



Tomorrow's Doctors, Tomorrow's Cures®

Moving the Medical Home Forward:

Innovations in Primary Care Training and Delivery

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Association of
American Medical Colleges

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Introduction

This report highlights academic practices that have successfully incorporated key attributes of the “Patient-Centered Medical Home” (PCMH) model of care into their delivery system while serving as a training site for medical residents and other health professionals. The PCMH is a concept of patient care that, while not explicitly defined, is widely recognized by various stakeholder groups as a model that contains, at minimum, the following core principles:

- Around-the-clock patient access to medical consultation;
- An ongoing relationship with a personal care provider;
- Respect for patients’ cultural and religious beliefs;
- A comprehensive approach to care; and
- Coordinated and/or integrated care among providers and community services.

While there is an increasing amount of empirical evidence supporting the efficacy of the medical home model, there has been little examination of its incorporation in teaching settings. In early 2010, the AAMC in collaboration with representatives of the Society of General Internal Medicine (SGIM) and the American College of Physicians (ACP) designed a survey that was distributed to AAMC member institutions asking participants to identify residency programs that have integrated into their care system infrastructural or workforce transformations commonly associated with the medical home. Seven high-performing practices were selected based on survey responses and through information attained by the AAMC. Members of the project team conducted site visits at five of the sites over May and June of 2010 and conducted phone interviews with representatives from two of the profiled institutions. During the site visits and phone interviews, the project team spoke with residents, department leaders, clinic and residency program directors, and other key members to better understand the system processes and observable outcomes related to working and training within a patient-centered practice model. For each profiled site, project investigators focused on a particular essential feature commonly associated with the medical home model. The institutions, their associated department, and attribute highlighted in this report are listed below:

Institution	Department / Facility	Highlighted Attributes
Alpert Medical School at Brown University	Family Medicine / Family Care Center	Enhanced Access and Communication
University of California at Davis School of Medicine	Internal Medicine / Sacramento County Primary Care Center	Cultural Competency and Continuity
University of California at Los Angeles School of Medicine	Pediatrics / Mattel Children’s Hospital	Patient, Family Engagement
University of Cincinnati School of Medicine	Internal Medicine / Hoxworth IM Residency Practice	Health Information Technology and Quality Improvement
East Carolina University Brody School of Medicine	Family Medicine / Family Care Center	Investing in the Primary Care Pipeline
Texas Tech University Health Sciences Center School of Medicine at the Permian Basin	Obstetrics and Gynecology / Odessa Campus	Departmental Transformation to Medical Home Model
Tulane University School of Medicine	Internal Medicine / Tulane Community Health Center at Covenant House	Comprehensive, Team-Based Care

Background

In recent years, the “medical home” has gained significant momentum among health professionals, primary care advocates, and policy-makers as a model that could potentially improve the quality of care and reduce health care-related expenditures.

Forty years ago, the American Academy of Pediatrics introduced the term “medical home” into the healthcare nomenclature. Over time, the term has evolved to describe a concept or model of care delivery rooted in functions similar to those described by the Institute of Medicine (IOM) in its 1996 report “*Primary Care: America’s Health in a New Era.*” The IOM report defines primary care 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 as sustained partnership with patients, and practicing in the context of family and community.”

Eleven years later, in 2007, four primary care societies embraced the concept of a medical home as an approach to providing comprehensive primary care and adopted the “Joint Principles of the Patient-Centered Medical Home,” that provided a formal definition¹ of the model. These four societies were the American Academy of Pediatrics (AAP); the American College of Physicians (ACP); the American Academy of Family Physicians (AAFP); and the American Osteopathic Association (AOA). In 2008, the Association of American Medical Colleges (AAMC) released a position statement supporting the medical home model, while indicating the need for further research and evaluation to better understand its optimal form and function.² In an accompanying press release, AAMC President and CEO Darrell G. Kirch, M.D., noted “We believe the medical home model holds great promise for improving Americans’ health by ensuring that they have an ongoing relationship with a trusted medical professional.”³

In response to growing interest in the concept from patients, providers, insurers and other stakeholders, numerous organizations have developed guidance and tools that can be used to measure a practice’s level of PCMH adoption. Perhaps the most recognizable qualification tool – the National Committee for Quality Assurance’s (NCQA) Physician Practice Connections-Patient-Centered Medical Home (PPC-PCMH) – measures a practice’s PCMH “functionality” based on standards encompassing the core elements often cited as essential to providing patient-centered care. According to the NCQA, as of March 2010, nearly 450 practices in 24 states and the District of Columbia have been recognized as PPC-PCMH medical homes.⁴ Payors are increasingly investing in the medical home through a variety of demonstrations. As of June 2010, 20 states have implemented or are sponsoring medical home projects with their Medicaid managed care populations.⁵

The medical home has been tested in a variety of environments, including teaching settings. The early published successes of academic institutions such as Duke University Family Medicine, the Mayo Clinic and Geisinger Health Systems medical home program have been significant in helping to demonstrate the benefits of patient-centered practice redesign to the public. Such early adopters provide evidence of the medical home model’s value, whether measured through improved quality outcomes, patient and provider satisfaction or reduced downstream health care expenditures associated with emergency department and inpatient utilization.

Innovations in Academic Ambulatory Care Delivery Survey

In January 2010, the “Innovations in Academic Ambulatory Care Delivery” survey was distributed to members of the AAMC Group on Faculty Practice (GFP). The survey was designed with the help of investigators from the American College of Physicians (ACP) and the Society of General and Internal Medicine (SGIM). The survey examined the infrastructural and workforce strategies of academic practices that have incorporated elements commonly associated with the PCMH model in the ambulatory care delivery system and resident training programs. The survey contained questions along major themes commonly associated with the PCMH: enhanced access and communication; patient-centered team-based care; practice organization; and use of health information technology (HIT).

The survey was sent to representatives from each of the 126 member institutions represented in the AAMC Group on Faculty Practice (GFP) – a professional development group composed of senior academic faculty practice plan leadership. Academic faculty practice plans are the organizations that provide business operations and administrative support to affiliated medical school faculty physicians. The survey included instructions to complete or forward to colleague(s) best suited to respond on behalf of their institution. Participants were asked to answer the survey on a site/clinic-specific level. Institutions were able to respond for multiple clinics. A total of 36 responses were received from 32 (23.9%) institutions. Of those respondents who indicated the specialties of participating residents, approximately 45 percent selected family medicine and 34 percent general internal medicine. The remaining respondents included general pediatrics, OB/GYN, and other internal medicine subspecialties.

Notable Findings *(All percentages based on total valid survey responses)*

Enhanced Access and Communication

- 92 percent of respondent clinics leave blocks open in their daily schedules for unscheduled acute care visits.
- 88 percent of respondent sites have incorporated 24/7 clinician phone availability to their patients.
- More than 25 percent of respondents indicated the use of EHRs and/or Web-based portals to communicate with patients (in addition to face-to-face visits). Phone and e-mail were used on a more frequent basis.

Team-Based Care and Care Coordination

- 60 percent of respondents indicated that established patients with chronic conditions are seen by the same provider at least three-quarters of the time.
- 76 percent of respondents deliver some form of team-based care. These teams consist of physician and non-physician clinicians as well as care coordinators, social workers, PharmDs, and nutritionists.
- EHR is the primary format for how information is shared between practices and hospital (61.1%).
- Patients with chronic conditions are most commonly managed through an EHR and electronic registry.

Quality Monitoring and Improvement

- All respondents (100%) currently measure patient satisfaction through soliciting patient feedback, with nearly three-quarters (72%) meeting at least quarterly to review quality performance.
- 88 percent of respondents indicated that their clinic has either fully or partially implemented evidence-based protocols for patient care.
- 68 percent of respondents have clinical faculty that participate in either public or private physician quality reporting programs.

Health Information Technology

- Participants indicated near unanimous access to EHR technology (96.2%)—and in all but one of these sites, the EHR serves as the patient’s primary medical record.
- Condition-specific registries are used at 44 percent of the respondent’s sites.
- The EHRs used by respondents have fully implemented patient demographics, medication lists, and clinical notes. Near-universal implementation of problem lists and medication history/follow-up (91.7% and 87.5%, respectively). All, when implemented, are used regularly.
- Over 50 percent of respondents have fully implemented order entry, results management, and clinical decision support tools such as drug warnings, out-of-range test levels, and information resources. Over half are in the process of, or are considering adding clinical reminder and disease registry components to their EHRs.

Participating Institutions

Institutions	Institutions (cont.)
Alpert Medical School of Brown University	University of California, San Francisco, School of Medicine
Beth Israel Deaconess Medical Center, Harvard Medical School	University of Chicago Division of the Biological Sciences The Pritzker School of Medicine
East Carolina University Brody School of Medicine	University of Cincinnati College of Medicine
Emory University School of Medicine	University of Colorado School of Medicine
Indiana University School of Medicine	University of Florida College of Medicine
Louisiana State University School of Medicine at New Orleans	University of Hawaii, John A. Burns School of Medicine
Joan C. Edwards School of Medicine at Marshall University	University of Illinois College of Medicine
Meharry Medical College	University of Minnesota Medical School
Mercer University School of Medicine	University of Missouri Kansas City School of Medicine & Truman Medical Center
Mount Sinai School of Medicine	University of Medicine and Dentistry of New Jersey – Robert Wood Johnson Medical School
Medical University of South Carolina	University of Utah School of Medicine
Ohio State University College of Medicine	University of Texas Southwestern Medical Center
Oregon Health and Science University	University of Vermont School of Medicine
Rush University Medical College	University of Washington School of Medicine
Stanford University School of Medicine	Wayne State University School of Medicine
Tufts University School of Medicine	University of Wisconsin School of Medicine and Public Health
Tufts Medical Center	



BROWN
Alpert Medical School

**Alpert Medical
School of Brown
University**
Department of Family
Medicine

Former family
medicine residents
have established
innovative micro-
practices throughout
Rhode Island or have
joined group practices
that incorporate
FCC principles such
as enhanced access
and group visits for
patients with chronic
conditions.

“Sick today, seen today.” One of the key principles of an exemplary primary care practice is having a provider accessible to the patient when needed. At Memorial Hospital of Rhode Island’s Family Care Center (which serves as the primary continuity clinic for the Alpert Medical School of Brown University family medicine residents and core faculty), the introduction of enhanced access in 2004 means, patients are seen the same day they call for an appointment. Enhanced provider accessibility does not end once an appointment is scheduled. The Family Care Center (FCC) has developed innovative methods of communication that have directly improved practice performance and quality.

The FCC is home to Brown University’s Center for Primary Care and Prevention, a collaborative effort with Memorial Hospital of RI. The Primary Care Center unites patient care, medical education, and research, serving as an interdisciplinary training site for family medicine, general internal medicine, pharmacy, and mental health. Rhode Island is fast becoming a living laboratory for the patient centered medical home as a result of the state Office of the Health Insurance Commissioner’s Rhode Island Chronic Care Sustainability Initiative (CSI-RI). This multi-stakeholder program was designed to align quality improvement goals and financial incentives to make primary care more effective for patients and more appealing to physicians through enhanced payment to primary care providers. Through this program, participating practices like the FCC receive a modest per-member-per-month fee for providing additional services not otherwise reimbursable under Medicare fee-for-service. Additionally, each practice is provided with a nurse care manager to provide patient care management services. In return, the FCC must agree to study three chronic conditions that have the greatest impact on their community: diabetes, coronary artery disease, and depression. According to Dr. Jeffrey Borkan, Family Medicine Department Chair, Rhode Island now contains one of the highest patient-centered medical home practices per capita of any state.

Before 2004, open access scheduling had rarely if ever been implemented in an underserved, teaching environment in Rhode Island. Since its introduction in 2004, no-show rates have declined and both patient satisfaction and continuity measures have improved. FCC staff schedule each patient with a personal clinician for continuity of care purposes. Residents are included in the schedule. Resident physicians experience approximately 75 percent continuity with patients for non-acute visits and over 80 percent with attending physicians. Over 98 percent of patient visits are set within the immediate care team. Two blocks of time – one in the morning, one in the afternoon - are set aside in each physician’s schedule. Patients are able to reserve a time up to 5 days in advance. This “adds flexibility to the scheduling of residents on rotation.” Acting as the primary resident training site, Family Medicine leadership saw the importance of using the FCC to model new delivery models to trainees. Dr. Borkan notes that “residents have been both partners in and part of the push in advancing the patient-centered attributes utilized at the Family Care Center.”

Training in an innovative environment has impacted the way former residents practice once they are in community settings. Taking what was learned during their residency training at the FCC, former family medicine residents have established innovative micro-practices throughout Rhode Island or have joined group practices that incorporate FCC principles such as enhanced access and group visits for patients with chronic conditions. Such results affirm family medicine faculty intentions, but do not

necessarily come as surprising considering the impact they play in helping expose trainees to such elements throughout their continuity experience at the FCC.

In 2003, the FCC began offering interdisciplinary group medical visits to patients with diabetes. Faculty quickly realized the power of these forums for the patient and expanded offerings to include other chronic conditions. Recognizing the educational value in these visits, residents routinely participate in the sessions and are required to lead a group visit as part of their continuity rotation. Nutritionists and physical therapists that offer particular expertise are often invited to help lead focused discussions. During these visits, several patients meet with their care provider to review recent lab results and discuss self-management goals. Patients are coached using motivational interviewing techniques at the sessions, and providers note patients in turn routinely employ similar techniques amongst one another. At the end of the visit, patients are provided with a summary sheet of their visit which details a self-management regimen to follow between group sessions.

In 2009, team members began an experimental program testing a personal health record (PHR) for patients with certain chronic conditions. Accessible through a patient Web portal, the PHR is an untethered interactive health record for patient-provider communication and provides self-management education modules for patients with diabetes, hypertension, chronic obstructive pulmonary disease (COPD), and coronary artery disease (CAD)

Group visits are just one of several vehicles implemented at the FCC that empower patients with the information and self-management tools necessary to make better informed care decisions. Having a fully implemented EHR at the FCC for nearly 10 years, faculty and staff are adept at using the system to capture clinical data and manage patients on both individual and population-based levels. In 2009, team members began an experimental program testing a personal health record (PHR) for patients with certain chronic conditions. Accessible through a patient Web portal, the PHR is an untethered interactive health record for patient-provider communication and provides self-management education modules for patients with diabetes, hypertension, chronic obstructive pulmonary disease (COPD), and coronary artery disease (CAD). Providers are able to monitor patient “engagement” by capturing the number of times a patient views the site and clicks on informational buttons. To assist patients with limited computer proficiency, as part of this trial, the FCC has begun utilizing “patient Web navigators.” The patient Web navigators, while not from clinical backgrounds, are trained in the fundamentals of motivational interviewing and receive basic instruction on chronic medical conditions like hypertension prior to working with PHR patients. Once a navigator, these new members of the care team provide basic case management assistance through electronic monitoring of patients and can schedule follow-up visits with their personal clinician. Though still in its experimental phase, the program has proven so successful there are plans to expand to 70 affiliated practices in the future.

Providing accessible, patient-engaged care is crucial to developing an exemplary primary care practice. At the FCC, members of the Family Medicine team have embraced practice innovation for more than 10 years while training medical residents to incorporate similar models once practicing in the community. Nearly two thirds of the family physicians in Rhode Island were trained at this one program over the past 35 years. Though the need for primary care physicians is rising dramatically, it is hoped that with more than 50 percent of Family Medicine graduates practicing within one hour of Brown University, the State will be spared a shortage of 21st century primary care leaders.

UC DAVIS

SCHOOL of MEDICINE

University of
California, Davis
School of Medicine
Department of Internal
Medicine



The TEACH Team: Dr. Ratanasen, Dr. Denman, Dr. Pitman, Dr. O'Keeffe, Dr. Allen, Dr. Giedt

As the United States becomes more socially, culturally, and linguistically diverse, it is increasingly important that physicians have the skills necessary to care for patients in a culturally sensitive manner. In an effort to increase interest in general internal medicine (GIM) careers while exposing their medical students and residents to a vulnerable, culturally complex patient population, the University of California, Davis (UC Davis), Department of Internal Medicine partnered with the Sacramento County Department of Health and Human Services in 2005 to create the Transforming Education and Community Health (TEACH) Program.

The TEACH Program, funded through a federal Health Resources and Services Agency (HRSA) grant, was created as an individualized track for selected third-year residents interested in providing primary care to the local uninsured population. Each year, five residents (approximately 20% of the UC Davis senior internal medicine IM residency class) are chosen to participate in the TEACH Program. Interested residents apply in their second postgraduate year and are selected by a committee of faculty and TEACH Program graduates. TEACH residents provide continuity of care to their patients across settings by spending time on a dedicated inpatient service at UC Davis Medical Center and in a Sacramento County health system multidisciplinary teaching clinic. In all, TEACH residents spend 31 weeks of their third postgraduate year in a community ambulatory setting.

Uninsured patients admitted to a dedicated TEACH inpatient service are, upon discharge, assigned to a resident/faculty pair (most often the same resident who cared for them in the hospital). Each patient receives a business card with their doctor's name and the TEACH clinic phone numbers, and is given an appointment in the TEACH clinic. The team census is limited to eight patients to facilitate personalized care. The inpatient team includes one TEACH resident, one third-year medical student, and a supervising TEACH faculty. High numbers of TEACH patients suffer

from co-morbid mental and physical illness. Common patient diagnoses include diabetes, acute and chronic pain, hypertension, depression, and substance abuse.

Although the Sacramento County Clinic lacks an electronic medical record, TEACH residents care for their individual patient panels and coordinate care using a patient-centered, multidisciplinary approach that includes a dietician, clinical pharmacist, multilingual interpreters, and other clinical staff. A recent study on the quality of diabetes care in the TEACH clinic showed TEACH residents outperformed managed care plans in process (testing A1c, fasting lipid levels) and outcome (hypertension control, A1c and LDL management) quality measures.

“The program [TEACH] has provided me with the skills to adapt to the needs of underserved patients with care plans that specifically address socioeconomic, cultural, or psychological barriers.”

—Milin Ratanasen, M.D.

Sacramento is an ideal training ground for the TEACH Program given the county’s rich diversity. TIME magazine and the Civil Rights Project of Harvard University recently identified Sacramento as the most racially/ethnically integrated major city in America. Approximately half of TEACH patients are Hispanic/Latino or African American, and nearly one in five of Sacramento residents are foreign-born. On any particular day, you may find TEACH patients speaking Spanish, Vietnamese, Hmong, or Russian.

To prepare students and residents to be culturally sensitive care providers, other longitudinal community experiences have been integrated into the UC Davis curriculum. The Communities and Physicians Together (CPT) Program helps teach family medicine, internal medicine, and pediatric residents to become better community advocates for health improvement through partnering with local community collaboratives. All internal medicine interns participate in a one-week community immersion experience including required attendance at county board of supervisor’s meetings, visits to minority community centers, and evening “ride-alongs” with Sacramento police. Second- and third-year residents then design projects based on the needs of the community they identified as part of their involvement in the CPT program during internship. In addition, educational series on cultural humility and cross-cultural communication have been introduced into the residents’ didactic curriculum. Lessons gleaned from this community-focused curriculum help TEACH residents better understand the community and its unique needs. “The benefits of CPT have been bidirectional,” says Dr. Tonya Fancher, internal medicine associate program director. The TEACH residents are increasingly involved in community advocacy, outreach, and education. For example, public testimony from TEACH residents recently helped to stay proposed clinical service cuts due to massive state budget deficits.

Leaders of the UC Davis School of Medicine and TEACH program have made recruitment of underrepresented in medicine (UIM) residents an institutional priority. UC Davis internal medicine faculty actively participate in California medical school fairs, residency fairs, and UIM outreach events. Dr. Mark Henderson, Internal Medicine Program Director and Vice Chair, has made efforts to increase awareness of the TEACH Program among Latino student groups. As a result of these efforts, 4 Latino medical students (16% of the entering intern class) matched into the residency program in 2008 and 3 Latinos (12%) matched in 2009 – up from zero in the 2006 and 2007 entering classes. In the past two years, 60 percent of TEACH residents have been UIMs (4 Latinos and 2 African Americans). Largely due to interest in the TEACH program, the overall percentage of UIMs in the larger UC Davis internal medicine residency has increased to 16 percent.

TEACH residents report greater improvements in managing chronic illness, global job satisfaction, and impact on the community. In the words of program graduates, the strengths include: “better continuity of care and stronger bonds with patients” and “exposure to more patients with undiagnosed illness.” According to TEACH resident Milin Ratanasen, M.D., “The program [TEACH] has provided me with the skills to adapt to the needs of underserved patients with care plans that specifically address socioeconomic, cultural, or psychological barriers.” In the year following graduation, 80 percent of TEACH graduates choose general internal medicine (GIM), in sharp contrast to the national average for categorical internal medicine program graduates, which is approximately 33 percent.⁸ Of TEACH graduates who have been in practice for more than one year, 55 percent remain in GIM and 35 percent are practicing in underserved communities.



Dr. Tracie Harris, TEACH Clinic Director, comforts one of her patients in the hospital

Given the success of the TEACH Program in attracting and influencing residents to pursue general internal medicine careers, it has received attention from regional and national academic organizations (including Society of General Internal Medicine, American College of Physicians, Association of Program Directors in Internal Medicine, Association of American Medical Colleges), as well as from groups influential in shaping health care policy. The RAND Corporation and the Medicare Payment Advisory Commission (MedPAC) both have visited UC Davis in recent months as part of a project to explore innovative GME programs that are preparing a health workforce to care for diverse populations with chronic illness. Through a curriculum that strengthens community partnership opportunities, provides extended, uninterrupted ambulatory

experiences, and allows for patient-physician continuity across inpatient and outpatient settings, the TEACH program has been a leader in facilitating culturally competent care.

Mattel Children's Hospital **UCLA**

University of
California, Los
Angeles David Geffen
School of Medicine
Mattel Children's
Hospital
Department of Pediatrics



Dr. Klitzner with a Medical Home patient and a former pediatric resident

Patients with complex medical conditions often face massive challenges navigating the health care system. These patients routinely see multiple providers, and care can become easily fragmented between settings. The challenges become even more daunting for patients when combined with financial and language barriers. In 2003, a program that delivers continuous, comprehensive, family-centered care to children with complex diseases was started at a resident education clinic. Designed using American Academy of Pediatrics (AAP) guidelines, the program has achieved measurable success through reduced patient utilization of the Emergency Department (ED). The program has also proven successful by empowering patients and their families through the incorporation of care elements that promote greater family-provider interaction, increase accessibility to personal health information, and allow for better coordination among health care services.

The Pediatric Medical Home Program at UCLA is the brainchild of Dr. Thomas Klitzner, a UCLA pediatric cardiologist who started the process in 2001 by securing a \$6,000 American Academy of Pediatrics (AAP) Community Access to Child Health medical home planning grant. This grant allowed for the creation of an executive committee to help plan the project. With the added support of an annual \$50,000 Healthy Tomorrow Partnership for Children grant, the clinic secured resources for a five-year pilot program. Dr. Klitzner purposely chose to test the care model on a vulnerable, underserved population, hypothesizing that this population had the highest chance of improved outcomes. To be eligible to participate in the pilot, the patient needed to be a Medicaid beneficiary, reside in Los Angeles County, receive primary pediatric care in the Pediatric Continuity Clinic at the Mattel Children's Hospital UCLA, and have diagnoses for which two or more different pediatric subspecialists were required regularly. Forty-three patients were ultimately eligible to participate in the pilot. Recognizing a tremendous teaching opportunity by exposing residents to complex patients with a more comprehensive, coordinated care approach, Dr. Klitzner chose to test the pilot in a resident training clinic. With assistance from grant funding, a specialized resident training curriculum based on medical home principles was designed to compliment residents' clinical experiences.

From the outset, Pediatric Medical Home patient visits were structured differently than traditional clinic visits. Accompanied with their family, each patient received an initial 60-minute session with the medical home team that included both clinical and social evaluations. Subsequent patient visits are scheduled for 40 minutes, allowing providers adequate time to provide medical services, review the “to-do” list, and ensure that both medical and social issues are being appropriately addressed. Medical and nonmedical “to-do” lists were created, and the family received a notebook titled “All About Me.” This binder provided a single, consolidated resource for all patient medical information. At this initial meeting, patients were assigned a “family liaison” to serve as a health “navigator” and as the family’s first point-of-contact. The liaison’s role was conceived as largely administrative—assisting families in setting up and organizing appointments, dealing with insurance issues, and providing availability via telephone—but evolved to be critical to the pilot’s success. According to Dr. Klitzner, the family liaison became the focal point of the medical home team and a leader for patient and family empowerment. Among patient’s families, the liaison was commonly referred to as “1-800-Yolanda” (utilizing the name of the first family liaison) due to the frequency and ease of contact and ability to assist each family. Bilingual and trained as a medical translator, the family liaison attended nearly all medical appointments with the families, serving as a translator and forming a trusting relationship between the family and the medical team.

Upon the conclusion of the five-year grant, the residents came to Dr. Klitzner claiming they were learning far too much from the program for it to be discontinued. With funding obtained from the Skirball Foundation and the support of the department of pediatrics at Mattel Children’s Hospital UCLA, it was possible to continue the program.

Initially, the Pediatric Medical Home Program at UCLA was viewed solely as a pilot project to assess the effect on patient health outcomes and resident learning, rather than an ongoing pediatric medical home. However, the program became extremely popular with residents. Upon the conclusion of the five-year grant, the residents came to Dr. Klitzner claiming they were learning far too much from the program for it to be discontinued. With funding obtained from the Skirball Foundation and the support of the department of pediatrics at Mattel Children’s Hospital UCLA, it was possible to continue the program. According to Dr. Jennifer Kalisvaart, former chief resident for UCLA’s Department of Pediatrics and participant in the medical home project, medical students and residents have limited exposure to the concept upon entering a medical home practice, so the combination of hands-on

training with didactic curriculum proved vital towards educating residents to be medical home providers. The added time spent with each provider, effective coordination among settings plus the invaluable assistance of a family liaison has had a tremendous effect on how the family views patient care in the medical home. Describing the effect of the program on the Medical Home families, Dr. Kalisvaart notes the families clearly understand that “my doctor really cares about my child, my family, and our well-being.”

Each month, the UCLA Pediatric Medical Home hosts a Parent Advisory Group. All medical home parents are welcome to attend. At these monthly group meetings, speakers are invited to talk with parents about a variety of topics associated with their children, including specialized education plans, emergency preparedness, stress management, and health and wellness issues. Informal feedback is continuously

gathered at these meetings and is used to generate small quality-improvement projects. More formal surveys are distributed to medical home families so that they can give leaders anonymous feedback on the program. As Dr. Leslie Hamilton, medical director of the Pediatric Medical Home Program explains, “The exciting part of participating in these meetings is seeing how parents support each other, watching the parent of a disabled teenager give advice to a parent of a medically fragile infant, watching one parent deeply empathize with another parent about the struggles of navigating the school system with a disabled child, and hearing how a more experienced parent will teach a newer parent about HOW to advocate for their child.”

In a study conducted by Dr. Klitzner and colleagues, data showed a 55 percent reduction in emergency department (ED) visits among the participating patients, a statistically significant figure.

There was also a slight increase in scheduled outpatient visits, urgent care visits, and hospital admissions, and a slight decrease in average hospital days and average length of stay, though none of these results was statistically significant.⁹ Perhaps not surprisingly, patient satisfaction scores for families participating in the pilot program had average scores higher than those of the typical family with a child who has special health care needs. Spanish-speaking families scored just as high as or slightly higher than their English-speaking counterparts in these surveys.

While former residents have not been formally surveyed about the program, the program’s impact on their training and clinical experiences is clear. As Dr. Jessica Lloyd, a former participant explains: “As a resident, working with the medical home patients was an invaluable experience. I learned a great deal about how to care for children with complex medical needs. In the setting of a general pediatric clinic, I learned how to better integrate care among multiple subspecialties. Besides the medical issues, I gained knowledge about the social aspects of caring for children in the medical home as well as providing care within the current health care system.”

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The Long Block 4 Team at their weekly meeting

At 12:15 PM each Monday afternoon, members of the University of Cincinnati (UC) internal medicine team meet in the preceptor room. Represented at these meetings are the full spectrum of care providers, staff, and administrators associated with the UC Hoxworth Ambulatory Center, the primary internal medicine residency clinic. The meeting agenda may vary slightly by week, but the focus always remains the same: improving patient care. Meetings always begin with a patient story – an opportunity for the team to share an interesting or difficult learning experience associated with a particular patient encounter. Care processes are walked-through, tips are shared, and the team as a whole gains from the discussion. Quality improvement education is rooted throughout the meeting. If the providers and staff who make up the Hoxworth Ambulatory Center act as the clinical quality engine, data serves as the fuel.

In 2005, Dr. Eric Warm, UC College of Medicine Associate Professor and internal medicine program director, grappled with a strategy to improve the ambulatory experience for patients and residents. Quality, satisfaction, financial, and volume data collected from their EHR and registry illustrated poor patient care quality measures compared to institution peers and poor patient satisfaction scores. Internal medicine residents rated their ambulatory experiences of lower value than their other clinical rotations. Connecting poor education scores with poor clinical outcomes, Dr. Warm and a small team of colleagues redesigned their educational experience to provide an elongated ambulatory rotation to improve physician-patient continuity and clinical care outcomes. In 2006, the Accreditation Council for Graduate Medical Education (ACGME) began the Educational Innovations Project (EIP), a program that facilitates innovative Internal Medicine educational training programs. This program allowed the project team to think outside the traditional residency educational constraints. With the exception of residency caps and duty hours, the team was allowed to “blow up” features of their residency program.

The key innovation included in the residency redesign has been the creation of the “ambulatory long block,” a year-long continuous ambulatory experience that increases resident time in an outpatient setting, decreases resident patient panel size, and fosters the use of clinical physician and non-physician mini-teams. Following the model of a “traditional” residency the first 16 months, residents in the long block spend the

entire year in an ambulatory setting, whereby they see patients an average of three half days per week. The extra time in the clinic allows long-block residents to have the ability to develop ongoing relationships with their patients, providing for an improved patient-resident relationship through true continuity. The rest of a resident's weekly schedule is spent in elective sessions, with one morning each week reserved for didactic education on an ambulatory topic.

Nurse-led mini-teams were created, which, along with support from members of the in-house social work and pharmacy departments, allowed residents to be inculcated in a team-centric culture. This culture extends to educational and training settings where residents and nurse staff routinely learn and train in quality improvement techniques together, such as the Institute for Healthcare Improvement's (IHI) Plan-Do-Study-Act methodology.

The residency program redesign also prompted difficult leadership decisions regarding new practice staffing models. Most of the medical assistant staff was replaced with fewer, but higher-skilled RNs and LPNs. This change has had a dramatic effect on the dynamics of the practice. Nurse-led mini-teams were created, which, along with support from members of the in-house social work and pharmacy departments, allowed residents to be inculcated in a team-centric culture. This culture extends to educational and training settings where residents and nurse staff routinely learn and train in quality improvement techniques together, such as the Institute for Healthcare Improvement's (IHI) Plan-Do-Study-Act methodology.

Now in its fourth year, what truly makes the long-block successful is the use of data as a tool to set goals and measure improvement. Starting in 2005, the resident practice began collecting data on quality, patient satisfaction, volume, and financial measures through their EHR and disease registry. Performance reports are generated for the entire Hoxworth

team and are shared during the weekly all-hands meetings. The reports feature monthly aggregated data on targeted conditions such as diabetes, hypertension, and preventive measures. This data is used to assess performance at both peer and practice levels, including Hoxworth Clinic vs. the University of Cincinnati health system, resident practice vs. faculty practice, and current long-block residents vs. previous long-blocks residents. Residents are also measured against one another, each receiving a score and ranking based on their quality performance compared to peers. When reviewing performance reports at weekly team meetings, instances of high performance are shared with the group, giving residents an opportunity to discuss and together develop both personal and practice-wide quality and process improvement strategies.

The UC Internal Medicine ambulatory long-block residency is measurably successful on a number of fronts. Perhaps not surprising, resident satisfaction with the program has markedly increased since inception of the long block. Scores related to time for learning, ability to focus in clinic without interruption, personal reward from work, and relationship with patients have each improved. The patient experience—measured through data collected in external and internal surveys—has improved for both the practice and provider. For patients with chronic conditions such as diabetes, the Hoxworth residency practice routinely outperforms the faculty practice and the UC Health Alliance on standardized measures. Process prevention measures have also significantly improved.

The Hoxworth residency practice—through a concerted data-driven effort facilitated by robust HIT systems—achieved an improved educational environment through an enhanced and prolonged ambulatory residency experience.



The Brody School of Medicine at East Carolina University Department of Family Medicine



Rendering of New Family Medicine Center—slated to open in early 2011

The Brody School of Medicine at East Carolina University was created with primary care as its core mission. Located in Greenville, North Carolina, the Brody School of Medicine was established in 1977 in part as an effort to increase the supply of primary care physicians in the state and improve the health status of eastern North Carolinians – an area comprised of 29 counties that experience a considerable shortage of health

care providers. To meet this need, medical students are exposed early in their education and training to the primary care specialties, and, in no small part due to these efforts, Brody has enjoyed tremendous success graduating medical students who go on to pursue careers in primary care. In the three years prior to October 2009, an average of nearly 20 percent of Brody School of Medicine graduates enter a family medicine residency program. In 2010, the School was recognized by the American Academy of Family Physicians (AAFP) as a Program of Excellence.

The institutional commitment to primary care stems from the School's admissions criteria. Upon its founding, Brody leadership agreed to a policy of admitting only North Carolina residents into the school. In an effort to retain physicians upon graduation, Brody uses data on the factors that may determine student specialty choice and desire to stay in state upon completion of training to help support their admissions policy. The School's emphasis on producing and retaining primary care physicians is evident in the numbers: of the 308 family medicine residency program

graduates since 1980, 60 percent have stayed in North Carolina, half of whom stayed in the eastern part of the state. Brody's financial investment in primary care is apparent through construction of the new Family Medicine Center, which is expected to open in early 2011. Located on the main Greenville medical campus, the facility will also house a geriatrics center and will serve as a multidisciplinary training site for family medicine residents and other health professionals.

Student-led organizations, like the Brody Family Medicine Interest Group, (FMIG) attract a great deal of interest from medical students, with over 100 having participated in the group during the 2009-2010 school year). The Brody FMIG is

The School's emphasis on producing and retaining primary care physicians is evident in the numbers: of the 308 family medicine residency program graduates since 1980, 60 percent have stayed in North Carolina, half of whom stayed in the eastern part of the state.

run by students and managed by a faculty advisor who serves as an assistant to the group and helps facilitate the group's activities. These activities include community outreach opportunities, professional leadership development workshops, and monthly FMIG lunch talks.

The monthly lunch talks serve as effective forums for exposing medical students to family medicine and to discuss how the specialty enhances primary care. Each lunch talk covers a new topic and are open to all medical students in the hopes of giving those who have not considered family medicine a realistic and positive view of primary care as a career option. These monthly FMIG meetings allow students to speak with family medicine doctors about their personal experiences in training and in practice as primary care physicians. Participating physicians include members of the School of Medicine faculty as well as community physicians, emphasizing the diversity of opportunities available to students interested in entering family practice. Students get information on what a "typical day" as a family physician looks like as well as expectations once in a residency program.

The interest group holds talks that focus on both local and international themes. Speakers from the North Carolina Department of Rural Health participated in past meetings discussing the benefits of practicing family medicine in rural areas. During these sessions, speakers helped inform students of state student loan/debt repayment opportunities available for working in specific underserved areas while familiarizing students with state provider recruitment services. A family medicine graduate from the Brody School of Medicine was invited to speak about his experiences as a family physician in an international setting and discussed the utility of family medicine on a global scale and the unique benefits offered to family physicians deciding to practice part time or full time in this capacity.

Brody's dedication to primary care is evident in its embrace of the medical home concept in practice. Introduction to the medical home model typically begins during a medical student's clerkship and continues throughout a primary care resident's training. The Family Medicine Center—the FM physician practice and primary continuity clinic for family medicine residents—has applied and is expected to be recognized as a NCQA tier 3 Patient-Centered Medical Home (PCMH). The road to NCQA recognition was aided considerably through their involvement in the I3 Collaborative, a community of faculty from primary care teaching programs in North Carolina, South Carolina, and Virginia. This collaborative began in 2009 as a forum to promote practice transformation and assist participating practices in achieving NCQA PCMH recognition. The collaborative has grown to include 25 primary care residency programs with a total patient population of 1.2 million. I3 meets quarterly to share best practices in research, curricular innovation, and integration of the patient-centered medical home in medical education as well as study the outcomes of practice transformation in academic teaching programs.

An institutional commitment to primary care; medical student-led promotion of primary care; and the adoption of patient-centered medical-home principles in practice and in curriculum have helped make the Brody School of Medicine an excellent model for peers nationwide.



TEXAS TECH UNIVERSITY
HEALTH SCIENCES CENTER™

Texas Tech University
Health Sciences
Center School of
Medicine at the
Permian Basin
Department of Obstetrics
and Gynecology



Four years ago, Dr. Moss Hampton, newly introduced obstetrics and gynecology department chair and residency program director, saw an opportunity to transform the Texas Tech University Health Sciences Center at Permian Basin's traditional residency program to one that emulates a patient-centered medical home model. At that time, the program had eight residents (recently increased to 12) and a core group of faculty that had been with the academic department for many years. Dr. Hampton felt that changes were necessary to help the department meet the "six core competency" requirements of the Accreditation Council for Graduate Medical Education (ACGME). New ideas of teaching evidenced-based medicine, protocol-driven standards of care, and efficient business practices were instituted as department leaders developed a new clinic model. The model designed utilizes a team-based care approach, where the resident and faculty in concert with all personnel who come in contact with the patient—be it the front desk staff, the nurse, or administrative people—become an integral part of an integrated and connected patient care team. This department reorganization rose out of the frequent patient complaint of "never seeing the same physician." Consequently, an essential goal of the redesign was to provide the patient with a more coordinated, continuous care experience, from a patient's first contact the department, such as scheduling an appointment, through when the patient leaves the clinic and any resulting follow-up that may be needed has been done. While the department leadership feels their system is not perfect, they have observed many positive aspects to this type of resident training, all connected to the "six core competencies" put forth by the ACGME.

For example:

1. **Responsibility to the patient:** Each patient has a clinician (faculty and/or resident) who is THEIR doctor and the patient sees that physician throughout his or her care, whether it be obstetrics or gynecology both as an outpatient and in-patient. The residents take their personal responsibility to the patient to the degree that the patients come to regard the resident as their private physicians. Deliveries and hospital care are often managed by the “private” resident physician. The patients know they can access their department 24/7. A triage nurse, who can assess protocols, and who works in partnership with the residents and faculty is available daily in their clinic. Same day appointments are available, or the patient can be brought in on a non-urgent basis to see any their physicians. The department recently implemented an EHR and is scheduled to unveil a patient portal in the near future which will further enhance their patient-driven model.
2. **Evidenced-based clinical care:** Residents learn early on that their decisions must be backed by evidenced-based guidelines both in clinic and hospital settings. Their evidenced based EHR template features built-in practice guidelines in their outpatient clinic care as does their standardized order sets in the hospital setting. This design serves not only to assist in teaching but also serves a crucial quality assessment and patient safety role in assuring standards of care and error prevention.
3. **Patient tracking system:** Currently, assigned nurses serve the roles of tracking routine lab tests, mammograms, ultrasounds, and abnormal pap smears. These results that are then brought to the attention of the residents, who are supervised by the faculty, who then develop a management plan. Each result must have a sign-off by the faculty and the resident. A “tickler file” system is used to match the request with the result to see who has completed the lab, etc. in a timely fashion. The EHR has allowed for a seamless flow of communication between the healthcare team and for a more efficient follow-up process while improving patient satisfaction and reducing the number of “lost” results.
4. **Care delivery tracking:** The department tracks time to appointment and no-shows. When a resident’s patient does not show for appointment, a written notification by a standardized form is made to that resident who must follow-up on the patient with a written directive to the nurse who attempts to make phone contact with the patient. The follow-through required by the resident allows him or her to see the myriad reasons a patient is a “no-show” and can then direct resources if needed to get the patient seen.
5. **Patient safety initiatives:** They have several ongoing resident projects that track quality of care: for example, an anemia study of pregnant patients and a recent project that tracked use of thromboembolism prevention guidelines resulted in a paper that was resident-presented at a recent American Congress of Obstetricians and Gynecologists (ACOG) clinical meeting.

The department has achieved great success and has proven to be an example for others, as many of the medical home elements first incorporated in the obstetrics and gynecology department are being translated into other departments on the main campus in Odessa.

The idea of a “patient-centered” practice was based on the concept of teaching residents how things functioned in the “real world” of clinical medicine. As part of their day-to-day work, residents learn the resources available in the community that help the largely indigent population they care for. They have regular lectures that teach them the resources available on a local, state and national level. Residents also have didactic sessions teaching them the “Business of Medicine.” The Business of Medicine class is taught by Dr. Virginia Rauth, an OBGYN faculty member and Assistant Dean for Clinical Affairs who has led the school’s Health Information Systems (EHR) implementation. The sessions provide residents with practical information to help with the ever-changing health care climate. The department routinely offers educational sessions with their coding department to ensure that both residents and faculty are coding their visits properly.

“Having a baby is a very monumental time in a person’s life. Having your own doctor there to share the whole experience is comforting for the patient and invaluable to my training.”

— Dr. Danny Bowman

The department has achieved great success and has proven to be an example for others, as many of the medical home elements first incorporated in the obstetrics and gynecology department are being translated into other departments on the main campus in Odessa. Recently, a new multispecialty clinic in the neighboring city of Midland was opened and most of its organizational structure is based on the medical home model.

Four years since instituting the patient-centered transformations, Department leadership has found the common sense approaches and best practices exposed to residents daily are reflected in the core principles of the medical home model. This commitment to patient-centered care has allowed residents like PGY-2 resident Dr. Danny Bowman, “the opportunity to get to know a set of patients on a personal level. I think this is a very strong attribute of this program. Patients have their own physician. While call and work hour restrictions sometimes make this a difficult endeavor, I really think the patients appreciate being cared for in this manner, especially my pregnant patients. Having a baby is a very monumental time in a person’s life. Having your own doctor there to share the whole experience is comforting for the patient and invaluable to my training.” These care principles are not in place only because it is how they chose to structure their residency program, rather how the leadership hopes their entire department—from secretaries, to scheduling staff, nursing, and faculty—cares for its patients. It’s how they would like to be cared for as patients and ultimately is what they want to teach their residents.



Tulane University
School of Medicine
Tulane University
Health Center at
Covenant House
Department of Internal
Medicine



TUHC Leadership: Karen DeSalvo, M.D., Eboni Price-Haywood, M.D., and Leah Berger

In the aftermath of Hurricane Katrina, Tulane University faced the considerable yet critical task of rebuilding the health care infrastructure of New Orleans. Tulane University School of Medicine faculty members Dr. Karen DeSalvo and Dr. Eboni Price-Haywood saw a community need not only for primary care clinics, but also for more robust health centers that provide easily accessible, high-quality community-based primary care to area residents. These essentials became the foundation and the vision for what are now the Tulane Community Health Centers.

Currently, the Tulane Community Health Centers include eight different sites, each serving a vital role in the community and each critical to improving the health of the population it serves. The Tulane University Health Center at Covenant House (TUHC) began in 2005 as a makeshift urgent care clinic providing basic care to residents in the days immediately following Hurricane Katrina. Before Katrina, the Covenant House served as a social-services-run home for at-risk youth. The building that TUHC now occupies was originally a men's dormitory. During the first year the clinic was open, the team shared the two-story building, as the second floor was occupied by tenants renting the upstairs space. From this rather modest start, less than five years later, TUHC is an NCQA-recognized Tier 3 Patient-Centered Medical Home providing comprehensive primary care, community, and mental health services to more than 10,000 downtown New Orleans inhabitants annually, while serving as a training site for Tulane University internal medicine residents as well as a clinical training ground for medical, nursing, social work, public health, and nurse practitioner students.

Approximately 70 percent of TUHC patients lack insurance, so having a single, accessible site for primary and preventive care, plus social, reproductive, behavioral, mental health, and legal services has been extremely important to a community in repair. Though the community's need was abundantly clear – the clinic was seeing 150 people a day without any advertising – there was significant funding required to continue to operate in the area. The clinic initially received philanthropic support from Johnson & Johnson, ultimately obtaining over \$13 million in funding from a variety of donors to operate the site and expand to new service locations, including a gift of \$5 million dollars from the Qatar Katrina Fund. In

In addition to the valuable financial support, reform efforts on the part of the state of Louisiana and the Federal Government contributed to the TUCHC's transformation. The Louisiana Health Care Redesign Collaborative – a state-based health reform stakeholder workgroup – recommended guidelines to redesign the healthcare delivery system to create more accessible, patient-focused models similar to those embodied in the medical home concept. This, coupled with a share of a \$100 million grant from the Department of Health and Human Services that provides a global per-population based payment, has allowed the team flexibility to explore innovative care delivery approaches.

From the clinic's inception, there was a desire on the part of Dr. DeSalvo and team to have the TUCHC serve as medical resident training site. The providers felt it was critical that there be an evident connection between Tulane University School of Medicine and the community through these Centers, to expose residents to these new community-focused, team-based models. Their advocacy has paid off, and since January 2006, TUCHC has been a preferred continuity clinic for internal medicine residents at Tulane University School of Medicine.

“Residents play a key role in helping patients negotiate the community.”

—Dr. Eboni Price-Haywood

While training in an NCQA-recognized patient-centered medical home has profoundly affected the resident ambulatory experience, (there is currently a waiting list of residents who wish to train at Covenant House) their exposure to innovation extends outside the health center walls. The team has partnered with numerous local nonprofit civic and religious groups in efforts to “get our tentacles into the community,” and allow faculty, residents, and medical students to train community health workers through culturally sensitive care management programs. Faculty have noted the quick ability with which residents become “savvy” with the resources available to the community, and, as indicated by Dr. Price Haywood: “Residents play a key role in helping patients negotiate the community.”

What makes this such a desirable care model for patients and staff? The answer can be found in the way care is delivered at Covenant House: using a robust, interdisciplinary team to ensure patients receive high-quality, accessible, community-centered care. Dr. Price-Haywood has researched the factors that play into patients' “shopping” for medical care and what ultimately determines where they choose to go. Comparing data from the Covenant House against other Tulane sites and practices in various parts of the country, aspects that may often go overlooked—such as how a prospective patient was treated while on the phone with the clinic—have an effect on how the practice is perceived to outsiders. Data collected investigating customer service and communication has played a key role in shaping the practice into the truly patient-centered model it is today.

The team-based approach utilized at TUCHC is rooted in having a personal, primary care provider-patient connection. While each patient is assigned to a principal care provider, care is coordinated with the larger clinic and social team of “innovators.” The health center employs a full-time licensed clinical social worker (LCSW) trained in cognitive behavioral therapy, behavioral health and the chronic care model. She provides care management services, including depression screening, pharmacy assistance, nutrition guidance, and performing home visits. Initially not part of the care team, the addition of a Nurse Practitioner (NP) to the Covenant House team has had a tremendous effect on supporting patient self-management. Having worked in numerous clinical settings, the NP was extremely impressed to find a practice that actually uses a holistic patient model as the basis for how they deliver care. The NP,

who also serves as TUCHCs Director of Clinical Services, developed system-wide protocols for hypertension and diabetes care management. She holds weekly clinic, providing additional health education support to patients. These health education offerings have had a considerable effect on improved patient outcomes through quality monitoring.

Through a collaborative care model that integrates mental health and primary care services, providers developed screening and treatment programs and incorporated guidelines into normal work processes.

Since this model has been applied, scores and outcomes tied to depression recognition, follow-up, symptom monitoring, and mental health care delivery have seen quantifiable improvement.

Post-Katrina, one in three New Orleans residents suffered from symptoms of depression. Seeing an enormous unmet community need, Tulane's general internal medicine physicians implemented a population health-based program for depression care at the Community Health Center. Through a collaborative care model that integrates mental health and primary care services, providers developed screening and treatment programs and incorporated guidelines into normal work processes. Since this model has been applied, scores and outcomes tied to depression recognition, follow-up, symptom monitoring, and mental health care delivery have seen quantifiable improvement.

Future Challenges and Opportunities for Primary Care Delivery and Training

This report highlights seven examples of how medical schools and teaching hospitals are successfully adopting and incorporating innovative patient-centered care models into clinical education settings. These new training experiences are being implemented at a time when federal agencies and advisory bodies are increasingly placing pressure on academic medicine to better prepare physicians with the skills necessary to meet the needs the public in a post-reform delivery system.

Over the last two years, the Medicare Payment Advisory Commission, or MedPAC, an influential independent congressional agency that advises the U.S. Congress on issues affecting the Medicare program, has explored the medical education system and the relationship between Medicare payments and teaching hospitals. This included an examination of whether medical residency programs are adapting their curriculum to prepare physicians to practice using a more coordinated, patient-centered approach. To assist with this endeavor, the commission asked the nonprofit think tank RAND Corporation to study this issue. The RAND study, completed in 2009, focused on 26 allopathic and osteopathic internal medicine residency programs. RAND found that residency programs are modifying curriculum to incorporate process and quality monitoring, use of multidisciplinary teams, and interpersonal communication skills (which are tied to specific ACGME core competencies). Additionally, the report indicated that disparities exist among programs in the utilization of health information technology during resident training and amount of exposure to diverse care settings such as community health centers. Summarizing their findings, RAND noted, “Changes in graduate medical education funding policies, accreditation standards, certification exam topics, undergraduate medical education, and investment in research of educational and evaluation strategies could have a significant positive impact on how well internal medicine programs are preparing our nation’s physicians to care for our 21st century population.”¹⁰

Physician training programs are taking the steps needed to expose resident physicians to settings that promote care coordination, shared decision making, and team-based care skills. These skills will be necessary to continue to meet the needs of the community in which they serve. Harvard Medical School’s recent launch of a new Center for Primary Care—a state-of-the-art teaching and delivery center that aims to promote innovative primary care delivery while serving as a training hub for future primary care and health systems research leaders.

With the passage of the Patient Protection and Affordable Care Act (ACA or healthcare reform law) extending health insurance coverage to approximately 32 million additional individuals—many whom have gone without a regular care provider contact for prolonged periods of time—the need for accessible, coordinated, interprofessional primary care workforce will be critical in order to meet the increased demand for health care resources. To help address this demand, the healthcare reform law includes provisions intended to support and strengthen the primary care workforce, including reauthorization of health professions education and training programs authorized under Title VII of the Public Health Service Act. Through these programs, the Health Resources and Services Administration (HRSA) provides grants to medical and other health professions schools to improve the diversity, distribution, and supply of the health professions workforce with an emphasis on primary care and interdisciplinary education and training. In June 2010, the Department of Health and Human Services (HHS) announced funding was made available that allows the creation of 500 new residency slots reserved specifically for primary care specialties. While important, such commitments to increase the workforce supply will continue to be necessary in order to meet the ever-growing demand for physicians of all specialties, both primary care and not.

The ACA also established the Center for Medicare & Medicaid Innovation (CMI), an office within the Department of Health and Human Services’ Centers for Medicare and Medicaid Services. The law allocates \$10 billion in funding from 2011 through 2019 to the CMI for the administration and testing of patient-centered delivery models that encourage inter-professional collaboration and enhanced care coordination. Patient-centered medical homes, accountable care organizations, and healthcare innovation zones (HIZs) are among the models that are to be tested. Through the CMI, these new models have the potential to act as education and training laboratories for the next generation of health care providers.

In addition to serving as the nexus for pioneering cutting-edge medical breakthroughs, academic medical centers are also leading innovation in the education and delivery of primary care. Through practice transformation, curriculum enhancement, and workforce redesign, academic medical centers are at the forefront of developing new and innovative ways to teach medical

students and residents about how best to deliver primary care services. Supported by the tripartite missions of education, research and patient care, academic medical centers are producing a future primary care workforce with the skills necessary to meet the needs of diverse patient populations.

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