RUPRI Center for Rural Health Policy Analysis
Rural Policy Brief

Brief No. 2011-6 September 2011 www.public-health.uiowa.edu/rupri

Patient-Centered Medical Home Services in 29 Rural Primary Care Practices: A Work in Progress

A. Clinton MacKinney, MD, MS; Fred Ullrich; Keith J. Mueller, PhD

Key Findings

- On average, rural primary care practices in a national survey of 29 practices optimally provided less than one-third of patient-centered medical home services and processes.
- Optimal delivery of patient-centered medical home services varied across 5 domains (access to care, population-based, quality, care management, and clinical information management), from 18% of practices delivering optimal population-based services to 40% of practices delivering optimal access-to-care services.

Introduction

The patient-centered medical home (PCMH) is an increasingly endorsed primary care delivery model.[1] Multiple definitions of PCMH exist. Most describe a PCMH as the infrastructure (providers, staff, health information technology, care processes, etc.) that supports proactive prevention, care coordination, and patient-centered health care. Providing PCMH services and processes can require significant practice transformation: practices must shift clinic emphasis from patient care that is visit-focused and based on fee-for-service to patient care that is comprehensive and longitudinal.

National and ongoing studies by the American Academy of Family Physicians and the Center for Studying Health System Change include survey questions directly applicable to PCMH readiness. The RUPRI Center is currently analyzing data from these surveys utilizing the National Committee on Quality Assurance (NCQA) Patient-Centered Medical Home standards.[2] In 2008, Rittenhouse et al. published an evaluation of national data on large primary care and multispecialty medical groups with 20 or more physicians and their use of "patient-centered medical home processes." The researchers found adoption of medical home processes with 20 or more physicians was low, but highest in practices with greater than 140 physicians. This finding was explained by greater resource availability for innovation in large practices.[3] This year, the same researchers published findings from the National Study of Small and Medium-Sized Physician Practices. In that study of practices sized 1-19 physicians, the researchers found that "on average, practices earned 21.7% of the possible points for use of medical home processes."[4] The Rittenhouse study did not publish the urban/rural distribution of the responding practices.

As payers and patients increasingly expect the services typically offered by a PCMH, rural primary

RHRC
Rural Health Research & Policy Centers
Funded by the Federal Office of Rural Health Policy
www.ruralhealthresearch.org

Funded by the Federal Office of Rural Health Policy, Health Resources and Services Administration, U.S. Department of Health and Human Services (Grant # U1C RH20419)

RUPRI Center for Rural Health Policy Analysis, University of Iowa College of Public Health, Department of Health Management and Policy,
105 River Street, N200 CPHB, Iowa City, IA 52242, (319) 384-3830
http://www.public-health.uiowa.edu/rupri
E-mail: cph-rupri-inquiries@uiowa.edu

care practices may not be developing PCMHs as comprehensively as their urban counterparts, at least in part because of limited access to necessary resources. Based on a sample of 29 practices, this study provides a snapshot of PCMH services and processes delivered by rural primary care practices. This is a thorough examination using measures of progress across five domains and for multiple characteristics within two of them. The patterns we find, while not generalizable because of the small sample size, are suggestive of the gaps between the status quo for small rural practices and the most desirable characteristics of PCMHs (based on NCQA standards).

Methods

A survey instrument was designed by this research team to assess PCMH readiness in 5 domains: Access to Care, Care Management, Population-based, Quality, and Clinical Information Management (Table 1). Domains could include multiple sub-domains. This survey is a modification of a survey developed to study PCMH implementation in the Veterans Health Administration. All questions were reviewed for validity and applicability by an expert panel of primary care providers. The survey was then mapped to criteria published by the NCQA.[5] The survey instrument is available upon request from the authors, inquiries can be submitted thorugh the RUPRI Center web site, http://www.public-health.uiowa.edu/rupri/.

Table 1. PCMH Survey Details

Domain	Sub-Domain	# of Survey Questions
Access to Care	General	6
Care Management	General	1
	Communication	14
	Documentation	5
	Chronic Disease	2
	Care Coordination	10
	Teams	7
Population-based	General	4
Quality	Patient Access/Satisfaction	2
	Patient Safety	3
	Evaluation and Improvement	8
Clinical Information Management	General	9

To identify potential study participants, 2 states were randomly selected from each of the 9 census divisions, plus Iowa. Ten family practice physicians were randomly selected from non-metropolitan ZIP codes (based on Rural-Urban Commuting Area [RUCA] codes greater than 3 – indicating a non-metropolitan area) in each of these states for survey instrument administration. This process produced a sample of 190 physicians geographically distributed across the country. Sample size was a function of resources available to the project and securing responses from multiple regions. The sample would not necessarily meet power calculation requirements to be representative of all rural physician practices. The sample was drawn from the AMA Masterfile and obtained from Direct Medical Data, an authorized AMA Masterfile distributor. Twenty-nine of 190 (15%) practices participated, 57 (30%) specifically refused to participate, 78 (41%) did not respond (e.g., there was no telephone response or the practice manager could not be reached), and 26 (14%) were "lost" (e.g., the phone had been disconnected).

Results

Twenty-nine practices responded to our survey, and all 9 census regions were represented. Ten practices (36%) were privately owned, 9 (32%) were owned by a hospital or university, 2 were owned by a health system, 2 were government clinics, and 5 reported "other" ownership arrangements. One practice did not answer the question about practice ownership. Practices in the sample are characterized as follows:

- On average, the practices employed approximately 4.5 full-time equivalent (FTE) physicians, and all but 1 practice employed family physician(s).
- Physician specialty FTEs per practice included a mean of 3.3 family physicians, 1.1 general internists, 0.5 pediatricians, 0.1 OB-GYNs, and 0.7 other physicians.
- Eight practices reported 1 FTE physician, 5 practices reported 2 FTE physicians, and 14 reported more than 2 FTE physicians (1 practice did not provide physician FTE information).
- Of the 8 one-FTE physician practices, 4 employed a physician assistant or nurse practitioner. Three of the 2-FTE physician practices employed a PA or nurse practitioner.
- Only in the 14 larger practices (more than 2 FTE physicians) were non-family physicians employed. Four of these 14 larger practices employed a pediatrician, 4 employed a general internist, and 1 employed an OB/GYN. Only 1 practice (the largest, with 24 total physician FTEs) employed more than 1 non-family physician.
- The practices saw an average of 335 patients per week (range of 45-1,000).

Performance within each of the 5 PCMH domains was assessed by calculating the percentage of responses within the domain that indicated optimal PCMH process or service utilization. Based on knowledge of the PCMH literature, review of PCMH readiness surveys (e.g., NCQA's survey), and experience as a primary care physician (MacKinney), the authors chose the response from each survey question that represented an optimal level of PCMH service or process. For example, one Access-to-Care survey question was, "How often are patients who request same-day access to their primary care provider able to see their assigned provider and not some other provider?" Four practices (14%) responded with "Always" (an optimal response). The remaining 4 Access-to-Care domain questions were similarly assessed for optimal response. Then a domain score was established by calculating the percentage of optimal responses for all survey questions within the domain. A final PCMH performance score was calculated by averaging the domain scores.

Domain scores for optimal PCMH service and process delivery varied from 18% to 40%. Optimal Access-to-Care services and processes were delivered in an average of 40% of the practices. Additional optimal domain performance averages included Care Management – 32%, Population-based – 18%, Quality – 34%, and Clinical Information Management – 34%. When weighting each domain's performance equally, the responding practices provided an average of 32% of optimal PCMH processes and services (Table 2).

Table 2 – Percentage of PCMH Services or Processes Considered Optimal

Domain	% of Optimal Performance
Access to Care	40%
Care Management	32%
Population-based	18%
Quality	34%
Clinical Information Management	34%
Average Domain Performance	32%

Discussion

This study of 29 rural primary care practices showed less than optimal performance on PCMH processes and services. The National Study of Small and Medium-Sized Physician Practices by Rittenhouse *et* al found that practices earned an average of 21.7% of PCMH process points. Since the Rittenhouse survey and our survey used different sampling techniques, targeted different populations, and asked different survey questions, they are not necessarily comparable. However, the similarity of findings in the 2 surveys supports the conclusion that a small percentage of rural primary care practices are ready to meet all PCMH service delivery expectations.

If patients and payers desire increased PCMH availability, rural practice transformations will need to be more comprehensive than what has occurred in the practices responding to this project's survey. To facilitate practice transformation to PCMHs, public policies could provide capital and technical assistance to small rural practices, such as the Health Information Technology Regional Extension Centers (REC) created by the American Recovery and Reinvestment Act. Payment policies could value the unique services offered by PCMHs, following the lead of some state Medicaid programs (e.g., North Carolina). Public policies could build on the work of several professional organizations (e.g., the American Academy of Family Physicians' TransforMED project[6]) to help practices develop PCMH capacities. Medical schools and residency curricula could include comprehensive training in team-based care, care coordination skills, chronic disease and preventive health management, and quality improvement science.

Public policies in the form of demonstration projects, grants, and payment reform will encourage PCMH development. But we believe that PCMH development also requires rural practice leadership that recognizes the need for practice improvement and advances the transformation to PCMHs in each PCMH domain.

- **Access to care** can improve by maintaining office hours that respond to patient and family schedules, not physician schedules. For example, clinic appointments should be available to working patients during early mornings, evenings, and weekends.
- **Care management** can improve with development of care teams in which each team member cares for patients based on patient condition, not based on provider convenience or schedules. True team-based care should embrace all team members working at the optimum of education, license, and experience, not simply "filling in" for absent or overloaded physicians. Care coordination can improve by implementing referral information templates and a tracking process for consistent clinical information transfer and receipt.
- **Population-based** care can improve with use of disease registries and reminder systems that prompt both patients and providers.
- **Quality** of care can improve with proactive preventive health care and disease management. Simultaneously with clinical quality improvement and patient safety focus, practices can improve office efficiency with systems such as Lean or Six Sigma.
- **Clinical information management** use should continue to expand to facilitate care coordination and reduce service duplication. Electronic communication with patients should be developed since information, not face-to-face visits, is often needed by patients. Access to care can also improve with trusted web-based health care resources that can answer common health-related concerns at any time.

The call for PCMH services that focus on the patient experience, continuously improve quality, and deliver care efficiently, is growing. Yet many rural practices are not yet ready to deliver the full scope of PCMH services. Both public policy change and individual practice transformation are necessary to more rapidly bring PCMH services to rural patients.

---

[1] American Academy of Family Physicians (AAFP), American Academy of Pediatrics (AAP), American College of Physicians (ACP), and American Osteopathic Association (AOA). Joint Principles of the Patient-Centered Medical Home. March 2007. http://www.aafp.org/online/etc/medialib/aafp_org/documents/policy/fed/jointprinciplespcmh0207.Par.0001.File.dat/022107medicalhome.pdf (accessed August 8, 2011).

[2] http://www.ncqa.org/tabid/631/default.aspx. Accessed July 1, 2011.

[3] Rittenhouse DR, Casalino LP, Gillies RR, Shortell SM, and Lau B. Measuring the medical home infrastructure in large medical groups. *Health Affairs*. 2008;27(5):1246–58.

[4] Rittenhouse DR, Casalino LP, Shortell SM, McClellan SR, Gillies RR, Alexander JA, and Drum ML. Small and medium-size physician practices use few patient-centered medical home processes. *Health Affairs.* 2011;30(8):1575-1584.

[5] Adapted from a Veterans Affairs PCMH survey developed by Woodbridge, Mueller, MacKinney, and Nguyen in partial fulfillment of a Department of Veterans Affairs Rural Health Resource grant.

[6] See http://www.transformed.com/ for program details.