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Issue Brief:

Medical Home 2.0:
The Present, the Future

Foreword

In the Patient Protection and Affordable Care Act of 2010, the expansion of patient-centered medical home pilot programs is among delivery system reforms intended to reduce costs and improve population-based health by leveraging clinical information technologies, care teams and evidence-based medical guidelines.

Conceptually, a medical home model makes sense: Improved consumer access to primary care health services and increased accountability for healthy lifestyles are foundational to a reformed health system. For primary care clinicians, the current system of volume-based incentives limits their ability to appropriately diagnose and adequately manage patient care. For consumers, lack of access to effective and clinically accurate diagnostics and therapeutics via primary care is a formula for delayed treatment, overall poor health and higher costs. The medical home model is designed to address these issues.

Primary care is the front door to a transformed system of care in which multi-disciplinary care teams share responsibility and risk with consumers in managing outcomes and costs.

This is the Deloitte Center for Health Solutions' second look at the medical home. We maintain our support for this health care innovation and encourage the continued exploration of operating models and payment mechanisms that optimize its results and provide a clear path to widespread deployment. The status quo is not sustainable; primary care is the front door to a transformed system of care in which multi-disciplinary care teams share responsibility and risk with consumers in managing outcomes and costs. The "medical home 2.0" is an advancement in the design, delivery and payment for health care services that leverages emergent characteristics of a transformed health system – shared decision-making with patients, multidisciplinary teams where all participate actively in the continuum of care, incentives for adherence to evidence-based practices and cost efficiency and health information technologies that equip members of the care team and consumers to make appropriate decisions and monitor results.

The medical home 2.0 is a promising and necessary improvement to the U.S. system of health care. It is more than a new way to pay primary care physicians; it is a new way to deliver improved health care in the U.S.

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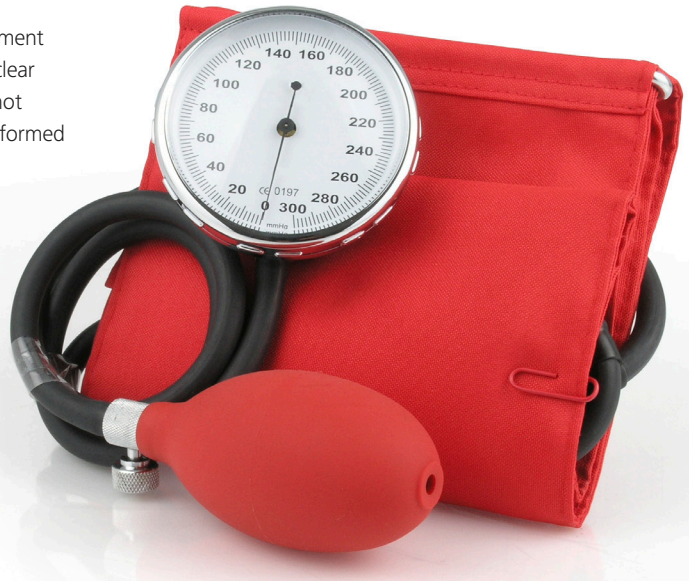


Produced by the Deloitte Center for Health Solutions

Introduction

The patient-centered medical home (PCMH) is a way of organizing primary care so that patients receive care that is coordinated by a primary care physician (PCP), supported by information technologies for self-care management, delivered by a multi-disciplinary team of allied health professionals and adherent to evidence-based practice guidelines. The goal of the PCMH is to deliver continuous, accessible, high-quality, patient-oriented primary care.

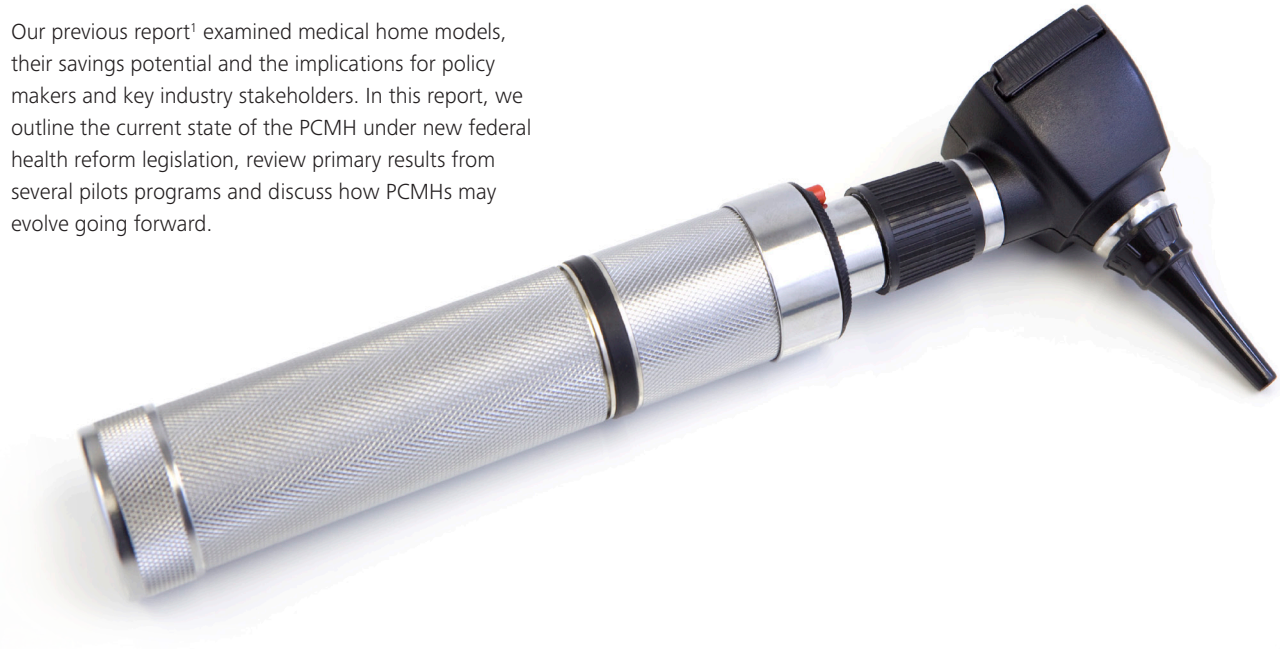
The American Academy of Pediatrics (AAP) introduced the medical home concept in 1967; more recently (2006), it was used in pilot programs for Medicare enrollees. PCMH's potential to improve population-based outcomes and reduce long-term health care costs has its underpinning in the 2010 Patient Protection and Affordable Health Care Act (PPACA), where new pilot programs are funded.

Our previous report[1] examined medical home models, their savings potential and the implications for policy makers and key industry stakeholders. In this report, we outline the current state of the PCMH under new federal health reform legislation, review primary results from several pilots programs and discuss how PCMHs may evolve going forward.

The medical home, pre- and post-reform

The PCMH is an innovative model of primary care delivery that espouses coordination of care as a necessary replacement for volume-based incentives that limit PCP effectiveness. It is widely touted by American Academy of Family Physicians (AAFP), AAP, American Osteopathic Association (AOA) and the American College of Physicians (ACP) as a means of reducing long-term health care costs associated with chronic diseases.[2]

The goal of the PCMH is to deliver continuous, accessible, high-quality, patient-oriented primary care.



1 *The Medical Home: Disruptive Innovation for a New Primary Care Model,* Deloitte Center for Health Solutions. Available at http://www.deloitte.com/us/medicalhome.

2 *Joint Principles of the Patient-centered Medical Home,* American Academy of Family Physicians, American Academy of Pediatrics, American College of Physicians and American Osteopathic Association, March 2007, http://www.acponline.org/advocacy/where_we_stand/medical_home/approve_jp.pdf. Accessed June 2010.

In 2007, the four societies released the *Joint Principles of the Patient-centered Medical Home,* which are summarized in Figure 1.

Figure 1: Summary of Joint Principles of the Patient-centered Medical Home

Principle	Description
Personal physician	Patients are assigned to a personal physician who provides "first contact, continuous and comprehensive care"
Physician-directed medical practice	Personal physician leads all other health care providers in the patient's care
"Whole person" orientation	Personal physician is responsible for all of the patient's care, including acute, chronic, preventive and end-of-life care
Integrated and coordinated care	Care is coordinated across all facilities through health care technology
Quality and safety	Practice collaborates with patient and family to define a patient-centered care plan
	Practice uses evidence-based medicine and care pathways
	Practice performs continuous quality improvement by measuring and reporting performance metrics
	Patient feedback is incorporated into performance measurement
	Patients and families participate in practice quality improvement
	Information technology is a foundation of patient care, performance measurement, communication and patient education
	Practices are certified as patient-centered by non-governmental entities
	Physicians share in savings from reduced hospitalizations
	Physicians receive bonus payments for attaining predetermined quality metrics
Enhanced access to care	Patients can take advantage of open scheduling, expanded hours and new communication options with the physician practice
Payments that recognize primary care added value	Payments should reflect both physician and non-physician value and encompass payments for all services, including non-face-to-face visits and care management

The "patient-centered medical home" is referenced 19 times in PPACA[3] in the context of five major initiatives, which are detailed in Figure 2.[4]

Figure 2: PCMH References in the PPACA

PCMH Initiative	Description
Innovation Center	The Center for Medicare and Medicaid Innovation will be testing and evaluating models that include medical homes as a way of addressing defined populations with either: (1) poor clinical outcomes or (2) avoidable expenditures.
Health Plan Performance	Medical homes are identified as one performance indicator for health plans. Additionally, the state health insurance exchanges are designing incentives to encourage high-performance plans, including those with medical homes.
Chronic Medicaid Enrollee Care	Starting in 2011, the federal government will match state funds up to 90 percent for two years to those states that provide options for Medicaid enrollees with chronic conditions to receive their care under a medical home model.
Community Care	To encourage the establishment of medical homes in community health systems, PPACA is providing grants to community care teams that organize themselves under the medical home model.
New Model for Training	In conjunction with the Agency for Health Research & Quality (AHRQ), PPACA creates the Primary Care Extension Program, which provides primary care training and implementation of medical home quality improvement and processes.

3 Lowes, Robert. "Lack of Adequate Pay Reduces Effectiveness of Medical Home," *Medscape Medical News,* June 7, 2010.

4 Bernstein J, Chollet D, Peikes D, and Peterson GG. "Medical Homes: Will they Improve Primary Care?" Issue Briefs, *Mathematica*, June 2010.

Pilot programs and preliminary results

While trade and peer-reviewed literature reference more than 100 planned or established PCMH pilot programs, results reporting (e.g., cost savings, population health improvements) is scarce. The referenced programs (a few of which are listed in Figure 3) vary widely in structural characteristics, scope of patient enrollment, disease mix, operating models and sponsorship.

Figure 3: Pilot Medical Home Programs in the U.S.[5]

Program	State	Start	# Physicians
TransforMED National Demonstration Project: 36 family practices	Multiple	2006	TBD
Guided Care	MD	2006	49
Greater New Orleans Primary Care Access and Stabilization Grant	LA	2007	324
Louisiana Health Care Quality Forum Medical Home Initiative	LA	2007	500
Colorado Family Medicine Residency PCMH Project	CO	2008	320
Metcare of Florida/Humana Patient-centered Medical Home	FL	2008	17
National Naval Medical Center Medical Home Program	MD	2008	25
Blue Cross Blue Shield of Michigan: Patient-centered Medical Home Program	MI	2008	8,147
Priority Health PCMH Grant Program	MI	2008	108
CIGNA and Dartmouth-Hitchcock Patient-centered Medical Home Pilot	NH	2008	253
EmblemHealth Medical Home High Value Network Project	NY	2008	159
CDPHP Patient-centered Medical Home Pilot	NY	2008	18
Hudson Valley P4P-Medical Home Project	NY	2008	500
Queen City Physicians/Humana Patient-Centered Medical Home	OH	2008	18
TriHealth Physician Practices/Humana Patient-centered Medical Home	OH	2008	8
OU School of Community Medicine – Patient-centered Medical Home Project	OH	2008	TBD
Pennsylvania Chronic Care Initiative	PA	2008	780

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5 Pilots and Demonstrations, The Patient-Centered Primary Care Collaborative Website, http://www.pcpcc.net/pcpcc-pilot-projects. Accessed June 2010.

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Program	State	Start	# Physicians
Rhode Island Chronic Care Sustainability Initiative	RI	2008	28
Vermont Blueprint Integrated Pilot Program	VT	2008	44
Alabama Health Improvement Initiative–Medical Home Pilot	AL	2009	70
UnitedHealth Group PCMH Demonstration Program	AZ	2009	25
The Colorado Multi-Payer, Multi-State Patient-centered Medical Home Pilot	CO	2009	51
CareFirst BlueCross BlueShield Patient-centered Medical Home Demonstration Program	MD	2009	84
Maine Patient-centered Medical Home Pilot	ME	2009	221
I3 PCMH Academic Collaborative	NC	2009	753
NH Multi-Stakeholder Medical Home Pilot	NH	2009	63
NJ Academy of Family Physicians/Horizon Blue Cross Blue Shield of NJ	NJ	2009	165
Greater Cincinnati Aligning Forces for Quality Medical Home Pilot	OH	2009	35
I3 PCMH Academic Collaborative	SC	2009	753
Washington Patient-centered Medical Home Collaborative	WA	2009	755
West Virginia Medical Home Pilot	WV	2009	50
CIGNA/Piedmont Physician Group Collaborative Accountable Patient-centered Medical Home	GA	2010	93
WellStar Health System/Humana Patient-centered Medical Home	GA	2010	12
CIGNA/Eastern Maine Health Systems	ME	2010	30
NJ FQHC Medical Home Pilot	NJ	2010	17
Dfcic PCMH pilot	OR	2010	1
Texas Medical Home Initiative	TX	2010	30
Medicare-Medicaid Advanced Primary Care Demonstration Initiative	Up to 6 states	2011	TBD

Academic research: Systematic review of results

Of the few substantive, academically rigorous studies conducted on PCMHs, three of the more robust are summarized below:

Study #1 – Researchers at Harvard Medical School, Brigham and Women's Hospital and Beth Israel Deaconess Medical Center identified 26 ongoing PCMH pilots,[6] encompassing 14,494 physicians in 4,707 practices and five million patients. The team's analysis spotlighted the highly variable structural, financial and operational features of these PCMHs (Figure 4). In addition, the team observed that PCMHs employ one of two basic practice models: (1) a collaborative learning chronic care management model or (2) an external consultant-facilitated model.

Figure 4: Variability of 26 Ongoing PCMH Pilots[7]

Approach	Characteristic	Frequency*
Transformation Model	Consultative	35%
	Chronic care model-based learning collaborative	23%
	Combination	15%
	None	27%
Use of Facilitator	Internal	27%
	External	42%
	None	31%
Focus of Improvement	General	46%
	Disease-specific	54%
Information Technology*	EMR	69%
	Registry	81%
	Neither are required nor encouraged	8%
Payment Model*	Single payor	69%
	Multi-payors that have Safe Harbors	44%
	Use FFS Payments	100%
	Typical FFS payments	96%
	Enhanced FFS payments	4%
	Use some form of per-person, per-month payments (PPPM)	96%
	Incorporate bonus payments (Either existing P4P programs or new programs)	77%

Adapted from Bitton, A, Martin C, and Landon B. "A nationwide survey of patient-centered medical home demonstration projects," *J Gen Intern Med.,* June 2010; 25(6):584-92.

** Respondents are able to choose more than one response, therefore, frequencies may total more than 100 percent.*

6 Bitton A, Martin C, Landon BE. "A nationwide survey of patient-centered medical home demonstration projects," *J Gen Intern Med,* June 2010; 25(6): 584-92.
7 Ibid

Study #2 – A 2010 study led by researchers at Harvard Medical School analyzed seven medical home programs (Figure 5) to assess features of those deemed successful.[8] Sponsors of these programs included prominent commercial health plans, integrated health systems and government-sponsored programs: Colorado Medical Homes for Children, Community Care of North Carolina, Geisinger Health System, Group Health Cooperative, Intermountain Health Care, MeritCare Health System and Blue Cross Blue Shield of North Dakota, and Vermont's Blueprint for Health. The selected programs were measured on improvements in the number of hospitalizations and savings per patient.

Figure 5: Analysis of Seven PCMH Pilot Programs[9]

Pilot	# of Patients	Population	Incentives	Results		
				Hospitalization reduction (%)	ER visit reduction (%)	Total savings per patient
Colorado Medical Homes for Children	10,781	Medicaid CHP+	Pay for Performance (P4P)	18%	NA	$169-530
Community Care of North Carolina	> 1 million	Medicaid	Per Member Per Month (PMPM) payment	40%	16%	$516
Geisinger (ProvenHealthNavigator)	TBD	Medicare Advantage	P4P; PMPM payment; shared savings	15%	NA	NA
Group Health Cooperative	9,200	All	TBD	11%	29%	$71
Intermountain Health Care (Care Management Plus)	4,700	Chronic disease	P4P	4.8-19.2%	0-7.3%	$640
MeritCare Health System and Blue Cross Blue Shield of North Dakota	192	Diabetes	PMPM payment; shared savings	6%	24%	$530
Vermont BluePrint for Health	60,000	All	PMPM payment	11%	12%	$215

Adapted from Fields D, Leshen E, and Patel K. "Driving quality gains and cost savings through adoption of medical homes," *Health Affairs,* May 2010; 29(5): 819-826. Appendix Exhibit 1.

8 Fields D, Leshen E, Patel K. "Driving quality gains and cost savings through adoption of medical homes," *Health Affairs,* May 2010; 29(5): 819-27.
9 Ibid

Despite the sample's heterogeneity, the research team concluded that four common features were salient to the seven programs' success:[10]

- Dedicated care managers
- Expanded access to health practitioners
- Data-driven analytic tools, and
- New incentives.

Study #3 – The National Demonstration Project (NDP) published its preliminary results in 2010 after examining medical home programs between 2006 and 2008. Designed by TransforMED, a subsidiary of the AAFP, the project was the first systematic test of PMCH effectiveness across 36 family practices in several states.[11] The research team concluded that the PCMH model is potentially effective in reducing costs and improving health status but requires significant investment and operating competencies that might be problematic to traditional practitioners.[12,13,14] Among the study's major takeaways:

- **Change is hard**. Both facilitated and self-directed practices implemented 70 percent of NDP PCMH model components; however, implementation was challenging and disruptive.
- **Some practices are better at changing than others.** The demonstration suggested that facilitation improved practices' ability to change, termed "adaptive reserve."Additionally, the practices' "adaptive reserve" weakly correlated with their ability to put PCMH components in place.
- **Practices that received help had an easier time.** Facilitation also increased adoption of PCMH components.
- **IT implementation is easier than changing care delivery.** While both the facilitated and self-directed groups easily implemented EMRs, practices struggled to implement e-visits, group visits, team-based care, wellness promotion and population management.
  - Practices had to shift from physician-centered to patient-centered care – a difficult transition for physicians used to being responsible for the entire patient encounter.
  - Care pathways required front- and back-office coordination and significant training efforts.
- **Patients may not be quick to appreciate the change.** On the whole, patients did not perceive the transformation to be beneficial, likely because of disruption in the practice and a lack of communication about the benefits of a medical home – e.g., the accessibility of nurse practitioners as opposed to waiting for a doctor's appointment.

10 *Fields D, Leshen E, Patel K. "Driving quality gains and cost savings through adoption of medical homes," Health Affairs, May 2010; 29(5): 819-826 doi: 10.1377/hlthaff.2010.0009.*

11 *Ann Fam Med, 2010 8: S2-8.*

12 Nutting PA, Crabtree BF, Miller WL, Stewart EE, Stange KC, Jaén CR. "Journey to the Patient-centered Medical Home: A Qualitative Analysis of the Experiences of Practices in the National Demonstration Project," *Ann Fam Med,* 2010; 8 (Suppl 1):s45–s56.

13 Nutting PA, Crabtree BF, Stewart EE, Miller WL, Palmer RF, Stange KC, Jaen CR. "Effect of Facilitation on Practice Outcomes in the National Demonstration Project Model of the Patient-centered Medical Home," *Ann Fam Med,* 2010 8: S33-44.

14 Jaen CR, Ferrer RL, Miller WL, Palmer RF, Wood R, Davila M, Stewart EE, Crabtree, BF, Nutting PS Stange KC. "Patient Outcomes at 26 Months in the Patient-centered Medical Home National Demonstration Project," *Ann Fam Med,* 2010 8: S57-67.

The quest for metrics

The scarcity of academic and trade industry research on PCMHs is problematic. Similarly, the fact that half of PCMH pilots to date identified metrics for calculating results *a priori* is troublesome.[15] Fortunately, credible organizations are making strides to bridge the gap in the quest for valid and reliable PCMH metrics. For example, the National Committee for Quality Assurance (NCQA) issued scoring guidelines that are used widely by pilot programs.[16] Its Physician Practice Connections – Patient-centered Medical Home (PPC-PCMH), shown in Figure 6, provides nine "must pass" standards, scored on a scale up to100 total points, with three levels of recognition.[17]

Figure 6: PPC-PCMH Content and Scoring Correlated to Seven "Joint Principles"[18]

	Core Principles of the Patient-Centered Medical Home Covered in the Tool				
PPC-PCMH Domain	**Physician-directed Practice**	**Whole-person Orientation**	**Care Coordinated or Integrated**	**Quality and Safety**	**Enhanced Access**
Access and Communication					Setting and measuring access standards (9 pts)
Patient Tracking and Registry Functions			Clinical data systems, paper or electronic charting tools to organize clinical information (14 pts)	Registries for population management and identification of main conditions in practice (7 pts)	
Care Management	Use of non-physician staff to manage care (3 pts)	Care management (5 pts)	Coordinating care and follow-up (5 pts)	Implementing evidence-based guidelines for three conditions and generating preventive service reminders for clinicians (7 pts)	
Patient Self-management Support		Supporting self-management (4 pts)			Assessment of communication barriers (2 pts)
Electronic Prescribing				E-prescribing and cost and safety check functions (8 pts)	
Test Tracking				Electronic systems to order, retrieve and track tests (13 pts)	
Referral tracking				Automated system (4 pts)	
Performance Reporting and Improvement				Performance measurement and reporting, quality improvement and seeking patient feedback (15 pts)	
Advanced Electronic Communications			E-communication with DM or CM managers (1 pt)	E-communication to identify patients due for care (2 pts)	Interactive web site that facilitates access (1 pt)
Total	**3 pts**	**9 pts**	**20 pts**	**56 pts**	**12 pts**

Adapted from Landon BE, Gill JM, Antonelli RC, and Rich EC. "Prospects For Rebuilding Primary Care Using The Patient-Centered Medical Home," *Health Affairs,* May 2010; 29(5): 827-834.

15 Bitton A, Martin C, Landon BE. "A nationwide survey of patient-centered medical home demonstration projects," *J Gen Intern Med,* June 2010; 25(6): 584-92.

16 Ibid

17 www.ncqa.org.

18 Landon BE, Gill JM, Antonelli RC and Rich EC. "Prospects For Rebuilding Primary Care Using the Patient-Centered Medical Home," *Health Affairs,* May 2010; 29(5): 827-834.

Other notable measurement efforts include the Primary Care Assessment Survey,[19] the Primary Care Assessment Tool,[20] the Components of Primary Care Instrument,[21] the Patient Enablement Instrument, the Consultation and Relational Empathy measure, the Consultation Quality Index and the Medical Home Intelligence Quotient.[22,23]

Implications

The medical home model's clinical and economic potential is promising; however, the precise features of an optimally successful program are somewhat elusive. Our findings:

- **With significant investment, the PCMH yields results.** Pilot data suggest that patient outcomes improve and costs are lower with PCMH implementation, but start-up and maintenance costs are high. In particular, fixed costs for information technologies and a multi-disciplinary care team are substantial.
- **Physician adoption is a major challenge.** Among the core competencies required of PCPs to effectively participate in medical home models are: (1) willingness to develop, update and adhere to evidence-based clinical guidelines; (2) flexibility to incorporate feedback from care team members and patients; (3) willingness to use health information technologies (HITs) in diagnostics and treatment planning and routine patient interaction; and (4) willingness to take risk in contracting with payors (health plans/employers). Notably, these principles were espoused as the basis of the "future of medicine" by the Institute of Medicine (IOM) and are now incorporated in clinicians' medical training. However, established practitioners are prone to discount these principles in favor of an overly simplistic preference that they be paid more and not be exposed to risk.
- **HIT is the essential front-end investment.** For patients to receive appropriate care and care teams to effectively manage and monitor patient behavior, a robust HIT investment including electronic medical records, broadband transmission, personal health records, decision support and web-based services to facilitate access are necessary. HIT represents a major investment; most practices will require assistance with its purchase and implementation.
- **One size does not fit all.** The pilots and academic research suggest wide disparity in PCMH approaches and operating features. Also, existing data is too inconclusive to define the features and incentives that work best for given patient populations. Conceivably, the medical home 2.0 has the ability to serve consumer needs of across the care continuum – preventive, chronic, acute and long-term.
- **Access to an adequate supply of primary care service providers is an issue.** PCPs account for 35 percent of the U.S. physician workforce, compared to 50 percent in most of the world's developed health systems.[24] By 2025, the U.S. will face a 27 percent shortage of adult generalist physicians. Even with increased supply via the expansion of residency programs, demand for primary care services will exceed the supply of providers.[25] Expanding the scope of practice for advanced practice nurses, mitigating frivolous liability claims, improving respect for the profession among medical peers, increasing e-visits, distance/telemedicine, group visits and changes in clinical processes are essential to bolstering the practice of primary care medicine.
- **Incentives must be aligned and realistic.** The Patient-centered Primary Care Collaborative proposed a clinician payment model (used in a number of pilots) which includes three pragmatic incentive elements:
  - A monthly care coordination payment to support the medical home structure
  - A visit-based, fee-for-service component relying on the current fee-for-service system
  - A performance-based component that recognizes the achievement of quality and efficiency goals[26]

19 Safran DG, Kosinski M, Tarlov AR, Rogers WH, Taira DH, Lieberman N, et al. "The Primary Care Assessment Survey: tests of data quality and measurement performance," *Med Care,* 1998; 36(5): 728–39.

20 Shi L, Starfield B, Xu J. "Validating the adult primary care assessment tool," *J Fam Pract,* 2001; 50(2): 161W–75W.

21 Flocke SA. "Measuring attributes of primary care: development of a new instrument." *J Fam Pract,* 1997; 45 (1): 64–74.

22 Landon BE, Gill JM, Antonelli, RC and Rich EC. "Prospects For Rebuilding Primary Care Using The Patient-Centered Medical Home," *Health Affairs,* May 2010; 29(5): 827-834.

23 Ibid

24 Bodenhemier T et al. "Confronting the Growing Burden of Chronic Disease: Can the U.S. Health Care Workforce Do the Job?" *Health Affairs,* 2009; 28(1): 64-74.

25 Scheffler R. "Recruiting the docs we need," *Modern Healthcare,* 2009; 39(4): 24.

26 Patient-Centered Primary Care Collaborative. Reimbursement reform: proposed hybrid blended reimbursement model [Internet]. Washington (DC): PCPCC; 2007 May [cited 2010 Apr 15]. Available at http://www.pcpcc.net/reimbursement-reform.

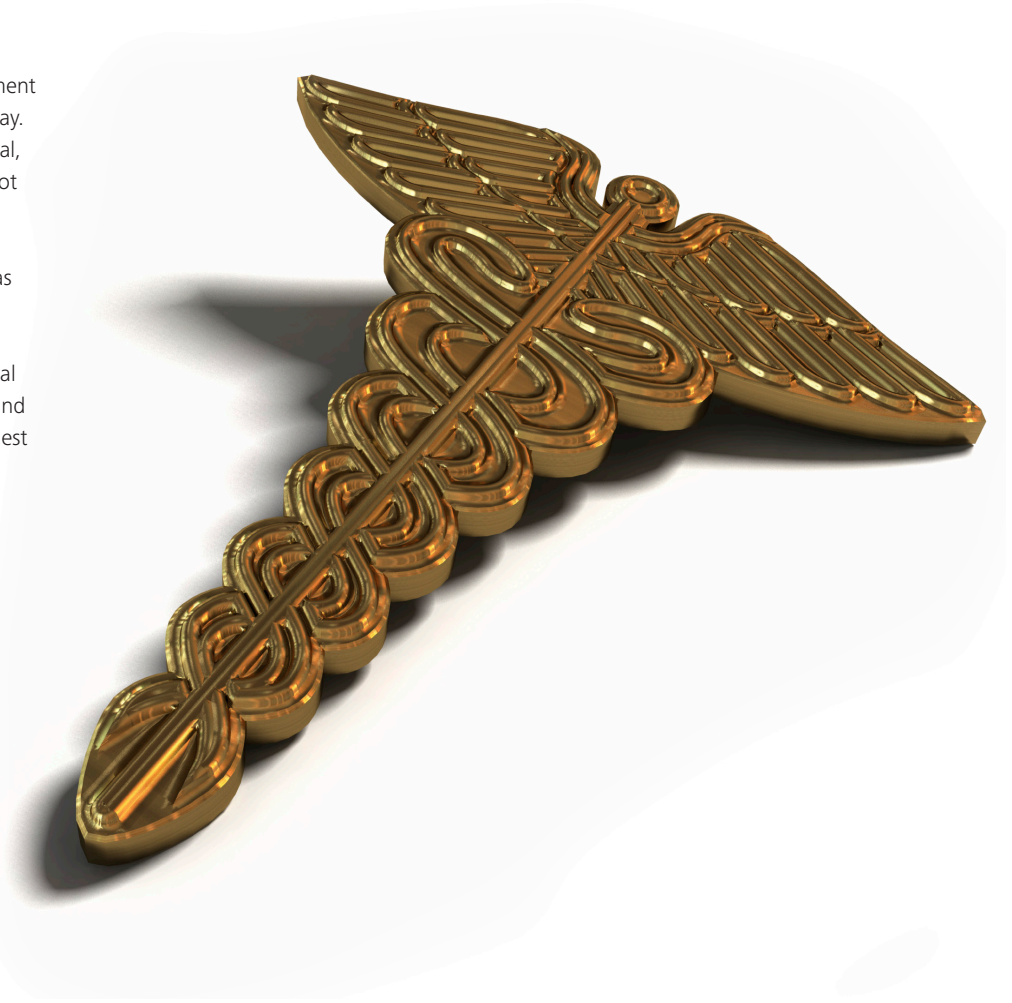
These elements seem to form a reasonable foundation for payment transformation in primary care. However, one issue could impact the third element: the validity and reliability of metrics used to define "quality" and "efficiency" and the timeframe (in months or years, depending on the patient population) in which they're captured. As these metrics evolve, the relationships between medical homes and specialty practices will necessarily need refinement; also, metrics will need to be developed that reward appropriate inclusion of specialty medicine in targeted patient populations.

Closing thought

The medical home of the future likely will be a refinement of the assorted pilots and programs currently under way. We remain supportive and optimistic about its potential, as well as realistic that answers to its challenges will not be quickly available.

The medical home 2.0 is an innovation whose time has come. The confluence of rising health costs, an aging and less healthy population, payment reforms shifting volume to performance, and increased access to clinical information technologies that enhance coordination and connectivity between care teams and consumers suggest that the medical home will likely be a permanent, near-term fixture on the U.S. health care landscape.

Credible organizations are making strides to bridge the gap in the quest for valid and reliable PCMH metrics.



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