Assessing the Impact of the Patient-Centered Medical Home

Principal Investigator: West, David, Ph.D.
Organization: University of Colorado Health Science Center
Contract Number: 290-07-10008-6
Project Period: July 2009 – February 2011
AHRQ Funding Amount: $249,876

Summary: A research team from the University of Colorado Health Sciences Center and the Robert Graham Center evaluated clinical outcomes, financial and economic impact, and patient and provider satisfaction for WellMed Medical Group. WellMed is a medium-sized primary care health system that, over the past 20 years, has implemented a patient-centered medical home (PCMH) as defined by the National Committee for Quality Assurance. The study examined outcomes and cost-effectiveness of the PCMH model implemented amongst WellMed's 22 practices and 80 providers. The evaluation focused on overall care; care for specific diseases such as coronary artery disease, diabetes mellitus, and chronic obstructive pulmonary disease; and preventive care, including adult immunizations.

The study team used a mixed-method qualitative and quantitative evaluation approach. Key informant interviews and participant observations helped the study team understand how WellMed developed its model of care over time, the critical organizational milestones on the road to becoming a PCMH, and what it means to WellMed to be a PCMH. These qualitative data provided a narrative foundation that complemented and informed the quantitative findings. Data collection focused on the strategic changes made to improve health outcomes for different conditions. Health outcome measures included clinical outcome test values, hospitalization rates, and mortality rates. Particular attention was given to the associated effects of specific elements of the medical home model, including care management, team-based care characteristics, and health information technology (IT) functions.

A trend analysis assessed the impact of PCMH-related interventions on patient and provider satisfaction. In addition, a detailed analysis of the data assessed the impact of the WellMed PCMH on patient care and health outcomes over a period of 10 years (1997-2006), comparing the full claims data available during various blocks of time with similar patient panels. Purposeful implementation of a comprehensive patient data management system allowed for internal and external cohort analyses.

Specific Aims:

- Determine how WellMed developed their level-3 PCMH model (facilitators, barriers, key components, history, and leadership) using a qualitative methods approach. **(Achieved)**
- Determine if implementation of the WellMed model impacted patient and provider satisfaction. **(Achieved)**
- Determine if implementation of the WellMed level-3 PCMH improved care and health outcomes for patients. **(Achieved)**
- Determine the incremental in-practice expenses per patient per month required to operate the WellMed PCMH, and key components of the program. **(Achieved)**

2011 Activities: The quantitative comparison analysis was completed in 2010 and the first of four

studies, *Case Study of a Primary-Care Based Accountable Care System Approach to Medical Home Transformation*, was published in the January 2011 *Journal of Ambulatory Care Management*. This manuscript reported that WellMed patients older than 65 had an adjusted mortality rate that was half of the statewide average. Hospitalization and readmission rates and emergency department visits had not changed over time, but preventive services improved. The authors concluded that phased implementation across the network made it difficult to link improvements to specific processes, but they seem to improve outcomes collectively.

Three additional papers were finalized in 2011, including: 1) *A Cohort Analysis of Medicare Beneficiaries in a Primary Care-based Accountable Care Organization vs. Medicare Fee-for-service;* 2) *A 20-year Evolving Patient-Centered Medical Home–Based Accountable Care Organization that Works for Older Americans;* and 3) *The Economics of a Primary Care-based Accountable Care Organization*. Publication of these papers is pending. The final analyses were also presented as part of an invited panel at Academy Health in June 2011.

The contract was extended for 6 months, during which a significant portion of the manuscript development occurred. The project was completed in February 2011.

Impact and Findings: This study found that WellMed, Inc., a primary-care based accountable care organization (ACO), produced clinical, financial, and utilization outcomes that are demonstrably better than matched cohorts of fee-for-service Medicare patients. This evaluation demonstrated that a 40-50 percent increase in investment in primary care over typical Medicare payments—up to 10 percent of total health care spending and investment in a sophisticated array of support services—can produce impressive savings, largely by reducing inpatient admissions and bed days. The specific reductions in emergency and inpatient services, particularly of bed-days, produce considerable return on investments in outpatient care, disease, and complex-care management; intensive clinical data monitoring and related quality feedback loops; and unusual services designed to solve costly patterns of care. WellMed also pays primary care providers more than twice as much as the national average, much of it through incentives that are large enough to shape behavior. The hospital used by WellMed generally reported larger margins than are typical of Medicare, but does not share in the broader savings, allowing more to be reinvested in outpatient services or shared as profit to outpatient team members.

This study supports findings from other ACO experiments and offers another model for reaping the fuller fruits of primary care. It also suggests a need to better understand the IT needs associated with population health management. WellMed demonstrated the need to have broader data-capture than clinical electronic health record systems; sophisticated analytic and feedback capacity (for quality improvement and intervention evaluation); and capacity for sharing data securely in a variety of ways, perhaps most importantly for patients to carry their key information electronically.

Target Population: Chronic Care*, Chronic Obstructive Pulmonary Disease, Diabetes, Heart Disease

Strategic Goal: Develop and disseminate health IT evidence and evidence-based tools to support patient-centered care, the coordination of care across transitions, and the electronic exchange of health information to improve quality of care.

Business Goal: Knowledge Creation

** This target population is one of AHRQ's priority populations.*