public payers, such as State Medicaid and sometimes Medicare (through Medicare Advantage Special Needs Plans or Medicare demonstration programs), nonprofit or for-profit private health plans, and various community agencies.

All five programs serve patients who are disabled and have multiple chronic conditions and/or behavioral health problems (Table 1). Three of the five programs serve people who are eligible for Medicaid only or both Medicaid and Medicare (dual eligible's). The other two programs—Minnesota Health Care Homes and Summa Health System—serve people with any type of health insurance, and finance program operations and pay physicians for care coordination using either State funds and payments by all health plans (as in Minnesota), or State Medicaid and grant funds (as Summa Health System does). The predominance of Medicaid-eligible individuals and Medicaid financing for these programs is due to a few factors: (1) complex-needs populations tend to be older, have disabilities, and are poor, which makes them more likely to qualify for Medicaid than those without such characteristics; and (2) Medicaid was among the first payers to explicitly recognize the need to compensate PCPs for the additional time and resources required to adequately care for complex-needs populations.

## **Approaches to Care Coordination and Case Management**

### **Case Manager Arrangements**

Three of the five programs—Commonwealth Care Alliance (CCA) in Massachusetts, Community Care of North Carolina (CCNC), and Community Health Partnership (CHP) of Wisconsin—provide or contract for case management staff to work in or with PCPs to coordinate care for patients (Table 1). Summa Health System uses case management resources in three of its programs—the After Discharge Care Management of Low-Income Frail Elderly (AD-LIFE) trial, Promoting Effective Advanced Care for Elderly (PEACE) trial, and SAGE partnership programs<sup>4</sup>—by arranging for local Area Agency on Aging (AAA) case managers to organize long-term services and supports and to meet with Summa Health System geriatrics and palliative care medical staff in order to coordinate health and social services. Minnesota's Health Care Homes (HCH) requires PCPs seeking State Health Home certification to identify staff within the practice responsible for care coordination, with flexibility in how this standard

---

<sup>4</sup> The SAGE Partnership is a 15-year collaborative partnership between Area Agency on Aging 10B, Inc. and Summa Health System's Institute for Senior and Post Acute Care. The partnership laid the foundation for the AD-LIFE and PEACE research trials and actual case management integration. The AD-LIFE trial is funded through AHRQ Grant # R01 HS014539. The PEACE trial is funded by a grant from the National Palliative Care Research Center.

can be fulfilled.<sup>5</sup> In all five programs, a variety of professionals with different types and levels of training serve as care coordinators or case managers, including physicians, advanced practice nurses, registered nurses, licensed mental health counselors, and social workers. Many programs also use nonprofessional community health workers in case management teams.

## Case Management Resources and Caseloads

There is significant variation in how case managers are shared with PCPs across and within each program, and in average case manager caseloads (Table 2). Some of this variation reflects the funding and resources available, and some reflects differing complexity or severity of the patients in the practice who receive case management. For example, primary care nurse practitioners or nurse case managers in the CCA program typically have caseloads of 40 to 65 patients, a smaller ratio than the others, because most patients in its Senior Care Options (SCO) program are dually eligible for Medicare and Medicaid, as well as nursing home eligible, so their health and social support needs are relatively high. By contrast, North Carolina Community Care Network case managers have much higher caseloads (one to 4,000), although only about 5 to 8 percent (200 to 300) of the 4,000 individuals receive intensive case management, and only a few are nursing home eligible (those who are would be enrolled in the State's home and community-based services [HCBS] waiver case management program).

## Allocation of Case Managers to PCPs

When deciding how to allocate case management staff and what types of professionals to engage with the PCPs, program leaders almost universally stressed the importance of flexibility in matching staff and resources to the needs and culture of each PCP. Hence, the number of case managers and whether they are shared among several PCPs or dedicated to just one PCP depends on the size of the practice, the types and roles of staff already employed in the practice, and the number of complex patients in the PCP panel (see Table 2). For example, CCA develops a staffing plan based on assessment of the patient mix, including the number of nursing-home-certifiable patients, ambulatory patients, and other characteristics. In North Carolina, regional Coordinated Care Networks stratify the practices' patients based on prior health care use patterns and patient-level data to identify those who need the most supports. Some practices have such a large number of complex-needs patients who require intensive case management services that the regional network assigns one or more case managers directly to the practice.

"A lot of the services that [case managers] connect patients to are low technology solutions that have a high payoff. For example, we had an asthma patient who kept coming back to the emergency room, and it turned out that she had a problem getting transportation to the pharmacy to fill her medications. The case manager helped her work out a way to get her medications so that she didn't end up in the ER."—Dr. Robert Rich, Cape Fear Valley Medical Center (a CCNC provider)

<sup>5</sup> Minnesota Health Care Home standards require primary care clinics to have a dedicated care coordinator who serves as a liaison between providers, patients, and their families as well as between the health care home and community resources. This person is responsible for: developing a plan for communication among the care team, patient, and family; performing post-discharge and transition planning and monitoring; providing referrals to specialists; and communicating test results. The practice must also link patients to community-based organizations and public health resources, such as disability and aging services, social services, transportation services, and home health care services.



**Teams.** Case managers in all five programs strive to work with at least some local PCP leadership and staff in teams to share all relevant information about patient needs, preferences, and circumstances when developing care plans. Several program leaders said they judge the success of their case managers or care coordinators by the degree to which they are accepted and integrated into the PCP. For example, CCA creates multidisciplinary teams, using its own clinical staff and that of the PCP to perform comprehensive health and social assessments, provide enhanced primary care, and develop individualized care plans. For patients who are eligible for nursing home care, a nurse practitioner often heads the team and has responsibility for first response and home visits. In this way, nurse practitioners extend the primary care team, providing “enhanced” primary care outside of the clinic setting. CCA also has team members specializing in geriatric social work, behavioral health care, and palliative care available for consultation. According to one CCA staff member, “We consider our program successful when everyone at the practice views our external team members as internal to the practice. We employ and deploy resources, but it requires leadership from the practice and CCA program directors to ensure the CCA team is integrated into the practice.”

A physician leader of one PCP in North Carolina said, “The case managers are physically in our practice, sitting down the hall, and available to answer questions. They interact with the physicians and with the network staff and practice consultants to jointly determine what support or services are needed to lower inappropriate utilization.” One of the regional networks in CCNC added, “We want our care managers embedded in practices. We want the care management staff integrated into the team so that care managers are seen as an extension of the health care team. We push for full integration so that care managers can gain ready access to patient records and provide real-time consultations.”

The team-building process is not without tensions, however, and several programs noted the challenges of bringing disparate providers together. For example, in Minnesota, community agencies that have long been providing case management to older adults and people with disabilities expressed concern that if the primary care practices participating in HCH are paid for care coordination, the community agencies will lose the funding they receive to coordinate care for these individuals. A program official said they deal with this concern by “trying to reassure and remind everyone that the goal is to move care coordination closer to the patient and the doctor.” CHP in Wisconsin described variable relationships with the several large health systems managing practices in their region. They noted these systems “... shouldn’t reinvent the wheel. They should go out and see if there are existing programs like ours that they might engage with... [and] work with existing partners who are already working to tackle the problem.”

## **Other Support to PCPs in Managing Care for Complex Populations**

In addition to providing case management staff, four of the five programs dedicated considerable resources to support practices by helping them reorganize workflow and systems, conducting home assessments, and providing tools to enhance PCP capacity to assure continuous access and ensure care coordination. The range of additional supports to PCPs included 24/7 call lines for patients to complement or substitute for the practice’s after-hours coverage; recommendations on (or provision of) EHR systems, Web-based health information technology (IT) registries, and referral tracking systems; and support in review and analysis of service utilization and quality indicators for the PCP patient panel. Some also facilitated ready access to geriatrics or mental health consultation. The Minnesota Department

of Health makes small grants (up to \$5,000) available to small practices to help them meet the State's HCH standards; clinics have used the funds for registries, care planning, and patient-engagement initiatives, among other things.

In exchange for these supports, most programs have corresponding requirements for participating PCPs, such as expectations regarding PCMH certification, health IT infrastructure, and participation in quality reviews.

### **EHRs/Health IT**

EHRs and other health IT are important tools for case management and care coordination. They enable teams to record and share information on many different aspects of patient needs and service use including: (1) results from needs assessments for different domains (health, medications, home environment, social support, and family caregiver); (2) referrals and results from lab and radiologic tests, specialty consults, and home health and other community-based care; (3) real-time monitoring of such critical events as hospital admissions and ER visits that trigger a need for followup; (4) prompts and reminders regarding visits and preventive care; (5) decision-support tools for complex patient care, such as clinical care paths and guidelines; and (6) community resources lists.

Though each of the five programs report that they and their providers use EHRs, three programs (CCA, Minnesota HCH, and CCNC) require PCPs to use an EHR system that feeds information to the overarching program as a term of participation (see Table 2). These systems allow the program to readily access provider-level data on cost, utilization, and outcomes, which are then used to identify and direct services to high-need, high-cost users. The Minnesota program's certification standards for PCPs require each one to have an electronic and searchable patient registry. The program Web site provides a list of low- and no-cost registries for PCPs to select. Unrelated to the program requirement, about 65 to 70 percent of all clinics in Minnesota already have an EHR system because State law requires clinics to meet health IT meaningful use criteria by 2015. Some clinics, however, do not use very advanced registry capabilities. Some practices use their registries to track referrals to social services; others do not.

The other programs reported that their providers and care coordinators used separate electronic systems but consider information-sharing an essential part of each program. At Summa Health System, providers operating on separate EHR systems overcome interoperability barriers by taking notes on a single patient record and communicating via email, phone, fax, and alpha-page (similar to text messaging). At CHP and Summa Health System, case managers accompany clients to clinic visits and discuss relevant case history with the provider, helping to provide the information that would otherwise be lost between separate electronic systems.

### **Quality Measurement and Improvement**

All of the programs emphasize quality improvement, and many use the EHR and data capabilities described above to report cost, quality, and utilization outcome measures to PCPs, program management, and patients (Table 1). For example, CCA collects data from the Web-based electronic medical records that its practices maintain, and meets every quarter with practice leaders to review and compare the practice's results on costs, service utilization, and quality indicators, such as 30-day hospital admission rates with those for SCO enrollees overall. They jointly identify areas to target for improvement and

maintain a very collaborative approach toward practice improvement. In North Carolina, the State CCNC quality improvement staff helps practices use evidence-based guidelines to manage their populations and measure performance through a wide array of patient health measures. Through the Quality Measurement and Feedback program, the networks collect Healthcare Effectiveness Data and Information Set (HEDIS) measure data for Medicaid enrollees from claims data and chart audits, and audit each practice once a year to compare its outcomes to State averages.<sup>6</sup> Minnesota has separate statewide health improvement and quality reporting systems; for example, it contracts with Minnesota Community Measurement, which posts quality scores and data aggregated by clinic on a public Web site at <http://www.mnhealthscores.org>. The State also applied for the AHRQ Impact Grant, which would provide funds to facilitate quality improvement in small and medium-sized clinics.

Although there is some variation in certification standards, three of the five programs use National Committee for Quality Assurance (NCQA) or State-specific NCQA-like standards to determine whether practices are using PCMH processes (Table 2). Minnesota, for example, requires their participating practices to demonstrate annually that they meet the State's minimum certification standards, which go beyond those of NCQA by requiring: informed consent, patient inclusion and shared decisionmaking, dedicated staff time for care coordination, routine face-to-face communication between clinicians and care coordinators, patient followup discussions and planning, collaboration with community-based organizations and public health resources, audits of effective care coordination, participation in a learning collaborative, and a structure for an in-house quality improvement team.<sup>7</sup> Summa Health System currently uses NCQA standards and is considering seeking Accountable Care Organization (ACO) certification.

Three of the programs sponsored team-based quality improvement through peer-to-peer learning and in-person meetings, though their breadth and intensity varies. CCNC uses a hierarchical approach that provides technical assistance to the network staff, who then sponsor peer-to-peer learning for PCPs in their network. Minnesota sponsors a learning collaborative in which PCPs meet with each other to share strategies for implementing medical home criteria and improving care. Summa Health System also facilitates shared learning through monthly, in-person meetings during which skilled nursing facilities, palliative care specialists, geriatricians, home care providers, care coordinators, and community agencies identify ways to improve transitions of care. Recently, the disparate agencies worked together to design a post-acute-care transfer form with fields for the information that each agency needs to receive a new patient, helping ensure that critical information is not lost or delayed when a patient transfers settings.

## **Payment to PCPs for Care Coordination**

In most cases, programs serving patients with complex needs pay physicians to participate in care coordination activities (see Table 3). Payment helps both in the recruitment of PCPs and at least partially compensates the practice for the additional time and resources involved in team-based care. Two of the

---

<sup>6</sup> An overview of chart review measures with references to organizations that endorse similar standards, is available at <http://www.communitycarenc.org/elements/media/related-downloads/overview-of-chart-review-measures.pdf>.

<sup>7</sup> A crosswalk of the NCQA and MN Health Care Home certification standards is available at [http://www.health.state.mn.us/healthreform/homes/certification/CertificationAssessmentTool\\_100423.doc](http://www.health.state.mn.us/healthreform/homes/certification/CertificationAssessmentTool_100423.doc).

five programs studied—those in North Carolina and Minnesota—pay per member per month (PMPM) fees to PCPs to compensate them for the time spent in coordinating care for complex-needs patients, meeting with case managers, and participating in quality improvement activities. CCA is paid risk-adjusted capitation rates from Medicare and Medicaid for those who enroll in its SCO managed care plan (a Medicare Advantage Special Needs Plan for dual enrollees). From these funds, CCA pays primary care clinicians and other providers on a full or partial capitation basis and shares savings with PCPs that accrue from avoided hospitalizations and nursing home admissions (Meyer, 2011). CCA also covers the cost of additional staff and other services to SCO enrollees from these savings. Summa Health System's program does not pay physicians for care coordination, although they did pay a one-time, per-patient fee to physicians in the intervention group of the AD-LIFE trial.

The monthly care coordination payment to PCPs in Minnesota varies by level of patient need. The State's Department of Health and Department of Human Services created a tiered payment tool to pay for care coordination (Minnesota Department of Health, 2010). Primary care clinics are required to assess and diagnose each patient using the tool and use a patient registry to identify patients who are the most complex. Patients are rated on scale of 0 to 4 (0 for those with no severe needs, 4 for those with the greatest number of diagnoses). PMPM fees are then scaled to the tiers, ranging from no payment for tier 0, about \$10 per month for tier 1, to about \$61 per month for tier 4; this payment increases proportionately based on a patient's supplemental risk factors. The tiering system also takes into account mental and behavioral health, psychosocial needs, and language. In the Multi-Payer Advanced Primary Care Practice demonstration expected to begin in Minnesota in 2011, Medicare will pay rates similar to those of Medicaid, although private insurers and clinics are free to negotiate their own rates with providers.

The monthly PMPM care coordination payment in North Carolina is shared between the PCP and the regional support networks (Community Care Networks). CCNC pays physicians \$5 PMPM for Medicaid aged, blind and disabled (ABD) beneficiaries (including dual eligible's), and half as much for nondisabled Medicaid adults and children. CCNC pays CCNs an additional \$13.72 PMPM for ABD enrollees, which they use to cover the extra costs associated with embedding "care managers" in practices, quality improvement activities, and new programs, such as palliative and transition-care initiatives that began in 2011. One of the physicians we interviewed said that \$5 PMPM to coordinate care for ABD patients, or \$60 a year, "doesn't even cover the cost of a single office visit. Care managers are definitely vital to keeping our costs down, but we are still losing money serving these patients, and many providers are shutting their doors to new Medicaid patients. At that rate, we have to coordinate care and provide services to complex patients on the backs of altruistic physicians (those willing to provide uncompensated care). It doesn't add up."

CHP, in Wisconsin, tried compensating primary care clinicians for their care coordination work. In the past, CHP offered to pay PCPs \$25 per month or \$125 per care plan review for case management. Very few practices availed themselves of this opportunity, however, because they found it hard to incorporate it into their billing and reimbursement mechanisms. Evidently the payment amount and patient numbers did not justify the additional administrative effort required.

## Lessons for Providing Care Coordination Support to PCPs

These programs offer several lessons about what motivates PCPs to become involved with and remain in programs that coordinate care for complex-needs patients. In addition, they indicate the types of adjustments that may be necessary to adapt these programs to different types of PCPs, and the range of organizations that might serve as sponsors.

### Clinician and Practice Engagement

Many program representatives stressed the importance of (1) directly engaging the primary care professionals and office staff in the practice and (2) providing sufficient flexibility to allow clinic teams to design the care coordination approach that works best for them. This point of view echoes a finding from research on what makes for effective case management and care coordination programs for patients with complex needs—substantial engagement with primary care practices appears to be key to program success (Peikes, Chen, Schore et al., 2009). Both PCP engagement and flexibility appear to be critical for providing initial motivation to contemplate participating, as well as subsequent commitment to implement, care coordination programs. CCA, for example, typically takes 3 months up front to develop a shared understanding of the clinical model and obtain support and buy-in from all clinicians and staff in the practice. North Carolina program officials also highlight the importance of local provider engagement; all of the regional networks are led by physicians drawn from the local practices, and the State gives each regional network the flexibility to design its programs in ways that fit local circumstances. The Minnesota HCH program requires PCPs to identify professionals within the practice who are responsible for care coordination but allows flexibility regarding which staff to designate and how to organize the functions. The CHP program attempts to achieve PCP engagement by including the program nurse practitioner in each client's office visit.<sup>8</sup>

### Clinician Leadership

Many program leaders emphasized that not only is engagement of clinical staff critical, clinician leadership is also essential for practice transformation (see Table 2, last row). It is so important that CCA sometimes asks the practice to identify a clinical “champion” and then reimburses the practice for that person's time to develop the program. CCNC staff note that at the practice level, “innovation is facilitated by the physician leaders. We work with early innovators who are helping us drive change at the system level, and, generally, they are physicians who have intrinsically altruistic values and want to do a better job for their patients.” Minnesota program officials agreed: “It's about having strong [effective] leadership. For example, one doctor in a small town has been working on clinic transformation for 4 to 5 years. Even

---

<sup>8</sup> Insufficient practice staff engagement and less intensive patient management appeared to explain why a similar approach designed to improve outcomes for older adults did not have measurable benefits. Developed by Dr. Edward H. Wagner and his colleagues at Group Health Cooperative of Puget Sound, the model aimed to address the lack of primary care clinician training in geriatrics by embedding a “Senior Resource Team” into PCPs. The team included a geriatrician, a gerontological nurse practitioner, and a pharmacist with specialized geriatric training. According to Dr. Wagner, “Even though the geriatric team was just down the hall, the kind of formal consultation that we had in mind didn't happen very often.” He believed that the more intensive approach used by geriatric evaluation and management (GEM) units, which take over care for a period of time, may be more effective. See: The John A. Hartford Foundation, “Geriatric Interdisciplinary Teams in Practice,” Annual Report, 2007. Accessed May 25, 2011 at [http://www.jhartfound.org/pdf%20files/JAHF\\_2007\\_Annual\\_Report.pdf](http://www.jhartfound.org/pdf%20files/JAHF_2007_Annual_Report.pdf)

though he says it takes a long time, there are benefits. He has been able to recruit new physicians to join the practice [even though it is in a small, rural/remote setting] and people will drive a long way to get their services.” This experience suggests it might be more productive, at least initially, to target programs for complex populations to primary care practices that are already PCMHs, trying to meet PCMH standards, or otherwise have physician leaders actively engaged in PCP transformation.

### **Direct Payment to PCPs**

Several program representatives said that one of their biggest challenges in getting practices involved was convincing physician leaders that the investment of time and resources is worthwhile. Advocates have acknowledged payment reform as an element of the PCMH, and medical home demonstrations typically include financial incentives offered by health plans, employers, and/or Federal and State-sponsored programs. Consequently, programs for complex-needs patients may need payment changes to engage practices and secure commitment from physician leadership to participate. Three of the programs make payments directly to the practice. A fourth program found that its payment method, which asked practices to bill for program services on a FFS basis, were administratively burdensome because it required too much work to adapt standard clinic billing systems. The fifth program found that providing access to external case managers to assist with these complex-needs patients was enough to achieve physician engagement, but only after offering a one-time fee that opened the door. Thus, the way payment to PCPs is structured must take into account the way practices currently bill, and whether changes are acceptable and feasible.

Some primary care advocates have proposed that risk-adjusted capitated payments for primary care, when combined with certification requirements and performance measures, would provide the necessary incentives for PCPs themselves to hire staff and acquire resources needed to manage the care of complex-needs patients (Goroll, Berenson, Schoenbaum, et al., 2007). But the program leaders interviewed for this paper expressed skepticism that even larger practices could efficiently develop the necessary infrastructure and expertise to provide adequate care coordination for these types of patients. As previously noted, many PCPs find it difficult to achieve even basic PCMH standards focused on routine medical care. In light of this experience, it seems unlikely they could succeed unaided in conducting comprehensive patient and home assessment, engaging family caregivers, mastering community-based services and program eligibility rules, and finding local HCBS vendors. It is possible, however, that if payments were adequately risk-adjusted, small PCPs might pool resources to contract with local programs to help manage their complex-needs patients. Thus, the end result might be the same types of collaborative programs examined in this paper.

### **Practice Size and Share of Complex-Needs Patients in Total Practice Panel**

Larger practices are more likely than smaller practices to hire dedicated nurses or social workers as case managers. According to a 2008 nationally representative survey of physicians, about one-third of all physicians used nurse managers to coordinate care for patients with chronic conditions, but this varied from 18 percent for physicians in one- or two-physician practices to 59 percent in group practices of 50 or more physicians (Carrier and Reschovsky, 2009). Small practices with one or two physicians might have to share case-management staff across several practices.



There are different views on whether a certain threshold of complex patients in the practice is needed to make it feasible for PCPs to participate in these types of programs. From the practice support perspective, a minimum number of complex patients in the practice may be necessary to justify the investment of time in a given practice. The CCA, for example, says a critical mass of around 100 to 150 complex patients must be in the practice panel to make it worthwhile for CCA to invest its “wrap-around” services, such as intensive primary care enhancement clinical services and case management support. Dr. Robert Master explains that “these patients, although small in the share of total patients, consume a disproportionate amount of a practice’s time, so they’re more visible to practice leadership, which is why we find increasing receptivity for our approach to redesign.” Minnesota has structured its program so that physician practices can adjust the level or intensity of care coordination to patient need, regardless of how many complex-needs patients are in the practice. CHP, in Wisconsin, perceives that practices with larger numbers of clients are more engaged with the nurse case managers and the care coordination of their patients.

### **Rural Practices**

In the North Carolina program, case managers are responsible for serving patients across several practices, but they say that their job is more challenging in rural communities, because of shortages of other health and social service providers, and also when they have to cover a greater geographical area. Minnesota program representatives described an innovative solution serving patients living in rural areas. Two small-town clinics that focus on frail elders and individuals with disabilities in group homes function almost as “virtual health care homes;” the clinicians (physicians and nurse practitioners) visit the facilities where patients live (group homes and assisted living facilities) to provide primary care at least once a month, and they also provide care coordination between visits.

### **Community Partners in Primary Care**

As the programs featured in this paper show, organizations that can effectively help PCPs by organizing a “health care neighborhood” for complex-needs populations must be highly committed and flexible, able to provide effective case management for patients with complex health conditions and social situations, and able to cross the boundaries between health and community-based long-term care systems (Meyers, Peikes, Genevro, et al., 2010). The organizational sponsors included health plans, State health departments and Medicaid agencies, a large regional integrated health system, and regional physician-led networks of care coordinators and quality improvement specialists.

Other types of organizations that might fill this role may be found in the health system, such as hospitals and the types of large health care providers expected to sponsor ACOs. Minnesota officials, for example, attribute the success of some small clinics in attaining HCH certification to their ties to large health systems, which can offer this type of support. But not all large health systems have the physician leaders and management structure to collaborate effectively with small PCPs, nor do they routinely develop the needed linkages with community organizations to marshal case management and other resources. Consequently, large health systems that already engage or own smaller PCPs and have experience providing community-based care to complex-needs patients may be more equipped to provide the support required.

Partners for small PCPs may also be found among community-based organizations with experience and expertise serving complex-needs populations, such as Area Agencies on Aging, independent living centers, and hospice agencies, which are located throughout the country. But as one physician told us, not all such agencies have the ability to bridge the divide between the health and social service systems: “They should have several boundary-spanners to make the partnership work, as well as a culture of innovation.” In addition, not all of these community agencies have case managers who are skilled in coordinating care for patients with complex needs and know how to work as a team with PCPs. That is one of the strengths of an organization like CCA; it partners with the statewide aging service system and also has deep understanding of primary care practice. CCA’s CEO said, “We have done it and lived it, and that allows us to understand our practice partners. Can long-term care or case management organizations transform primary care from the outside? I’m not sure.”



## **Alternative Models for Providing Specialized Care Coordination to Patients with Complex Needs**

Some comprehensive, integrated care models for patients with complex needs rely on a closed panel of health professionals. For example, the Program for All-Inclusive Care for the Elderly (PACE) is a fully integrated care program operating in 29 States. Each PACE program receives capitated Medicare and Medicaid payments to provide and coordinate health and long-term care services and supports to frail older adults. Several studies show that PACE programs maintain or even improve health and functioning at lower costs, while increasing patient and family satisfaction (National PACE Association, 2010; Beauchamp, Cheh, Schmitz, et al., 2008). However, the program may be better suited to people who do not already have a primary care clinician or do not want to continue with one. There are also local requirements, including patient volume, that affect the feasibility of PACE programs for small communities and rural settings. In addition, PACE programs have not to date focused on meeting the needs of working-age adults with disabilities.

Federally Qualified Health Centers (FQHCs) participating in the Centers for Medicare and Medicaid Services' (CMS's) Advanced Primary Care Practice demonstration offer another potential model. Over the 3-year demonstration, CMS will pay a \$6 PMPM care management fee in addition to its regular payments to help the FQHC cover the cost of transforming into a patient-centered medical home, as defined by National Committee for Quality Assurance (NCQA) Level 3 standards. The demonstration will encourage FQHCs to implement electronic health records, help patients manage chronic conditions, and actively coordinate care for patients (CMS FQHC Demonstration Factsheet, 2011). While FQHCs are uniquely positioned to serve as safety net providers for many patients with complex needs, the demonstration pays only for each eligible Medicare beneficiary attributed to the practice and does not directly support care for working-age patients. As with the PACE model, relying on this approach to address the range of needs for most complex-needs patients would require expansion of the programs into communities and neighborhoods not currently served, and would require patients to switch to a different source of primary care.

Programs that specialize in comprehensive care of adults with specific types of disabilities represent a different model. For example, some programs have been developed to manage and coordinate the health, mental health, and social services needed by people with severe and persistent mental illness. Similarly, medical home models have been proposed for patients with specific conditions, ranging from heart failure to cancer (Heart Failure Society of America, 2010; Community Oncology Alliance, 2011). However, each of these specialized medical homes for patients with complex needs would need to develop all the previously described capabilities and competencies for accessible, coordinated, comprehensive care of the broad array of their patients' medical and social service needs. And they would need to have robust capabilities for managing multiple conditions or adjudicate transfers from one specialized medical home to another as new conditions arose or previous difficulties flared. Even if all of these problems could be resolved, assuring 24/7 access to competent, specialized medical homes for complex-needs patients in communities throughout the U.S. is not likely to be feasible.

## CHAPTER 6. CONCLUSION AND THE PATH FORWARD

To achieve the promise of improved quality and reduced costs through primary care delivery by the PCMH, primary care clinicians and policymakers must take concerted steps to ensure that the model can address the needs of patients with complex health needs. Indeed, it is these patients—people with multiple conditions and functional impairments using greater amounts and variety of health services in many settings and requiring long-term services and supports from community organizations—for whom the PCMH may have the greatest benefits.

But to serve these challenging populations well, most small PCPs will need help in overcoming several substantial barriers. It is unrealistic to expect small PCPs already stretched for time and resources to address these barriers on their own. Compensation for the extra effort involved in caring for patients with complex needs is clearly important. However, even if these practices were given sizable additional payments for care of complex-needs patients, external expertise and ongoing community partnerships would likely be required to provide high-quality primary care.

The programs highlighted in this paper demonstrate that there are several organizational approaches to helping smaller PCPs surmount the barriers; these include providing staff, special expertise, and other resources to support primary care clinicians serving these populations. While their experiences offer insights regarding promising solutions and options, important differences exist in their program structure and operations. Thus, several areas remain for research on the most effective organizational and policy approaches for creating the needed partnerships between small PCPs and other community resources to serve complex-needs patients.

### **Policies and Strategies to Surmount Barriers to Serving Complex-Needs Patients in Small PCPs**

#### **PCP Payment Reforms**

PCPs need compensation to offset their additional costs related to the care of complex-needs patients. Among the programs reviewed, CCA appears to pay the greatest amount, by paying a capitated rate for primary care services and sharing with PCPs a portion of savings for lower-than-expected utilization of costly health services. While several other programs have offered practices PMPM care coordination fees, they may not cover all the extra costs to the practice for care of complex-needs patients. Furthermore, private health insurers may be reluctant to pay primary care clinicians a separate fee to coordinate HCBS not covered by the individuals' health plan benefit. Federal rules governing Medicare Advantage managed care plans also limit payment for coordination of noncovered social support services. Most leaders of the programs examined in this paper believe their organizational approaches to supporting primary care of complex patients can succeed only with a fundamental change in payment model. One said, "We can't bring value without global

"We can't serve people who don't qualify for Medicaid (right now), but we can illustrate what effective care looks like when funding for all health and social services is combined into one payment that programs can use flexibly to meet each patient's needs." —Bob Master, Commonwealth Care Alliance

payment.” Another program representative similarly said, “The care coordination function needs to be included in the patient’s total care bill.” Whether provided through capitation or modified FFS, PCMH payment strategies must address the substantial additional costs related to currently uncompensated activities involved in coordinating the care of patients with complex needs to ensure this model will successfully serve them.

### **Augmenting Clinical Competence**

The programs featured in this paper illustrate some different ways to support clinicians in PCPs who provide high quality clinical care to complex-needs patients. CCA and Summa Health System employ teams that offer geriatric consultation to PCPs. Several programs include mental health and other disability-specific clinicians to work in consultation with primary care clinicians. Most also employ advanced practice nurses with specialized expertise to conduct in-home assessments and relay the results to primary care clinicians to facilitate clinical decisionmaking.

Other types of resources could also augment primary care clinicians’ competence in managing the care of complex-needs patients. In some cases, the primary care clinician for the complex-needs patient could efficiently provide care that meets high clinical standards if he or she had the time to obtain the additional information relevant to the patient’s problem. In many other cases, with the right supporting resources (computer-based decision-support tools or ready access to telephone or video consultation, for example), the primary care clinician could address the problem without specialized referral. Unfortunately, in the current specialist-dominated, FFS-oriented health care system, there is not sufficient motivation for specialists to provide timely telephone advice to the primary care clinicians, much less to develop and implement more sophisticated consultative support technologies (or the incentives for primary care clinicians to use them). Some clinical or social support problems for complex-needs patients require so much advanced knowledge and skill that it will be more efficient to have that problem addressed by a specialized team member in the “medical neighborhood.” Several programs described in this paper have developed mechanisms to support PCPs in this way, through ready access to either nurse practitioners or physicians with relevant specialized expertise.

### **Systematic Quality Improvement**

Many small PCPs do not see a sufficient number of complex-needs patients to be able to discern internal opportunities for care improvement or to reliably compare the outcomes of their patients with those in other practices. However, the programs described here show that there are other ways to engage local primary care clinicians in systematic, population-based quality improvement efforts. North Carolina Community Care Networks involve physicians in regional quality improvement initiatives, based in part on their historical affiliations with Area Health Education Centers. Minnesota and Summa Health System sponsor peer-to-peer learning sessions that bring together primary care clinicians, care coordinators, community agencies, and other players to work toward a common goal of improving the care process. However, much untapped potential remains; most of the programs cannot interface directly with local PCPs’ EHRs. Furthermore, since they do not support cross-provider EHRs, they cannot provide integrated clinical information, computerized reminders, or other computer-based clinical decision support to facilitate quality improvement for the care of complex-needs patients.

### **Extra Resources to Manage the “Tyranny of the Urgent”**

The programs described here also provide some tangible resources to help primary care clinicians manage the urgent concerns of complex-needs patients. Several programs augment after-hours coverage, providing 24/7 call service staffed by program nurses, sometimes with access to program patient records to facilitate effective triage over the telephone. For nonemergency problems, some program staff may provide in-home assessments as well. This support is not always tightly integrated with the existing practices’ urgent care or after-hours services, however. And support for clinical assessment in the patient’s home for urgent medical problems is not routine. In addition, these systems do not address the high level of competing demands generated by complex patients during the office visit for an acute care problem.

### **Care Coordination**

Managing the care of patients with complex needs requires substantially more time and care coordination resources than more typical patients with chronic conditions. This is a tall order for most small practices, even those that meet the basic requirements for a medical home. Even with a fully integrated clinical information system organizing complex patient information across the “medical neighborhood,” the current financing environment would have to change dramatically for small PCPs to afford to “go outside their walls” to do home visiting and comprehensive assessment with individualized care planning, or to effectively coordinate with community-based long-term care providers. Accordingly, most of the programs described in this paper provide resources that are shared across several small practices. These shared resources include specially trained advance practice nurses and social workers available to help the small PCPs assess and plan care of their complex patients. These resources are different from the time-limited technical assistance that facilitates medical home transformation in many PCMH demonstrations (Highsmith and Berenson, 2011). The programs for complex patients share expert clinical staff (sometimes placed part-time or full-time within the practice) who conduct assessments, manage information exchange between PCPs and community agencies, and build partnerships with caregivers and social service organizations.

### **Research to Inform More Effective Ways of Financing and Organizing Support for PCPs Serving Patients with Complex Needs**

Several initiatives of the Affordable Care Act (ACA) promise greater funding and resources that might help small PCPs improve their capacity to deliver the full spectrum of primary care services to their patients (Figure 3). Several of these policies directly target complex-needs populations, and each of these initiatives raises some specific research questions relevant to the effectiveness of the policy in improving primary care for complex-needs patients. Furthermore, individually and collectively, these programs elicit some broader research questions as well.

### **Amount of Payment to PCPs**

Many questions remain regarding the best approach to reforming payment in ways that will strengthen and enhance primary care for complex-needs patients. In recent years, several State Medicaid programs, commercial health plans (CareFirst Blue Cross and Blue Shield of Maryland, for example) and other private payers, as well as the Medicare program, have launched initiatives to promote and reward practices (through extra payment to primary care clinicians) that adopt PCMH standards. Clearly, effective care of

complex-needs populations requires primary care practices to devote more professional time and other resources to them than to their less complicated patients. While the care coordination payments offered in programs discussed are relatively modest (\$5 per month in one program), previous estimates by the Centers for Medicare & Medicaid Services (CMS) suggest much higher reimbursement may be needed to support medical home services for even moderately complex Medicare beneficiaries. One analysis estimated more than \$100 per beneficiary per month for medical home services for Medicare patients with greater disease burden and higher predicted future costs to Medicare (those with a hierarchical condition categories [HCC] score greater than or equal to 1.6 [25 percent of beneficiaries])<sup>9</sup> (Maxfield, Peikes, Shapiro et al., 2008). It was beyond the scope of this paper to determine how each example program targets complex patients for varying levels of care coordination and enhanced services. Also, it remains unclear how much payment is required to compensate PCMHs for the extra time and resources required to provide high-quality, appropriate care to patients with complex and varying needs, so these are critical research questions. In addition, it is important to determine how to structure payments to optimize PCP participation in comprehensive assessment, individualized care plans, consultation with patients and family members, facilitating access to health and social services, and coordinating care across settings and multiple providers.

In its guidance to State Medicaid agencies in the design of the new health home State Medicaid plan option, CMS emphasized States could use a “tiered payment methodology that accounts for the severity of each individual’s chronic conditions and the ‘capabilities’ of the designated provider, the team of health care professionals operating with the designated provider, or the health team” (CMS, November 2010). Because States may structure these payment methods differently, an important part of the national evaluation of this program planned by CMS will be to measure the impact of differences in how such tiered payments are structured; how rates are adjusted for various health conditions, disabilities, and levels of severity; and whether payment incentives are made for desired outcomes. How best to blend practice payment with payment for external resource support is another important question. Clearly, under the right circumstances, local programs can provide care coordination staff, home assessments and monitoring, and other resources that offset some of the extra costs to primary care practices.

### **Impact of Multi-Payer Strategies**

Other research questions concern how to align payment policy across the many payers responsible for financing care for complex-needs patients. Many such patients are eligible for Medicare and Medicaid, and a substantial number have private insurance coverage as well. Consequently, if more payers begin to compensate PCPs for care coordination, PCPs may have more resources to provide effective primary care to complex patients. But if each payer develops its own payment rates and methods, PCPs may have

---

<sup>9</sup> The estimate was developed during the design of the Medicare Medical Home Demonstration incorporating cost estimates from the Relative Value Update Committee (RUC). CMS subsequently decided not to pursue implementation of that Demonstration, and instead test the PCMH model in the Multi-payer Advanced Primary Care Practice Demonstration and the Federally Qualified Health Centers Advanced Primary Care Practice Demonstration. CMS also plans to test the PCMH model under the CMS Innovation Center. See more information on the Medicare Medical Home Demonstration, at [http://www.acponline.org/running\\_practice/pcmh/demonstrations/design.pdf](http://www.acponline.org/running_practice/pcmh/demonstrations/design.pdf).

conflicting incentives or may not be able to serve patients with insurance plans that do not cover care coordination. For some PCPs, the administrative burden of sorting out these confusing plans may make them reluctant to participate in any of them. The ACA allows Medicare to participate in some state primary care home initiatives that are trying to align payment incentives for medical homes across all payers, including Medicare, Medicaid, and commercial insurance plans. Eight States were selected to participate in CMS's Multi-Payer Advanced Primary Care Program, including North Carolina and Minnesota. Officials in those States believe the demonstration will help increase the total revenue PCPs receive for coordinating care for Medicare beneficiaries. But many questions remain regarding the feasibility and sustainability of these initiatives and the potential impact on access to appropriately transformed medical homes for complex-needs patients.

"The more we can get multiple payers to the table, the better. It'll be easier for practices to bill and sustain their care coordination efforts if all payers are paying for them. Practices find it hard to dedicate case management resources when Medicare only allows billing for certain types of codes, Medicaid has different codes, and private insurers don't even cover case management services."—Chris Collins, Community Care of North Carolina

### **Organizational Models and Features**

As discussed, a variety of organizational arrangements and sponsors exist for providing the infrastructure to support care coordination for patients with complex needs. These include health plans (both nonprofit and for-profit), State health departments and Medicaid agencies, regional integrated health systems, and regional physician-led networks of care coordinators. Other possibilities include Accountable Care Organizations and other community-based organizations, like Area Agencies on Aging or hospice agencies.

In view of the current diversity of organizational approaches, many questions arise regarding which arrangements will prove most effective and efficient in helping PCPs serve patients with complex needs. This research may need to take into consideration such characteristics as PCP size and focus, number of complex-needs patients in the practice panel, rural versus urban practice location, and current configuration of community resources. Research could compare care coordination characteristics, including the setting (health plan versus community organization, for example), approaches to comprehensive assessment and care planning (establishing when home visits are essential), intensity of care coordination, degree of care coordinator integration into the PCP, and different ways of engaging PCPs in team-based care. Several more subjective program features appear to be important as well, such as practice engagement, primary care clinician leadership and motivation, and program flexibility and collaboration. To be of practical use to payers interested in developing these models, and to providers seeking to replicate them, studies also should examine program structure and operations in detail, and determine what components are essential to their success and which can be adapted in response to different circumstances (Au, Simon, Chen et al., 2011). There is also an opportunity to develop appropriate and feasible performance metrics for decisionmakers. Finally, research is needed on approaches that are critical to the successful implementation of these strategies across a diversity of primary care practice types and locations.



## **Professional Competencies Required by Populations, Practices, and Programs**

Primary care clinicians vary considerably in their original clinical training relevant to the care of complex-needs populations, as well as the competencies they have acquired through the ongoing care of patients prevalent in their practices. Furthermore, different programs currently employ different types of clinical experts and could deploy into PCPs various combinations of onsite and remote human and computer-based resources. Academic health centers could have their own special role to play, providing regional resources to support primary care-based management of specific complex conditions (Arora, Thornton, Murata et al., 2011). Thus, for any given mix of complex-needs patients in a community, a variety of approaches may be available to provide clinicians the knowledge and skills required to optimize primary care. While it is clear that a team of professionals with a broad range of skills is needed to efficiently and effectively provide primary care for patients with complex needs, a host of research questions remain regarding the optimal training of the relevant professionals, both in their individual disciplines and in effective collaboration in medical home teams. Other research questions relate to the proper deployment and support of these distinct professions, both in the practice and in the community, to achieve integrated care.

## **Summary**

Patients with complex health care needs may represent the greatest challenge to transforming existing primary care practices into high-functioning medical homes, and they also represent one of the greatest opportunities for this transformation to make a dramatic impact on cost and quality. There are a variety of promising strategies to help PCPs serve these populations through a supportive medical neighborhood knitting together social services and supports with specialized expertise in relevant areas, such as mental health, disability, and geriatrics. These approaches provide skilled care coordinators as a shared resource and often also compensate the primary care clinicians for their time spent “in-between the progress notes.” Integrated clinical information systems, clinical decision support, and additional resources to support enhanced access (including home visits) are often part of these as well. Health care payment and delivery reforms hold the potential to expand these strategies to PCPs in communities across the United States, but concerted effort and attention is needed to ensure they do not leave the most vulnerable and challenging patients behind. Additional research would help to clarify the optimal strategies and policies to ensure that high quality primary care services are more widely available to these patients.

### Figure 3. How the Affordable Care Act can support adoption of patient-centered medical homes

Federal health reform legislation enacted in 2010 authorized several new programs that, if adequately funded and implemented effectively, could provide opportunities to support greater adoption of the principles of patient-centered medical homes (PCMH) by primary care practices (PCPs) and facilitate collaboration between them and community organizations in coordinating health with long-term services and supports for complex populations. Programs marked with an asterisk (\*) have been authorized but not funded as of October 2011.

- **Community-based health teams (Section 3502).**\* These teams will support medical homes based at small physician practices by providing preventive care and health promotion activities, 24-hour care management and support following hospital discharge, and data collection and reporting on patient outcomes. In return, the contracted primary care providers must develop a care plan for each patient, make patient health records available to the teams, and meet regularly with other providers to coordinate and integrate care.
- **PCMHs for high-need individuals (Section 3024).** Starting in 2012, Centers for Medicare & Medicaid Services (CMS) will begin the Independence at Home Demonstration to test an alternative PCMH model in which physician- and nurse practitioner-directed primary care teams provide services in patients' homes. The demonstration will serve Medicare beneficiaries with multiple chronic illnesses who live in high-cost service areas.
- **Community-based Collaborative Care Networks (Section 2534).**\* Modeled on North Carolina's Community Care Networks, this section would award grants to State and local governments, health centers, and other entities to provide primary care services and outreach in medically underserved communities.
- **Primary Care Extension Centers (Section 5405).**\* To be managed by the Agency for Healthcare Research and Quality, these centers are modeled on agricultural extension centers and regional extension centers for health information technology (IT). Health extension agents would be hired to help primary care providers incorporate the principles of the PCMH, link them and their patients to community health and social services, adopt evidence-based medicine, and incorporate into their practices non-acute care services, such as chronic disease management and mental and behavioral health services.
- **Increased Medicare and Medicaid payment rates.** Starting in 2011, the Affordable Care Act (ACA) authorized Medicare to pay a bonus of 10 percent to primary care clinicians for certain types of services, such as home visits. Starting in 2013, all States are required to increase Medicaid rates paid to primary care clinicians to match Medicare rates; some States already do so.



- **Medicaid Health Homes (Section 2703).** Starting in 2011, all States will have an opportunity to obtain 90 percent Federal funding to develop Medicaid “health homes” for patients with chronic conditions. The law defines these as teams of primary care clinicians, nurse practitioners, or physician assistants who work with other health care professionals to provide comprehensive care management, care coordination and health promotion, transitional care between hospital and primary care, referral to community and social services, patient and family engagement, and use of IT to link services. CMS recognized that many States had already adopted medical home programs, so the health home option was designed to “expand the traditional medical home models to build linkages to other community and social supports, and to enhance coordination of medical and behavioral health care, in keeping with the needs of persons with multiple chronic illnesses” (emphasis added, CMS State Medicaid Director Letter, 2010).
- **Medical Loss Ratio requirements (Sections 158.150-151).** The ACA requires issuers to meet a Medical Loss Ratio of 80-85 percent, depending on the market. These dollars can be spent on “reimbursement for clinical services provided to enrollees” or “for activities that improve health care quality.”

Source: Abrams MK, Nuzum R, Mika S, et al. Realizing Health Reform’s potential: how the Affordable Care Act will strengthen primary care and benefit patients, providers, and payers, New York: Commonwealth Fund, 2011. Pub No. 1466; and Davis K, Abrams MK, Stremikis K. How the Affordable Care Act will strengthen the Nation’s primary care foundation, J Gen Intern Med 2011; e-pub.

## References

- AARP Public Policy Institute. Beyond 50.09: chronic care—a call to action for health reform. Washington (DC): AARP; 2009.
- Accreditation Association for Ambulatory Health Care (AAAHC). Medical home accreditation. <http://www.aaahc.org/eweb/dynamicpage.aspx?webcode=mha>. Accessed October 25, 2011.
- Adams J, Grundy P, Kohn MS, et al. Patient-centered medical home: what, why, and how. Somers (NY): IBM Institute for Business Value; May 2009.
- American College of Physicians (ACP). The advanced medical home—a policy monograph. Philadelphia (PA): ACP; 2006.
- Agency for Healthcare Research and Quality (AHRQ). What is the PCMH? AHRQ's definition of the medical home. 2011. [http://www.pcmh.ahrq.gov/portal/server.pt/community/pcmh\\_\\_home/1483/what\\_is\\_pcmh\\_](http://www.pcmh.ahrq.gov/portal/server.pt/community/pcmh__home/1483/what_is_pcmh_). Accessed October 25, 2011.
- American Academy of Family Physicians (AAFP), American Academy of Pediatrics (AAP), American College of Physicians (ACP), American Osteopathic Association (AOA). Joint principles of the patient-centered medical home. 2007. <http://www.pcpcc.net/content/joint-principles-patient-centered-medical-home>. Accessed October 25, 2011.
- American Academy of Family Physicians (AAFP), Council of Delegates. Family medicine, definition of. 2010. <http://www.aafp.org/online/en/home/policy/policies/f/fammeddef.html>. Accessed October 25, 2011.
- American Academy of Hospice and Palliative Medicine (AAHPM). Hospice and palliative medicine core competencies, version 2.3. 2009. [http://www.aahpm.org/pdf/competenciesv2\\_3.pdf](http://www.aahpm.org/pdf/competenciesv2_3.pdf). Accessed October 25, 2011.
- American College of Physicians (ACP). The advanced medical home—a policy monograph. Philadelphia (PA): ACP; 2006.
- Arora S, Thornton K, Murata G, et al. Outcomes of treatment for hepatitis C virus infection by primary care providers. *N Engl J Med* 2011;364:2199-207.
- Au M, Simon S, Chen A, et al. Comparative effectiveness of care coordination for adults with disabilities [research issue brief]. Washington (DC): Mathematica Policy Research; 2011.
- Beauchamp J, Cheh V, Schmitz R, et al. The effect of the Program of All-Inclusive Care for the Elderly (PACE) on quality: final report. (Prepared by Mathematica Policy Research under Contract No. 500-00-0033 [01]). Baltimore (MD): CMS; 2008.
- Berenson R, Hammons T, Gans D, et al. A house is not a home: keeping patients at the center of practice redesign. *Health Aff* 2008;27(5):1219-30.
- Berenson R, Rich E. How to buy a medical home? policy options and practical questions. *J Gen Intern Med* 2010;25(6):619-24.
- Berry E. Large health plans work together on medical home pilots. *American Medical News* (amednews.com) 2009. <http://www.ama-assn.org/amednews/2009/07/13/bisc0713.htm>. Accessed October 25, 2011.
- Blue Cross Blue Shield (BCBS). Patient-centered medical home. 2011. <http://www.bcbs.com/blueresources/wellness/patient-centered-medical-home/>. Accessed October 25, 2011.
- Boult C, Wieland, G. Comprehensive primary care for older patients with multiple chronic conditions: “nobody rushes you through.” *JAMA* 2010; 304(17):1936-43.
- Boult C, Counsell SR, Leipzig RM, et al. The urgency of preparing primary care clinicians to care for older people with chronic illnesses. *Health Aff (Millwood)* 2010 May;29(5):811-8.

Brangman S, Chin Hansen J. Medicare program; payment policies under the physician fee schedule and other revisions to Part B for CY 2011; proposed rule (CMS-1503-P) [letter to Dr. Donald Berwick, administrator of the Centers for Medicare & Medicaid Services, August 24, 2010]. [http://www.americangeriatrics.org/files/documents/Adv\\_Resources/CY2011PFS\\_Comments\\_Proposed\\_Rule.pdf](http://www.americangeriatrics.org/files/documents/Adv_Resources/CY2011PFS_Comments_Proposed_Rule.pdf). Accessed October 25, 2011.

Carrier E, Reschovsky J. Expectations outpace reality: physicians' use of care management tools for patients with chronic conditions. Washington (DC): Center for Studying Health System Change; 2009. Issue Brief No. 129.

Centers for Medicare & Medicaid Services. Medical home demonstration fact sheet. Baltimore (MD): CMS; 2009.

Centers for Medicare & Medicaid Services. Federally Qualified Health Center Advanced Primary Care Practice (FQHC ACP) Demonstration fact sheet. Washington (DC): CMS; 2011.

Centers for Medicare & Medicaid Services. Health homes for enrollees with chronic conditions [State Medicaid director letter #10-024, Center for Medicaid, CHIP and Survey & Certification, November 16, 2010]. <http://www.cms.gov/smdl/downloads/SMD10024.pdf>. Accessed October 25, 2011.

Center for Studying Health System Change, HSCdataOnline ([www.hschange.org](http://www.hschange.org)), CTS Physician Survey (2008), August 2, 2011.

Chen A, Yee H. Improving primary care-specialty care communication: lessons from San Francisco's safety net. *Arch Intern Med* 2011;171(1):65-7.

Choudhry N, Fletcher R, Soumerai S. Systematic Review: The relationship between clinical experience and quality of health care. *Annals Intern Med* 2005;142(4):260-73.

Community Oncology Alliance. CMS-1345-P, Medicare Program; Medicare Shared Savings Program: accountable care organizations [letter to CMS administrator Dr. Donald Berwick, June 2, 2011]. [http://www.communityoncology.org/UserFiles/files/87f3205e-ee73-4b03-85fb-094870cc430d/COA\\_ACO\\_Comment\\_Letter.pdf](http://www.communityoncology.org/UserFiles/files/87f3205e-ee73-4b03-85fb-094870cc430d/COA_ACO_Comment_Letter.pdf). Accessed October 25, 2011.

Cooley CW, Committee on Children with Disabilities. Providing a primary care medical home for children and youth with cerebral palsy. *Pediatr* 2004;114:1106-13.

Croghan TW, Brown JD. Integrating mental health treatment into the patient-centered medical home. (Prepared by Mathematica Policy Research under Contract No. HHSA290200900019ITO2). Rockville (MD): Agency for Healthcare Research and Quality; 2010. AHRQ Publication No. 10-0084-EF.

Deloitte Center for Health Solutions. The medical home: disruptive innovation for a new primary care model. Washington (DC): Deloitte Development LLC; 2008.

Fisher K. Health disparities and mental retardation. *J Nurs Scholarsh* 2004;36(1):48-53.

Field M, Cassel C, eds. Approaching death: improving care at the end of life. Washington (DC): The National Academies Press; 1997.

Frayne SM, Halanych JH, Miller DR, et al. Disparities in diabetes care: impact of mental illness. *Arch Intern Med* 2005 Dec;165(22):2631-8.

Goroll A, Berenson R, Schoenbaum S, et al. Fundamental reform of payment for adult primary care: comprehensive payment for comprehensive care. *J Gen Intern Med* 2007;22(3):410-5.

Gross, J. When experts need experts. *New York Times* November 10, 2005. <http://www.nytimes.com/2005/11/10/garden/10old.html?scp=1&sq=Rosalie%20Kane%202005&st=cse>. Accessed October 25, 2011

Heart Failure Society of America. Coordinating the medical home for heart failure patients transitioning to palliative care: adjusting locus of care and focusing on integrated medicine sheds light on best practices and patient-centered care in heart failure clinics [press release]. September 15, 2010. [http://www.hfsa.org/pdf/HFSA\\_Coordinating\\_Home\\_Heart\\_Failure.pdf](http://www.hfsa.org/pdf/HFSA_Coordinating_Home_Heart_Failure.pdf). Accessed October 25, 2011.

Highsmith N, Berenson R. Driving value in Medicaid primary care: the role of shared support networks for physician practices. New York: Commonwealth Fund; 2011. Pub. No. 1484.

Hing E. Unpublished results from the 2006 National Ambulatory Medical Care Survey; National Center for Health Statistics.

Institute of Medicine. A manpower policy for primary health care. Washington (DC): National Academy of Sciences; 1978.

Institute of Medicine. Primary care: America's health in a new era. Washington (DC): National Academy of Sciences; 1996.

Jones AL, Dwyer LL, Bercovitz AR, et al. The National Nursing Home Survey: 2004 overview. *Vital Health Stat* 2009;13(167). Publication No. 2009-1738.

Lawrence D. My mother and the medical care ad-hoc-racy. *Health Aff* 2003;22(2):238-42.

Landon BE, Gill JM, Antonelli RC, et al. Using evidence to inform policy: developing a policy-relevant research agenda for the patient-centered medical home. *J Gen Intern Med* 2010;25(6):581-3.

Lin HC, Xirasagar S, Lin H et al. Does physicians' case volume impact inpatient care costs for pneumonia cases? *J Gen Intern Med* 2008;23(3):304-9.

Leutz, WN. Five laws for integrating medical and social services: lessons from the United States and the United Kingdom. *The Milbank Quarterly* 1999;77(1):77-110.

Martin JC, Avant RF, Bowman MA, et al. The future of family medicine: a collaborative project of the family medicine community. *Ann Fam Med* 2004;2(Suppl 1):S3-32.

Maxfield M, Peikes D, Shapiro R, et al. Design of the CMS Medical Home Demonstration: draft report. (Prepared by Mathematica Policy Research under Contract No. HHSM-500-2005-00025I). Baltimore (MD): CMS; 2008.

Mehrotra A, Keehl-Markowitz L, Ayanian JZ. Implementing open access scheduling of visits in primary care practices. *Ann Intern Med* 2008;148(12):915-22.

Meyer H. A new paradigm slashes hospital use and nursing home stays for the elderly and the physically and mentally disabled. *Health Aff* 2011;30(3):412-5.

Meyers D, Peikes D, Genevro J, et al. The roles of patient-centered medical homes and accountable care organizations in coordinating patient care. Rockville (MD): Agency for Healthcare Research and Quality; 2010. AHRQ Publication No. 11-M005-EF.

Minnesota Department of Health. Care Coordination Tier Assignment Tool, version 1.0: Health Care Home Initiative. 2010. [http://www.health.state.mn.us/healthreform/homes/payment/HCHComplexityTierTool\\_March2010.pdf](http://www.health.state.mn.us/healthreform/homes/payment/HCHComplexityTierTool_March2010.pdf). Accessed October 25, 2011.

National Committee for Quality Assurance (NCQA). Patient-centered medical home (PCMH). 2011. <http://www.ncqa.org/tabid/631/default.aspx>. Accessed October 25, 2011.

National PACE Association. Bibliography of PACE articles. 2010. <http://www.npaonline.org/website/article.asp?id=32>. Accessed October 25, 2011.

Nolte E, McKee M, eds. Caring for people with chronic conditions: a health system perspective. New York: McGraw-Hill Open University Press; 2008. Chapter 4, Integration and chronic care: a review.

Nutting PA, Crabtree BE, Miller WL, et al. Transforming physician practices to patient-centered medical homes: lessons from the National Demonstration Project. *Health Aff* 2011;30(3):439-45.

O'Malley A. Panel 1: care coordination among specialists, primary care, care management, and patients. Testimony to the U.S. Department of Health and Human Services, Office of the National Coordinator for Health Information Technology Meaningful Use Workgroup; 2011 May 13; Washington (DC).

O'Malley A, Reschovsky J. Referral and consultation communication between primary care and specialist physicians: finding common ground. *Arch Intern Med* 2011;171(1):56-65.

Østbye T, Yarnall K, Krause K, et al. Is there time for management of patients with chronic diseases in primary care? *Ann Fam Med* 2005;3:209-14.

Patient-Centered Primary Care Collaborative. Patient-centered medical home. 2009. <http://www.pcpcc.net/content/test>. Accessed October 25, 2011.

Patient-Centered Primary Care Collaborative. Sign-on letter to Senate regarding the role of the PCMH in health care reform. 2009. <http://www.pcpcc.net/content/sign-letter-senate-regarding-role-pcmh-health-care-reform-3>. Accessed October 25, 2011.

Peikes D, Brown R, Peterson G et al. Promising Models of Care Coordination in Medicare: Lessons for Medicaid Beneficiaries with Chronic Illnesses. Presentation to 22nd Annual State Health Policy Conference; 2009 Oct 6; Long Beach (CA). Portland: National Academy for State Health Policy; 2009.

Peikes D, Genevro J, Scholle SH, Torda P. The Patient-Centered Medical Home: Strategies to Put Patients at the Center of Primary Care. Rockville, MD: Agency for Healthcare Research and Quality; February 2011. AHRQ Publication No. 11-0029.

Peikes D, Chen A, Schore J, Brown R. Effects of care coordination on hospitalization, quality of care, and health care expenditures among Medicare beneficiaries: 15 randomized trials. *JAMA* 2009;301(6):603-18.

22nd Annual State Health Policy Conference, Long Beach, California Pham H, O'Malley A, Bach P, et al. Primary care clinicians' links to other physicians through Medicare patients: the scope of care coordination. *Annals Intern Med* 2009;150(4):236-42.

Qualis Health. Patient-Centered Care for the Safety Net System: The Safety-Net Medical Home Initiative.: 2009. <http://www.qhmedicalhome.org/safety-net/index.cfm>. Accessed October 25, 2011.

Taylor EF, Lake T, Nysenbaum J, et al. Coordinating care in the medical neighborhood: critical components and available mechanisms [white paper]. (Prepared by Mathematica Policy Research under Contract No. HHSA290200900019I TO2). Rockville, MD: Agency for Healthcare Research and Quality; 2011. AHRQ Publication No. 11-0064.

URAC. Patient-Centered Health Care Home (PCHCH) Program. 2010. [http://www.urac.org/healthcare/prog\\_accred\\_pchch\\_toolkit.aspx](http://www.urac.org/healthcare/prog_accred_pchch_toolkit.aspx). Accessed October 25, 2011.

U.S. Census Bureau. 2009 American Community Survey: 1-year estimates. Table S1810 disability characteristics. 2009. [http://factfinder.census.gov/servlet/STTable?\\_geo\\_id=05000US25023&-qr\\_name=ACS\\_2009\\_1YR\\_G00\\_S1810&-ds\\_name=ACS\\_2009\\_1YR\\_G00\\_](http://factfinder.census.gov/servlet/STTable?_geo_id=05000US25023&-qr_name=ACS_2009_1YR_G00_S1810&-ds_name=ACS_2009_1YR_G00_). Accessed October 25, 2011.

## Appendix

Table 1. Profile of Organizations Supporting Primary Care Practices in Serving Complex-Needs Populations

Table 2. Characteristics and Case Management Approaches of Participating Primary Care Practices, by Program

Table 3. Financing Sources and Payment for Case Management of Complex Populations, by Program



**Table 1. Profile of organizations supporting primary care practices in serving complex-needs populations**

	Program or Organization				
	Commonwealth Care Alliance (CCA), Massachusetts	Community Care of North Carolina (CCNC)	Community Health Partnership (CHP), Wisconsin	Health Care Homes (HCH), Minnesota	Summa Health System, Ohio
Region(s) Covered	Boston Metro Area and some areas in eastern and western Massachusetts	Statewide (Medicaid). Medicare demonstration for duals will be in 26 counties in 2011. Private payers (through MAPCP demo) will be in 7 other rural counties in 2011.	Five counties surrounding Eau Claire	Statewide	Akron and surrounding four counties
Organization Sponsor Type	Nonprofit health plan established in 2003 CCA is a Medicare Advantage Special Needs Plan (SNP) and has managed care contracts with the State Medicaid for its SCO program.	Medicaid agency: North Carolina Department of Health and Human Services. A nonprofit, physician-led organization: NC Community Care Networks, Inc. (NC-CCN).	Nonprofit health plan: Partnership Health Plan (PHP), Inc., established in 1997 PHP is a fully integrated Medicaid/Medicare managed care plan participating in State's Partnership Program	State health and human services agencies: Minnesota Department of Health and Minnesota Department of Human Services.	Large integrated health care system (hospital, OP clinics, and so on) and health plan (Medicare Advantage)
Number of Primary Care Practices (PCPs) Participating	25 PCPs as of April 2011	More than 4,000 physicians in all 100 NC counties participate; about 1,480 PCPs participate (about half of all PCPs in State).	170 PCPs in five-county region as of April 2011	1,651 primary care clinicians in 134 clinics statewide	Six hospitals, four large primary care groups, one multispecialty physician group. Summa Health System also works with external PCPs in the region.
Target Population	Patients who receive SSI or are dual eligible and have multiple chronic conditions and/or behavioral health problems	All patients, including those with multiple co-morbidities, behavioral health needs, and those who are dually eligible	Adults with physical disabilities, adults with mental disabilities, frail elderly	All patients, including those with chronic conditions, mental health issues, or those who are dual eligible or uninsured.	Patients who are frail, elderly, and/or dual eligible



**Table 1. Profile of organizations supporting primary care practices in serving complex-needs populations**

Program or Organization					
	Commonwealth Care Alliance (CCA), Massachusetts	Community Care of North Carolina (CCNC)	Community Health Partnership (CHP), Wisconsin	Health Care Homes (HCH), Minnesota	Summa Health System, Ohio
Health insurance coverage for patients served by program	Medicaid only, or Medicare and Medicaid (dual eligible) enrolled in the SCO program, a managed care, capitated program for duals. (CCA operates one of four SCO programs in the State.)	Medicaid only, or Medicare and Medicaid In 2011, Medicare-only and privately insured join.	Medicaid only, or Medicare and Medicaid enrolled in the Wisconsin's Partnership Program, a capitated program for duals. (CHP operates one of three programs in the State.)	Any type of health insurance or none (includes Medicaid, dual eligible, privately insured programs, State employees, Medicare-only through MAPCP demo). ERISA-based insurance not covered	Any type of health insurance, but the majority served are Medicaid or Medicare and Medicaid (dual eligible)
Services Coordinated	Primary and specialty medical care; mental health services; home assessments; HCBS; hospice care; long-term care; pharmacy.	Primary and specialty medical care; mental health services; HCBS; hospice care; transition care; clinical pharmacy.	Primary and specialty medical care; mental health services; home visits; HCBS; hospice care.	Primary and specialty medical care; mental health services; HCBS; hospice care.	Primary and specialty medical care; mental health services; home assessments; HCBS; hospice care.
Case management approaches	CMs (NP-geriatric SW teams) assigned to each PCP to provide enhanced primary care and case management. In addition, CCA employs geriatricians, pharmacists, APNs, RNs, social workers, behavioral health specialists, palliative care specialists, and others for consultation with PCPs, and to provide direct care to enrollees.	14 regional networks hire case managers who collaborate with PCPs. CMs housed in large PCPs, and shared across small PCPs; varies by network. Clinical directors, pharmacists, psychiatrists, behavioral health specialists, and QI professionals available from the network to consult and assist CMs.	Patient assigned to a case management team (one RN, one NP, and one social service coordinator per team). A member of the team accompanies the patient to PCP visits and provides direct care and assessment in the home.	Case management required for all certified practices. Four general models: (1) single, designated CM who coordinates all care; (2) single, designated CM who delegates some functions to team; (3) multiple CMs sharing functions in an "HCH team" design; (4) multiple, defined CM roles distributed across a team with one CM coordinating the work.	Multidisciplinary teams (NP, MD/DO, local AAA, and so on) meet in person to discuss needs for referred patients; other "virtual" team members (cardiologist, pulmonologist, psychologist, and so on) are on call. PCPs can refer patients for inpatient, outpatient, and in-home consults. CM meets with patient at PCP clinic visits.

**Table 1. Profile of organizations supporting primary care practices in serving complex-needs populations**

	Program or Organization				
	Commonwealth Care Alliance (CCA), Massachusetts	Community Care of North Carolina (CCNC)	Community Health Partnership (CHP), Wisconsin	Health Care Homes (HCH), Minnesota	Summa Health System, Ohio
Information technology (IT) systems	IT enhancements provided to PCPs to establish and maintain Web-based electronic medical records for SCO enrollees.	NC-CCM helps regional networks identify high-risk patients and develop performance measures.  Regional networks use a common CMIS which gives CM team near-real-time access to patient data (claims, enrollment status, some medical records) from anywhere in the State. CMIS also used to document CM interventions, assessments, care plans, and so on. Provider portal allows PCPs, hospitals, and participating specialists to view comprehensive patient data.	Separate EHR kept at CHS (no Rx information included), and paper assessment provided to PCP. CM also accompanies patient to PC visits and directly communicates health history and care plan.	All PCPs required to have electronic and searchable patient registries; low- or no-cost systems available. Mini-grants available to practices to support HCH implementation, including IT capabilities, care-planning tools, or registries required for HCH certification	Providers maintain separate EHR systems. In inpatient settings, clinicians take notes on the same record. Information shared via alpha page, email, fax, and phone.
Quality improvement methods	CCA collects data from Web-based EHRs (see above), compares each PCP to overall SCO rates on various performance measures, and shares results with PCPs every quarter to identify areas for improvement.	CMIS generates reports at networks and state for QI activities. AHEC audits charts and compares to HEDIS and NCQA goals.  NC-CCM provides clinical and technical assistance to 14 networks, and conducts training for networks and providers on new QI initiatives. Networks also lead QI activities.	CHP conducts an annual member satisfaction survey to gauge whether the consumer's goals and outcomes have been met.	State law requires clinics to publish data to the online statewide quality reporting system. Annually, PCPs are required to demonstrate improvements in cost, quality, and patient experience to re-certify as a health home. State-led PCP learning collaborative facilitates change.	In-person team meetings include local AAAs, and other partners who discuss care coordination processes. PCPs and specialists participate virtually. Multiple trials to test and improve model (ACE, AD-LIFE, PEACE, and so on).

Source: Program details compiled from program Websites; published sources; and Mathematica-led phone calls with representatives from selected organizations, conducted between April 14 and May 10, 2011.

AAA = Area Administration on Aging  
 ACE = Acute Care for Elderly  
 AD-LIFE = After Discharge Care Management of Low Income Frail Elderly  
 AHEC = Area Health Education Center  
 APN = Advanced practice nurse  
 CM= Case manager  
 CMIS = Case Management Information System  
 EHR = Electronic health record  
 ERISA = Employee Retirement Income Security Act  
 HCBS = Home and community-based services  
 HEDIS = Healthcare Effectiveness Data and Information Set  
 MAPCP = Multi-payer Advanced Primary Care Practice (Demonstration)  
 MCO = Managed Care Organization  
 NCQA = National Committee for Quality Assurance  
 NP = Nurse practitioner  
 OP = Outpatient  
 PC = Primary care  
 PCP = Primary care practice  
 PEACE = Promoting Effective Advance Care for the Elderly  
 QI = Quality Improvement  
 RN = Registered nurse  
 Rx = Prescription  
 SCO = Senior Care Options  
 SSI= Supplemental Security Income  
 SW = Social Worker

**Table 2. Characteristics and case management approaches of participating primary care practices, by program**

	Program or Organization				
	Commonwealth Care Alliance (CCA), Massachusetts	Community Care of North Carolina (CCNC)	Community Health Partnership (CHP), Wisconsin	Health Care Homes (HCH), Minnesota	Summa Health System, Ohio
Range in size of practices (number of physicians or clinicians)	About one dozen of the 25 participating PCPs employ 10 or fewer physicians.	Most are small (65% serve < 500 patients) but can be large practices. Also includes CHCs, residency programs, and so on.	Most clinics are part of large systems; two very large (Mayo and Marshfield), one IPA with about 50 PCPs, and one practice with <12 PCPs.	Many small practices in MN (<5) are affiliated with large clinic networks.	1,000 MDs in Summa Health System IDS; 57 family practice physicians in Summa Physicians Inc.; 100-300 non-Summa Health System physicians.
Practice types or specialties	Of the 25 practices, 10 are FQHCs; the other 15 include academic practices, small group practices, and an IPA that contracts with some one- or two-physician practices.	All types, including independent practices, CHCs, residency programs, and health departments	Most are PCPs or multispecialty clinics; also two large IDSs (Mayo and Marshfield).	All types, including FQHCs, large specialty groups, and small independent practices	All inpatient and outpatient specialties (including geriatrics and palliative care units), and a physician/NP visiting house-calls team.
Medical home certification requirements	Internal requirements. CCA offers support to practices on approaches and standards of care, behavioral health integration, etc. as needed. CCA also ensures access by providing a professionally staffed 24/7 call center for SCO-enrolled patients in participating practices (can substitute for or complement PCP after-hours coverage).	PCPs sign agreement certifying that they meet State standards and have contracted with one of the regional networks.  PCPs in MAPCP demonstration must meet NCQA Level 1 certification by 2012.  BCBS also paying more for NCQA certified practices through PCMH Blue Quality Physician Program.	Information not collected	Minnesota health care home certification standards (exceed NCQA in some domains). <sup>a</sup> Standards integrate patient and family-centered care concepts as key component.	Using NCQA standards  Working toward ACO certification

**Table 2. Characteristics and case management approaches of participating primary care practices, by program**

	Program or Organization				
	Commonwealth Care Alliance (CCA), Massachusetts	Community Care of North Carolina (CCNC)	Community Health Partnership (CHP), Wisconsin	Health Care Homes (HCH), Minnesota	Summa Health System, Ohio
Staffing or team requirements	PCPs must establish multidisciplinary teams with staff from PCP and CCA ; CCA provides enhanced primary care, including home visits, comprehensive assessments, and developing individualized care plans with PCP.	CM (nurse, social worker, or other clinical professional) roles determined by the network. Some CMs are imbedded in PCP and function as part of PCP team, others work with patients across multiple PCPs.	Case management team (one RN, one NP, and one social service coordinator) members provide direct care and assessment in the home, and accompany the patient to PC visits.	Care team staffing, design, scheduling, and site of operation is flexible and structured so PCP can best meet CM requirements.	Core team includes PCP/geriatrician, RN/NP, pharmacist, CM/social worker from local AAA. On-call team of specialists (pulmonologist, cardiologist, psychiatrist, physical/occupational therapist). Core team meets in person weekly to discuss care and calls on specialists when needed.
Electronic health record /information technology (IT) requirements	PCPs must maintain web-based EHRs for SCO enrollees, from which CCA collects data and shares results with PCPs every quarter.	Networks collect claims and patient outcome data (through chart review). CM uses data to identify high-need, high-cost users; PCP uses outcome reports for QI.  Independent chart audits through AHEC	CHP maintains EHR system; uses claims data to populate a relational database with cost, utilization, diagnostic, and demographic information that is used for State reports. EHR does not currently include Rx information. Paper copy of patient record and health assessment provided to PCP.	All PCPs must have electronic and searchable patient registries; system design varies by PCP.	Providers maintain separate EHR systems. In inpatient settings, clinicians take notes on the same record and share info w/ PCP via alpha page, email, fax, and phone.

**Table 2. Characteristics and case management approaches of participating primary care practices, by program**

	Program or Organization				
	Commonwealth Care Alliance (CCA), Massachusetts	Community Care of North Carolina (CCNC)	Community Health Partnership (CHP), Wisconsin	Health Care Homes (HCH), Minnesota	Summa Health System, Ohio
Case manager location/ sponsorship	CCA CM staff are jointly recruited by CCA and participating PCPs; may be exclusive to one PCP if case mix warrants, otherwise CCA CMs spread time among practices.	Regional networks hire case managers; some CMs work with multiple PCPs; some work in one PCP if it is large and/or has many complex patients.	CM staff employed by CHP and each team works with multiple PCPs, who see CHP and non-CHP patients.	CM or CM team directly employed by the PCP or PCP's affiliated health care network or contracted with vendor or community public health agency	CM employed by local AAA; services funded by Medicaid HCBS waiver
Allocation of case management resources to complex patients and caseload	CCA assigns primary care CMs to each PCP; each CCA NP manages 40 to 65 SCO dual eligible enrollees, along with geriatric social workers.	Identified by physician referral and from Medicaid claims data. Patients with multiple ER visits, Rx claims, or certain diagnoses are selected for intensive "high-touch" CM (about 5-8% of all Medicaid beneficiaries). Average CM case load of 1: 4,000 patients.	Level of interaction depends on the needs of the patient. About 60 patients assigned to each CM team.	PCPs assess each patient's complexity (rated on a scale of 0-4) and use a patient registry to identify patients who have the most complex needs. More complex patients receive more case management support/time.	Identified by physician referral and upon discharge. Area duals get care at Summa Health System and at AAA (shared population). CM is responsible for needs assessment.
Features each program believes contribute to success	Offers both enhanced primary care and case management. Participating PCP must designate a clinician "champion" to determine how best to apply the CCA care model to that practice's staffing and patient mix; CCA may reimburse for clinical leader's time.	Physician leadership and buy-in; CMs and clinicians regularly share treatment plans; some networks pay physicians for their consultation time; delivery model innovation/variation at the network level.	Patient-centered program design; patient-focused leadership and staff. Critical mass of 20-30 CHP patients in a PCP helps a practice understand CHP's system.	Strong administrative and physician leadership and buy-in; statewide momentum built early on; State-led learning collaborative to support PCP transformation; many small clinics affiliated with large health systems can access additional resources	Physician and administrative leadership; AAA culture of innovation; leadership has demonstrated program savings to the sponsoring hospital

Source: Program details compiled from program Websites; published sources; and Mathematica-led phone calls with representatives from selected organizations, conducted between April 14 and May 10, 2011.

AAA = Area Agency on Aging  
 ACO = Accountable Care Organization  
 AHEC = Area Health Education Center  
 BCBS = Blue Cross Blue Shield  
 CC = Care coordination  
 CHC = Community health center  
 CM= case manager  
 EHR = Electronic health record  
 FQHC = Federally qualified health center  
 IDS = Integrated delivery system  
 IPA = Independent Practice Association  
 LTC = Long term care  
 MAPCP = Multi-Payer Advanced Primary Care Practice (Demonstration)  
 NCQA = National Committee for Quality Assurance  
 NP = Nurse practitioner  
 PC = Primary care  
 PCP = Primary care practices  
 QI = Quality improvement  
 RN = Registered nurse  
 Rx = Prescription  
 SW = Social Worker

\*A crosswalk of the NCQA and MN Health Care Home certification standards is available at [http://www.health.state.mn.us/healthreform/homes/certification/CertificationAssessmentTool\\_100423.doc](http://www.health.state.mn.us/healthreform/homes/certification/CertificationAssessmentTool_100423.doc).



**Table 3. Financing sources and payment for case management of complex populations, by program**

	Program or Organization				
	Commonwealth Care Alliance (CCA), Massachusetts	Community Care of North Carolina (CCNC)	Community Health Partnership (CHP), Wisconsin	Health Care Homes (HCH), Minnesota	Summa Health System, Ohio
Source of funds for case management or care coordination provided by primary care practices	Medicaid and Medicare (CCA is a SNP)	Medicaid; State funds for CM of uninsured through Health Net; Medicare and some commercial payers, starting in 2011 through 646 and MAPCP demos. CMS Federal grant funds to state for demonstrations. Some regional networks get private grants to augment State support.	Medicaid and Medicare (CHP is an SNP)	Medicaid, Medicare (through MAPCP demonstration), private insurance and State employee group. Non-ERISA based.	Initial grant funding from AHRQ and National Palliative Care Research Center for AD-LIFE and PEACE Trial. Medicaid, Medicare Advantage, professional fees, and subsidies from affiliated hospital and hospice.
Method and amount of payment to PCP for CM/CC	CCA pays PCPs full or modified capitation rates for each enrollee.  From total premiums received, CCA pays for the investments in the PCPs (for example, IT enhancements); added wrap-around staff.	Total payment of \$18.72 PMPM for each participating Medicaid ADB patient, which is split between the PCP and network. PCPs not participating in CCNC can receive \$1 PMPM for each ADB patient. CCNC-participating PCPs receive \$5.00 PMPM.	No current payment to PCPs. In the past, CHP has tried to pay PCPs \$25 per month or \$125 per care plan review for CM. The payments were incompatible with large PCP billing systems, so CHP discontinued CM payments.	State pays PMPM CM fees, tiered by patient complexity and established by standardized assessment  Five tiers: (0) = none, (1) = \$10.14, (2) = \$20.27, (3) = \$40.54, (4) = \$60.81.  Rates increase by 15% for patients whose primary language is not English or who have serious and persistent mental illness.  In 2011 CMS MAPCP demo, Medicare pays State rates (above). Proposal under review.  Private-pay CC rates separately negotiated by clinics and insurers.	In grant-funded AD-LIFE and PEACE trials and the pilot for program through Summa Health System's Medicare Advantage plan, PCPs paid one-time \$75 "participation" fee to cover costs of reviewing the initial patient care plan, and to meet with the case managers and health coach. In AD-LIFE and PEACE trial, PCPs paid \$75 for each patient enrolled in the intervention group.



**Table 3. Financing sources and payment for case management of complex populations, by program**

Program or Organization					
	Commonwealth Care Alliance (CCA), Massachusetts	Community Care of North Carolina (CCNC)	Community Health Partnership (CHP), Wisconsin	Health Care Homes (HCH), Minnesota	Summa Health System, Ohio
Method and amount of payment to program sponsor for CM/CC	Medicaid and Medicare pay risk-adjusted premiums to CCA for SCO enrollees; CCA pays hospital, home health agencies, and specialists based on Medicare or Medicaid fee schedules.  From total premiums received, CCA pays costs for CCA team members complement PCP staff in conducting multidisciplinary assessment home visits, and coordinating all care	Total payment of \$18.72 PMPM for each participating Medicaid ADB patient, which is split between the PCP and network. The regional support networks receive \$13.72 PMPM.	Capitated payments from Medicaid and Medicare paid for each covered member using a formula based on 95% of area nursing home costs.	State uses risk-tiered PMPM fee structure to pay PCPs directly for CM services. (See methodology described below).	CM payment to AAA through Medicaid waiver (external to Summa Health System).
Bonuses or extra pay to PCP for meeting performance thresholds?	CCA shares a portion of Medicare savings from lower-than-expected hospital and nursing home admissions with PCPs.	Statewide Physician Incentive Program rewards networks for asthma and diabetes care improvement. Networks determine payment to PCPs.	N/A	MN runs a separate P4P system to pay PCPs that meet or exceed quality measures reported by the statewide system. Certified health care homes are eligible for payment.	P4P through some health plans.
New payer developments	BCBS of Massachusetts may contract with CCA to provide comprehensive care to people with spinal cord injuries.	In Medicare 646 demonstration for dual enrollees, CCNC eligible for savings to be used for QI. Seven counties will participate in CMS MAPCP demonstration.	N/A	MN will participate in CMS MAPCP demonstration.	Summa Health System transitioning to certified ACO.

Source: Program details compiled from program Web sites; published sources; and Mathematica-led phone calls with representatives from selected organizations, conducted between April 14 and May 10, 2011.

ADB = Aged, blind and disabled

ACO = Accountable Care Organization

BCBS = Blue Cross Blue Shield

CC = Care coordination

CM= Case manager

ERISA = Employee Retirement Income Security Act

FFS = Fee for service

IT = Information technology

MAPCP = Multi-Payer Advanced Primary Care Practice (Demonstration)

P4P = Pay for performance

PMPM = Per member per month

QI = Quality Improvement

SNP = Special Needs Plan

## Table References

- Agency for Healthcare Research and Quality (AHRQ). Innovation profile: cooperative network improves patient transitions between hospitals and skilled nursing facilities, reducing readmissions and length of hospital stays. <http://www.innovations.ahrq.gov/content.aspx?id=2162>. Accessed October 25, 2011.
- AHRQ. Innovation profile: post-discharge care management integrates medical and psychosocial care of low-income elderly patients. <http://innovations.ahrq.gov/content.aspx?id=1746>. Accessed October 25, 2011.
- AHRQ. Innovation profile: plan-funded team coordinates enhanced primary care and support services to at-risk seniors, reducing hospitalizations and emergency department visits. <http://www.innovations.ahrq.gov/content.aspx?id=2243>. Accessed October 25, 2011.
- Allen K, Hazelett S, Jarjoura D, et al. The after-discharge care management of low-income frail elderly (AD-LIFE) randomized trial: theoretical framework and study design. *Popul Health Manag* 2011;14(0):1-6.
- Community Care of North Carolina. CCNC quality measures and feedback final measures for 2011 reporting year. 2010. <http://www.ccwjc.com/Forms/Final%20CCNC%20Quality%20Measures%202011.pdf>. Accessed October 25, 2011.
- Commonwealth Care Alliance. About us. <http://www.commonwealthcare.org/text/about-us/index.html>. Accessed October 25, 2011.
- Community Health Partnership, Inc. About us. 2011. <http://www.communityhealthpartnership.com/visitors/about.php>. Accessed October 25, 2011.
- Community Health Partnership, Inc. Positive effects annual report 2010. <http://www.communityhealthpartnership.com/visitors/positiveeffects.php>. Accessed October 25, 2011.
- Centers for Medicare & Medicaid Services. Details for multi-payer advanced primary care initiative. 2011. <http://www.cms.gov/demosprojectsevalrpts/md/itemdetail.asp?itemid=cms1230016>. Accessed October 25, 2011.
- Esposito D, Taylor E, Andrews K, et al. Evaluation of the Medicaid Value Program: health supports for consumers with chronic conditions: executive summary. (Prepared by Mathematica Policy Research under Contract No. 100314). Hamilton (NJ): Center for Health Care Strategies; 2007.
- Grumbach K, Bodenheimer T, Grundy P. The outcomes of implementing patient-centered medical home interventions: a review of the evidence on quality, access, and costs from recent prospective evaluation studies. Washington (DC): Patient Centered Primary Care Collaborative; 2009.
- Master R. Improving care and managing costs for dually eligible elderly and disabled populations [presentation by Commonwealth Care Alliance]. [http://www.chcs.org/usr\\_doc/Masters-Care\\_and\\_Costs.ppt](http://www.chcs.org/usr_doc/Masters-Care_and_Costs.ppt). Accessed October 25, 2011.
- Meyer H. A new paradigm slashes hospital use and nursing home stays for the elderly and the physically and mentally disabled. *Health Aff* 2001;30(3):412-5.
- Minnesota Department of Health. Care Coordination Tier Assignment Tool, version 1.0: Health Care Home Initiative. 2010. [http://www.health.state.mn.us/healthreform/homes/payment/HCHComplexityTierTool\\_March2010.pdf](http://www.health.state.mn.us/healthreform/homes/payment/HCHComplexityTierTool_March2010.pdf). Accessed October 25, 2011.
- Minnesota Department of Health. Community care teams RFP Q&A. 2011. [http://www.health.state.mn.us/healthreform/rfp/hchcareteams\\_QA\\_updated.pdf](http://www.health.state.mn.us/healthreform/rfp/hchcareteams_QA_updated.pdf). Accessed October 25, 2011.
- Minnesota Department of Health. Health care homes: certification requirements and process. 2010. <http://www.health.state.mn.us/healthreform/homes/certification/index.html>. Accessed October 25, 2011.
- Minnesota Department of Health. Health care homes. 2011. <http://www.health.state.mn.us/healthreform/homes/index.html>. Accessed October 25, 2011.

Minnesota Department of Health. Health care homes: Minnesota Health Care Programs (MHCP) fee-for-service care coordination rate methodology. 2011.  
[http://www.dhs.state.mn.us/main/idcplg?IdcService=GET\\_FILE&RevisionSelectionMethod=LatestReleased&noSaveAs=1&Rendition=Primary&allowInterrupt=1&dDocName=dhs16\\_148943](http://www.dhs.state.mn.us/main/idcplg?IdcService=GET_FILE&RevisionSelectionMethod=LatestReleased&noSaveAs=1&Rendition=Primary&allowInterrupt=1&dDocName=dhs16_148943). Accessed October 25, 2011.

Minnesota Department of Health and Minnesota Department of Human Services. Health care homes: annual report on implementation, report to the Minnesota legislature. St. Paul (MN): Minnesota Department of Health and Minnesota Department of Human Services; 2010.

New York State Department of Health. Case management components flow chart. 2004.  
<http://www.health.state.ny.us/diseases/aids/standards/casemanagement/docs/flowchart.pdf>. Accessed October 25, 2011.

Palsbo S (Center for Health & Disability Research National Rehabilitation Hospital, Washington, DC), Mastal M (Delmarva Foundation for Medical Care, Washington, DC). Disability care coordination organizations: the experience of Medicaid managed care programs for people with disabilities. Hamilton (NJ): Center for Health Care Strategies, Inc.; 2006. Report No. 281.

Steiner B, Denham A, Ashkin E, et al. Community care of North Carolina: improving care through community health networks. *Ann Fam Med* 2008;6(4):361-7.

Sorensen A, Bernard S, Tant E, et al. Medicare Health Care Quality Demonstration evaluation North Carolina—Community Care Network. (Prepared by RTI under CMS Contract No. 500-00-024, TO 24). Baltimore (MD): CMS Office of Research, Development, and Information; 2010.

Wright K, Hazelett S, Jarjoura D, et al. The AD-LIFE trial: working to integrate medical and psychosocial care management models. *Home Healthc Nurse* 2007; 25(5):308-14.



AHRQ Publication No. 12-0010  
January 2012