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AFFORDABLE CARE ACT ON GRADUATE MEDICAL EDUCATION AND PRIMARY CARE
PHYSICIAN SUPPLY.

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Dedication

Words cannot describe the gratitude that I have for all the support provided by my wonderful bride, Theresa.
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Tell me and I forget, teach me and I may remember, involve me and I learn.

- Benjamin Franklin

It is most fitting that a statement attributed to a founder of the University of Pennsylvania best describes my exceptional experience with Dr. Shaun R. Harper’s advising on my dissertation. I am most appreciative of Dr. Harper’s guidance and support.

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ABSTRACT


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As a result of a number of factors including compensation, practice environments, and socialization in medical school, there is an accelerating shortage in the number of primary care physicians in the U.S. In 2010, in its 20th Report to Congress, the Council on Graduate Medical Education called for increasing the percentage of primary care physicians from 32% to at least 40% to address this shortage. With the implementation of the Affordable Care Act, millions of uninsured and underinsured persons have become insured and enter the mainstream of healthcare. The Affordable Care Act contains several important provisions to expand the primary care workforce. Graduate medical education is central to development of this workforce. This study aims to answer the following research question: How is an individual primary care graduate medical education residency program affected by and responding to the implementation of the Affordable Care Act and the current and projected primary care physician shortages exacerbated by the Affordable Care Act? Case study methods were used to pursue this question in the context of a primary care graduate medical education residency program. Several useful implications for teaching, learning, and policy implementation emerged from this inquiry based on following themes, which emerged; the Affordable Care Act Impact, Model of Care, Advocacy, Resident Encouragement, and the Joy of Practice. This study found for the case
study primary care residency program; a positive impact by the Affordable Care Act implementation, the Patient-Centered Medical Home Model of Care is well suited for primary care residency training and faculty role modeling including the Joy of Practice may encourage residents to pursue primary care practice post residency.
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CHAPTER 1: BACKGROUND, PURPOSE, AND OVERVIEW OF THE STUDY

On March 23, 2010, The Patient Protection and Affordable Care Act (ACA) was signed into law. Included in the legislation is an expansion of health insurance predicted to reduce the percentage of uninsured individuals by 45%, or approximately 25 million persons at full implementation. The ACA provided mechanisms through which coverage was expanded, beginning in 2014. The first was through an expansion of Medicaid eligibility, giving states the option to offer coverage to all individuals with a family income of less than 138% of the federal poverty level (FPL) (Abraham, 2014). The second mechanism was through the introduction of subsidized, private insurance available from newly created exchanges. Persons with a family income of between 138% and 400% of the FPL who do not have access to an offer of affordable employer-sponsored insurance are eligible for premium assistance credits based on a sliding scale (Abraham, 2014). For exchange-based policyholders with an income of less than 250% FPL, cost sharing subsides for care also became available to reduce out-of-pocket costs. The Congressional Budget Office estimates that by 2023, an additional 13 million individuals would obtain coverage through Medicaid, and 24 million will have exchange-based plans (Abraham, 2014). As the ACA developed, those who draft it and the legislators who passed it looked at all aspects of health care delivery, but one area emerged as pivotal to the success of health care reform.

The push to enact the ACA in 2010 focused lawmakers’ attention on primary care, as President Obama and many members of Congress recognized that expanding insurance coverage requires an adequate primary care workforce to provide first contact care for millions of newly insured people. The ACA included several measures to strengthen primary care,
including increases in Medicare fees for primary care and support of patient-centered medical home reforms. Evaluation of the first wave of practices and systems, the types of practice innovations called for under patient-centered medical home reforms, have demonstrated improvements in patient satisfaction and quality of care, and reductions in use of costly emergency department and hospital services (Grumbach & Grundy, 2010; Bodenheimer & Grumbach, 2012).

While the ACA is unique and ambitious in its scope and breadth, it was based on the blueprint of Massachusetts’s health care reform. Instituted in 2006, Massachusetts’s health reform, an Act Providing Access to Affordable, Quality, Accountable Health Care, has been successful in increasing health care coverage statewide. For the past 12 years the Massachusetts Medical Society (MMS) has conducted an annual Physician Workforce Study to evaluate labor market conditions and document physician supply trends across the Commonwealth. According to MMS, as a result of Chapter 58 of the Acts of 2006, Massachusetts has attained the highest health insurance coverage rates in the nation (Massachusetts Medical Society Physician Workforce Study, 2013). In fact, as of 2011, only 3.9 percent of Massachusetts’s residents remain uninsured, a rate that is substantially better than the 15.1 percent uninsured rate that prevails nationally (Long, Goin & Lynch, 2013; Massachusetts Medical Society Physician Workforce Study, 2013). While there are considerably more insured individuals in the state, results from the 2013 study confirmed that there are still significant shortages across several specialties in Massachusetts: neurology, gastroenterology, internal medicine and family medicine, the latter two falling into the category of primary care.

Given the Massachusetts example, the Affordable care Act’s Insurance expansion was expected to have a greater impact nationally, as the use of services by the nation’s then 46.3
million uninsured was likely to rise. President Obama recognized this challenge and called for an immediate and long-term expansion of the numbers of the nation’s primary care physicians, nurse practitioners, and physician assistants (Petterson et al., 2012).

**Statement of Problem**

Since the passage of the ACA, the health policy literature has been inundated with articles on the worsening shortage of primary care physicians. One projection estimates that by 2020 the shortage will balloon to 40,000 physicians (Colwill, Cultice, & Kruse, 2008). A more recent estimate suggests a gap of 52,000 primary care physicians by 2015 (Petterson et al. 2012). The problem affects primary care for adults more so than children, due to 80 million aging baby boomers, insurance expansion, and the diabetes and obesity epidemics (Bodenheimer & Smith, 2013). This year the number of adult primary care physicians leaving practice may exceed the number entering (Kirch, Henderson & Dill, 2012).

The Council on Graduate Medical Education (COGME) was authorized by Congress in 1986 to provide an ongoing assessment of physician workforce trends, training issues, and financing policies and to recommend appropriate federal and private-sector efforts to address identified needs. The 20th Report of COGME (2010) reports that there is compelling evidence that health care outcomes and costs in the U. S. are strongly linked to the availability of primary care physicians. For each incremental primary care physician there are 1.44 fewer deaths per 10,000 persons, and patients with a regular primary care physician have lower overall health care costs than those without one (COGME, 2010).

In spite of these documented benefits, primary care physician maldistribution in the U.S. has been a longstanding and persistent challenge, notwithstanding recurrent attempts to ameliorate it with targeted physician workforce and health care financing policies, as well as
undergraduate and graduate medical education programmatic interventions. The National Health Service Corps, 2010, estimates that 50 million Americans live in health professional shortage areas (COGME, 2010). This problem, impacting both rural and urban underserved areas, can be attributed to multiple factors including inadequate reimbursement rates for primary care services, medical school debt load, geographic isolation, lifestyle preferences, and lower rates of health insurance coverage in rural and inner city areas (Bodenheimer, 2006; Delia, & Belloff, 2006; COGME, 2010). Because it is the only portal through which physicians pass on their way from medical school to practice, Graduate Medical Education (GME) bears a significant responsibility for addressing the problems of primary care physician shortage and distribution.

The U.S. depends on an effective system of Graduate Medical Education (GME) to ensure that well-trained, highly qualified physicians serve its population. The Accreditation Council for Graduate Medical Education (ACGME) (2013) describes GME as the period of didactic and clinical education in a medical specialty or subspecialty which follows the completion of a recognized medical school and which prepares physicians for the independent practice of medicine in that specialty or subspecialty, also referred to as residency education. The focus of this study is GME, which occurs primarily in teaching hospitals following graduation from medical school.

Of the many institutions affected by the ACA, I chose to focus on GME because it is powerful determinant of physician competencies as well as workforce size and specialty mix. GME also affects where physicians practice and the types of populations they serve. While the professional development of physicians assuredly continues beyond residencies and fellowships, GME is singularly important in setting a physician’s career course and in the direction of the
health workforce as a whole. Subsequently, GME strongly influences the quality, quantity, and costs of the nation’s health care (COGME, 2013).

To support residency training, GME is partially dependent upon Medicare funding that provides teaching hospitals approximately $10 billion annually. These subsides are provided with few requirements regarding training programs’ products, in terms of graduates’ specialty choices or practice locations. Medicare’s GME payment formulas for direct medical education (DME) and indirect medical education (IME) expenses largely tie funding to the hospital-based, inpatient setting. Although nonhospital settings can receive DME payments, IME payments—which are twofold greater—are calculated as add-ons to Medicare’s inpatient reimbursement system. As a result, Medicare’s formulas effectively limit the amount of GME funding that community-based ambulatory care sites can receive for residency training programs and act as a disincentive for nonhospital sites to establish residency programs (Chen, Chen & Mullan, 2012).

The COGME 20th Report recommended that policies supporting physicians providing primary care should be implemented that raise the percentage of primary care physicians (general internists, general pediatricians, and family physicians) among all physicians to at least 40 percent from the current level of 32 percent, a percentage that is actively declining at the present time.

Purpose of the Study

Health system reform is constant and global. Increasingly, most societies are preparing, legislating, implementing, assessing, or re-planning their health system reform as a “continuous policy improvement” cycle. Across the globe, the threefold objectives of reform are familiar: increasing access to medical services, improving the quality of care, and controlling the growth of costs. The “triple aim” of improving population health, lowering per capita costs, and
improving patient experience of care knows no borders. While each national government chooses priorities based on their circumstances and needs, the problems and solutions are similar (McDonough, 2014).

The purpose of this study is to better understand market factors and the federal Graduate Medical Education policies that have contributed to the shortage of primary care physicians as well as the challenge of the primary care delivery system to meet effectively the projected demand due to the ACA. In presenting the historical development of Graduate Medical Education and its funding, this study shows how complex health care policies and market practice developed prior to and after the passage of the Affordable Care Act. In-depth interviews with primary care residency faculty and residents currently practicing in a Patient-Centered Medical Home provide answers to the research question stated below.

Research Question

This study seeks to answer the following question:

How is an individual primary care Graduate Medical Education residency program affected by and responding to the implementation of the Affordable Care Act and the current and projected primary care physician shortages exacerbated by the Affordable Care Act?

Significance of the Study

Most research on the impact of the ACA on American health care is quantitative in nature, and statistics regarding the success/failure of the initiatives abound. There is, however, little information about how the mandates of the ACA have affected day-to-day operations in a primary care residency program. This study begins to fill that gap, presenting knowledge from physician faculty and residents of an individual GME primary care residency program, adding to the statistics the life experiences of primary care practitioners. Observations by the medical
professionals interviewed herein reveal not only their dedication and commitment but also their inside view of the difference the ACA has made to them and to the patients and community they serve. These experiences may serve to inform other GME programs as they work toward realization of the ACA goals.

A number of concepts and organizations are referred to throughout this dissertation, and they are defined or explained below.

Key Terms and Concepts

Included in this section are definitions of key concepts that will be used throughout the dissertation:

**Accreditation Council for Graduate Medical Education (ACGME)** is a private, non-profit organization that accredits about 8,700 residency programs in 130 specialties and subspecialties that educate residents. Its mission is to improve health care by assessing and advancing the quality of resident physicians’ education through exemplary accreditation (ACGME Fact Sheet, 2013).

**Allopathic Medicine** is the most common form of U.S. medical practice. Graduates of allopathic medical schools receive doctor of medicine (MD) degrees.

**American Osteopathic Association (AOA)** is the only accrediting agency for osteopathic graduate medical education in the U.S. Osteopathic postdoctoral training programs are recognized by U.S. federal and state agencies such as the Center for Medicare and Medicaid Services (CMS) and all state licensing boards. [Author’s note: The AOA, ACGME and American Association of Colleges of Osteopathic Medicine (AACOM) have agreed to a single accreditation system for graduate
medical education programs in the U.S., with AOA-accredited training programs transitioning to ACGME accreditation between July 1, 2015 and June 30, 2020.

Association of American Medical Colleges (AAMC) is a not-for-profit association representing all 141 accredited U.S. and 17 accredited Canadian medical schools; nearly 400 major teaching hospitals and health systems, including 51 Department of Veterans Affairs medical centers; and 90 academic and scientific societies. Through these institutions and organizations, the AAMC represents 128,000 faculty members, 83,000 medical students, and 110,000 resident physicians.

Council on Graduate Medical Education (COGME) was first authorized by Congress in 1986 to provide an ongoing assessment of physician workforce trends, training issues, and financing policies and to recommend appropriate Federal and private-sector efforts to address identified needs.

Graduate Medical Education (GME) is comprised of three to seven years of training following graduation from medical school. Students (residents) in GME focus on a specialty or subspecialty that may or may not become their chosen career.

Osteopathic Medicine is a form of medical practice similar to allopathic medicine that also incorporates manual manipulation of the body as a therapy. Graduates of osteopathic medical schools receive doctor of osteopathic (DO) medicine degrees.

Primary Care is integrated, accessible health care services by clinicians who are accountable for addressing a large majority of personal health care needs, developing a sustained partnership with patients, and practicing in the context of family and community (Institute of Medicine, 1996).
Primary Care Physicians are those practicing in family medicine, general practice, general internal medicine, and general pediatrics. Some physician groups, such as the American Medical Association consider physicians practicing in obstetrics / gynecology also to be primary care physicians. Practicing primary physicians include both MDs and DOs (U.S. Government Accountability Office, 2008).

Resident is any physician in an accredited graduate medical education program, including interns, residents, and fellows (ACGME, 2013 Glossary of Terms).

Residency Program is a period of education in a chosen specialty that physicians undergo after they graduate from medical school. Most residency programs last from three to seven years, during which residents care for patients under the supervision of physician faculty and participate in educational and research activities. When physicians graduate from a residency program, they are eligible to take their board certification examinations and begin practicing independently (ACGME Fact Sheet, 2013).

Residency Review Committee: The function of a Review Committee is to set accreditation standards and to provide a peer evaluation of residency programs and fellowships (ACGME, 2013 Glossary of Terms). Review committees exist for each specialty and fall under the aegis of the ACGME.

Teaching Hospital is an institution approved to participate in residency and/or internship training by ACGME or one with a medical school affiliation reported to the American Medical Association.
Organization of the Dissertation

Chapter Two of this dissertation contains a review of literature pertaining to graduate medical education and health care policy relevant to the current study. Chapter Three provides the descriptions of the study site, the methodological approach, and data collection and analysis procedures used. In Chapter Four, I present an overview of the themes that emerged from the interview analyses. And, finally, Chapter Five contains a summary of the study, a discussion of the findings and a set of implications for primary care graduate medical education policy, practice and future research.
The supply and distribution of primary care providers are established in the free market largely by hospitals that shape the portfolios of their Graduate Medical education training programs and insurers who determine payment for services. As in many other sectors where public need is important, the market does not always allocate resources in ways that optimize public benefits and costs. As a result of a number of factors including compensation, practice environments, and experience in medical school, there is a shortage in the number of primary care physicians. This shortage is especially critical now that health care reform legislation will provide coverage for as many as 32 million previously uninsured Americans. Such an influx of newly insured individuals will undoubtedly increase the demand for primary care services nationwide (COGME, 2010). The relatively recent establishment and evolution of Patient Centered Medical Homes (PCMHs) may dramatically change the way primary care physicians are trained and health care is delivered, as the ACA has called for strong focus on PCMH development as a means to furthering the expansion of primary care.

In this chapter, I first review literature describing the development of Graduate Medical Education in the U.S. Next, the development of the Patient Centered Medical Home is presented, followed by literature regarding physician choice of primary and specialty care and GME federal legislation implications for primary care. Literature describing physician supply/demand, the Massachusetts health care reform experience and implementation of the ACA with a focus on primary care, GME, and a conceptual framework of resident learning practice concludes the review.
Chronology of Graduate Medical Education (GME) Development and Accreditation

The importance of GME to American medicine cannot be overemphasized. GME is the only portal through which medical school graduates pass to practicing medicine; to become licensed, a physician must complete some graduate training in an accredited U.S. GME program. In academic year (AY) 2007, there were 106,012 residents and fellows training in programs accredited by the ACGME. In addition, there were approximately 4,500 graduates of osteopathic schools training in osteopathic graduate programs accredited by the American Osteopathic Association in AY 2006 and a small number of physicians training in programs accredited by other organizations. Hence, physicians in ACGME- accredited programs represent the vast majority of physicians in training in the U.S. (Salsberg et al., 2008).

Most residency programs last from three to seven years, during which residents care for patients under the supervision of physician faculty and participate in educational and research activities. When physicians graduate from a residency program, they are eligible to take their board certifications and begin practicing independently. Teaching hospitals, academic medical centers, health care systems and other institutions sponsor residency programs (ACGME Fact Sheet, 2014).

To understand the need for and effect of the Affordable Care Act on Graduate Medical Education, it is beneficial to examine the evolution of GME in the United States and to understand its effect on physician supply and distribution.

The history of GME accreditation in the early part of the 20th century is clouded by the inconsistent use of terms and archaic language and semantics. Early on, the term “graduate medical education” itself appeared in the *Journal of the American Medical Association (JAMA)* in reference not only to internship and residency education, but also to continuing medical
education. The precursor to today’s Graduate Medical Education Directory, first published by the American Medical Association (AMA) Council on Medical Education and Hospitals in 1914 as the “Provisional List of Hospitals Furnishing Acceptable Internships for Medical Graduates,” listed 603 hospitals, including 35 “State Hospitals and Hospitals for the Insane” and 95 “special hospitals.” This last category, comprising the “listing of specialty services as internships,” was discontinued in the mid-1920s when the Council on Medical Education and Hospitals began maintaining a separate list of approved residencies. Other terms referring to GME included “continuation education” and “postgraduate continuation education” (Donini-Lenhoff & Hedrick, 2000).

By the 1920s, the internship had become an accepted part of preparation for general practice, but specialty training was still largely unregulated and disparate. The multiple possible routes to practice included some type of residency, “postgraduate” studying in Europe, and formal coursework (sometimes as brief as a few weeks). In 1921, the Medical Education issue of JAMA listed “graduate courses in medical schools” and 18 “graduate medical schools,” “commonly referred to as postgraduate medical schools” (Donini-Lenhoff & Hedrick, 2000). The Graduate School of Medicine of the University of Pennsylvania, for example, offered “courses extending over four to twelve months in medicine, pediatrics, neurology, dermatology, syphilology, roentgenology, surgery, gynecology, obstetrics, orthopedics, urology, proctology, ophthalmology, otolaryngology and the medical sciences.” (Donini-Lenhoff & Hedrick, 2000).

An important step in the standardization of GME occurred in June 1923, with the AMA House of Delegates’ adoption of the “Principles Regarding Graduate or Postgraduate Medical Schools,” a precursor of the “Essentials of Accredited Residencies in Graduate Medical Education: Institutional and Program Requirements.” The document states that the student
should be able to “obtain progressive work in a continuous course of two or three years, as may be necessary to prepare him satisfactorily for the practice of a chosen specialty.” (Donini-Lenhoff & Hedrick, 2000).

A statement published in the 1925 JAMA Medical Education issue defended the intent of the Council on Medical Education and Hospitals to standardize GME, root out abuse, eliminate inadequate programs, and keep substandard physicians from getting into GME:

The Council is not attempting to prevent any physician from getting any course he needs, nor is it trying to assume authority over any individual or any graduate teaching institution, or to prevent them from offering to physicians any courses they see fit. If an institution desires to have the Council’s endorsement of its work or of any particular course offered, however, it should not be unwilling to comply with the principles which have been laid down and which are believed to be fair and just”(Donini-Lenhoff & Hedrick, 2000).

In the mid-1920s the Council on Medical Education and hospitals began maintaining a separate list of approved residencies, and in 1927, the Council on Medical Education and Hospitals published a list of hospitals whose GME programs met with approval by various specialty boards, including the American College of Physicians and the American College of Surgeons (Surdyk & Taradejna, 2010).

Before the 1940s – as American physicians increasingly sought residency training as a means of enhancing clinical expertise, helping develop their own practice, and later, as a requirement of licensure – hospitals paid for trainees, building the relatively modest cost into patient charges. After World War II, federal support, through the GI Bill, provided qualified candidates a subsidized residency experience with a stipend, as well as a subsidy to the hospitals offering residency positions to these servicemen. (Ward & Mainiero, 2013). There was a dramatic increase in the number of physicians entering specialty residences, with the total number of residency positions offered increasing six-fold from 1940 to 1960. Residency program
costs rose in the 1950s as house staff become accustomed to earning more than a nominal stipend; institutions were able to add cost of facility and technology acquisition and educational program to insurance charges (Rich, et.al. 2002).

In addition to the GI Bill’s supporting GME post WWII, the rapid introduction of new technologies and medications in the absence of an infrastructure for patients to access and/or pay for these advances generated new public health concerns. These challenges led to a radical transformation in the U.S. health care system- the proliferation of acute care hospital facilities (spurred by the 1946 Hospital Survey and Construction Act, known as “Hill-Burton,” Pub. L.79-725), coupled with the introduction of new payment mechanisms [e.g., insurance products and employer-based offerings] to support the cost of hospital care). An explosion of clinical application was made possible by biomedical research. This was matched by increased access to tertiary care, which resulted in improved quality of life and longevity. Consequently, public expectation and demand for physician services began to exceed the physician workforce supply and require appropriate mechanisms for payment. As hospitals began more aggressively to manage the critically ill around-the-clock, hospital-based internships and residencies were born to support the effort, and the foundation to support GME was laid (Conroy & Kirch, 2010). As GME developed over the years, so did the methods of funding for resident education.

During the 1960s, there was a perceived shortage of physicians at a time when demand for health care services was steadily increasing. As a result, the federal government assumed substantial financial responsibility for the funding of medical education. When Congress created the Medicare program in 1965, it included provisions for GME funding within Medicare. Reasons cited for this inclusion were recognition of a need for trained physicians and an acknowledgement that educational activities within a hospital enhance the quality of care. In
1965, there were 41,568 medical residents in the U.S. By 1999, this number had more than doubled to nearly 100,000 (Gentile & Buckley, 2010).

Since Medicare’s inception, the method of payment to support residency training has evolved. Initially, teaching hospitals were paid through a retrospective, open-ended cost-reimbursement system (Ward & Mainiero, 2013). In 1972, the Liaison Committee for Graduate Medical Education (LCGME) was established to oversee committees developed to review the quality of GME programs in several specialties. The LCGME was reorganized and the accreditation process streamlined in 1981 with the formation of the Accreditation Council for Graduate Medical Education (ACGME). In 2000, the ACGME became an independent, separately incorporated, not-for-profit corporation with its own Board of Directors (Surdyk & Taradejna, 2010). ACGME’s work of reviewing specific programs and making accreditation decisions is carried out by 27 Residency Review Committees (RRCs), one for each major specialty, as well as one for transitional year programs. (See Appendix A for the list of major specialties/subspecialties). The Institutional Review Committee accredits institutions that sponsor residency programs. RRC members are volunteer physicians appointed by the appropriate medical specialty organization, medical specialty board, and the AMA Council on Medical Education (ACGME Fact Sheet 2014).

Throughout these developments and changes in accreditation and funding policies, effectively, teaching hospitals had no constraint on the number of residency programs or positions offered. However, increasing pressure to control hospital costs resulted in Medicare’s shift to a prospective, hospital-specific, per-resident or capitated reimbursement system, which occurred with the implementation of diagnosis-related groups (DRGs) in the early 1980s and congressional passage of the Consolidated Omnibus Budget Reconciliation Act in 1986 (Ward &
Mainiero, 2013) which changed the payment procedures, making Medicare GME payments either direct or indirect.

Direct GME (DGME) payments are intended to support the teaching aspects of residency programs, such as resident stipends and benefits, supervisory physician salaries, and administrative overhead expenses. DGME payments are based on a hospital-specific, per resident payment amount that was determined in 1984, subsequently updated for inflation. This amount is applied to Medicare’s share of the hospital’s inpatient days (both fee-for-service and Medicare Advantage). Subspecialty fellowship positions are funded at half the amount of core-year residency positions. The total number of residents supported by Medicare is capped per hospital at 1996 levels. Medicare also provides some education funding to hospitals to support direct costs of hospital-based education and training programs for nursing and various allied health professions. The Medicare Payment Advisory Commission reported that Medicare’s DGME payments totaled an estimated $3 billion in 2009 and that Medicare’s total GME payments for 2009, including indirect medical education (IME) payments were an estimated $9.5 billion – averaging more than $1,000,000 per resident (Medicare Payment Advisory Commission, 2010).

Indirect medical education (IME) payments are designed to support the higher costs of patient care associated with teaching, such as residents’ “learning by doing,” greater use of emerging technologies, and patient severity. Based on a formula, IME payments are an adjustment—a percentage increase—to Medicare’s inpatient payment rates and vary based on hospitals’ “teaching intensity” (as measured by the ratio of residents to hospital beds). Therefore, hospitals’ IME payments are tied to their Medicare inpatient volume and case mix as well as the size of their residency programs (subject to their resident cap number). Medicare
makes separate adjustments for operating and capital payments. Hospitals also receive IME payments from Medicare for Medicare Advantage patients. Residency programs located in non-hospital settings cannot receive IME payments (Medicare Payment Advisory Commission, 2010).

We see then, that most residency programs are hospital-based, and GME policies and practices have developed largely in accordance with funding availability. But the ACA has a focused funding on and mandated further development of Patient Centered Medical Homes (PCMH), integrated care programs that are a relatively recent development in the delivery of health care. It is worthwhile to consider PCMH `development along with GME development.

Patient – Centered Medical Homes

According to the Patient-Centered Primary Care Collaborative (PCPCC) (2015), the term “medical home” was first used in the late 1960’s, “to describe primary care that is accessible, family-centered, coordinated, comprehensive, continuous, compassionate and culturally effective (PCPCC website, para.1). Throughout the remainder of the century, attention was periodically focused on redefining the health care facility as a “medical home” and establishing the role of primary care deliverers as forming sustaining partnerships with patients and their communities, but the strong push to PCMH development began in 2002, with the establishment of the “Future of Family Medicine” project. Sponsored by the American Academy of Family Physicians, its charge was to “examine the soul of the discipline of family medicine, and to take stock of the present and grapple with the future of family practice” and further to “Develop a strategy to transform and renew the specialty of family practice to meet the needs of people and society in a changing environment.”

A number of task forces were established, and an independent consulting firm was hired to perform quantitative study of the need for change (Kahn, 2004). The resulting
... proposed New Model of practice has the following characteristics: a patient-centered team approach; elimination of barriers to access; advanced information systems, including an electronic health record; redesigned, more functional offices; a focus on quality and outcomes; and enhanced practice finance. A unified communications strategy will be developed to promote the New Model of family medicine to multiple audiences. The study concluded that the discipline needs to oversee the training of family physicians who are committed to excellence, steeped in the core values of the discipline, competent to provide family medicine’s basket of services within the New Model, and capable of adapting to varying patient needs and changing care technologies (Kahn, 2004).

By 2007, the major physician associations had endorsed the Joint Principles of the Patient Centered Medical Home (PCMH) which calls for each patient to be assigned to a personal primary care physician who will coordinate comprehensive care for the patient, including arrangements with specialty physicians (Joint Principles of the Patient-Centered Medical Home, 2007).

The PCMH is not a physical location or facility but rather a concept and methodology of delivering health care. The PCMH is essentially the primary care staff that works with individual patients and their families to design appropriate care strategies. It is a commitment to making care accessible (24/7) and understandable to patients (Patient-Centered Primary Care Collaborative, 2016).

By 2015, more than 10 percent of U.S. primary care practices just over 9,000 were recognized as PCMHs by the National Committee for Quality Assurance (NCQA), which has the nation’s largest PCMH program. To earn NCQA recognition, practices must meet rigorous standards for addressing patient needs. That means offering access after-hours and online so patients get care where and when they need it; getting to know patients through long-term partnerships, rather than hurried, sporadic visits; and making treatment decisions together with patients based on individual preferences, thus helping patients become better engaged in their own health behaviors and healthcare. Everyone in the practice, from clinicians to front desk
staff, works as a team to coordinate care from other providers and community resources. This maximizes efficiency by ensuring that highly trained clinicians are not doing tasks less – credentialed staff can do. They also avoid costly and preventable complications and emergencies by focusing on prevention and managing chronic conditions (National Committee for Quality Assurance, 2015).

The National Committee for Quality Assurance (2015) established four goals for the Patient-Centered Medical Home:

1. Primary care clinicians will improve quality, patient experience, coordination and value through better prevention and access to reduce emergency department and hospital care.

2. Primary care will be the foundation of a high-value health care system that provides whole person care at the first contact. Everyone in primary care practices – from physicians and advanced practice nurses to medical assistants and frontline staff – should practice to the highest level of their training and license in teams to support better access, help with self-care, and coordination.

3. PCMHs will show the entire health care system what patient-centered care looks like. Patient-centered care is “respectful of and responsive to individual patient preferences, needs, and values, and ensures that patient values guide all clinical decisions” (Institute on Medicine, 2001). Individuals and families get help to be actively engaged in their own health behaviors, health care, and in decisions about their care.
4. PCMHs will revitalize the “joy of practice” in primary care, making it more attractive and satisfying.

Much of the literature pertaining to PCMHs hail this concept as the medical health care delivery mechanism of the future, and credence is given to this opinion by the Affordable Care Act which seeks to strengthen the primary care system by encouraging the widespread adoption of PCMH models of care (Davis, Abrams & Stremikis, 2011). It was hoped that making primary care not only valuable but also essential to the patient’s well-being will lead to an increase in primary care residents who remain in primary care after graduation. There are, of course, a number of factors that these professionals must consider in making their career choices.

Trends in Physicians’ Choice of Primary and Specialty Care

Because hospitals primarily provide specialty, or tertiary, care, a natural result of funding practices was a shift of residents from primary care to specialty care concentrations. Patients, meanwhile, began to expect quality specialty care in hospitals, and the perception developed that specialists were better doctors than generalists, a perception filtered into the general population and into Graduate Medical Education, as well. That perception, as well as policies that favored specialists, contributed to the decline of interest in primary care residencies. Additional factors include the discipline’s comparatively low pay, high student debt, and poor role modeling among them. Negative perceptions begin early, with Rodriguez, et al. (2015) identifying medical students’ perceptions as another important factor in choice of primary or specialty care. Hence, medical schools themselves have a responsibility in producing more physicians and influencing specialty career decisions, hopefully emphasizing primary care.

Only 9% of U.S. medical students choose family medicine and general internal medicine, the two adult primary care careers. In addition, the nation’s physicians are aging along with the
rest of the nation, and as many as one-third of all physicians in the U.S. may retire within the
next two decades (Kirch, Henderson, & Dill, 2012). Additional factors are altering the way, and
how much, practicing physicians work. Not only are older physicians retiring, but changing
demographics and work-life expectations mean that younger physicians are working fewer
hours than their predecessors (Watson, Slade, Buske & Tepper, 2006; Kirch et al., 2012). Work-
life balance is becoming increasingly important among younger physicians, many of whom
utilize part-time work schedules to accommodate commitments at home (Dorsey, Jarjoura &
Rutecki, 2003; Kirch et al., 2012). As the demand for adult primary care is exploding, the capacity
to provide that care is shrinking (Bodenheimer & Smith, 2013).

For generations, the supply of practicing physicians in the U.S. has swung from too small
to too large and back again. In 2006, alarmed about a growing physician shortage, the
Association of American Medical Colleges (AAMC) recommended that medical school
enrollments be increased by 30% over the next decade. Entering classes are projected to reach
21,434 students by the 2016-2017 academic year, almost a 30% increase over 2002. Colleges of
osteopathic medicine have been growing for the past 20 years, doubling in number from 15 to
30, increasing enrollments from 6,892 students in 1990 to 21,743 in 2012. And every year,
approximately 12,500 U.S. citizen and foreign students earn degrees from international medical
schools and apply for entry into U.S. GME programs.

After two decades (1980 to 2000) when the number of U.S. medical school graduates
remained steady (about 16,000 annually), a burst of activity has led to the expansion of existing
medical schools, the development of new ones, and rapid growth of colleges of osteopathy. In
2002, there were 125 U.S. medical schools; now there are 141, and about one third of the
recent growth in enrollment derives from new schools. In addition, several schools have been
granted applicant status by the Liaison Committee on Medical Education. State and local
concerns about physician shortages have combined with national factors (population growth,
the aging baby boomers, and an increasing number of retiring practitioners) to drive this growth
in medical school capacity. Although the federal government was the major source of funding
for the doubling of the number of medical schools in the 1970s, it did not lend direct financial
support to this recent expansion (Iglehart, 2013). According to the GME Census, jointly
sponsored and administered by the AMA and AAMC (which also maintain a database of
information on training programs accredited by the ACGME and the residents and fellows in
them), increasing medical school capacity has heretofore failed to increase interest in primary
care physicians (Brotherton, 2013).

The National GME census data focusing on residents on duty on December 31 of 2001,
2004, 2007 and 2010 showed that the number expected to enter the four primary care
specialties: family medicine, internal medicine, pediatrics, and internal medicine / pediatrics
between 2001 and 2010 decreased from 8,624 to 8,084 (6.3%) as the number sub specializing in
both internal medicine and pediatrics continued to increase. Of the new entrants in 2010 into
categorical internal medicine, 3,845 (57%) are expected to enter subspecialties (compared with
51% in 2001); 1,145 (42%) of new entrants into pediatrics will sub-specialize (compare with 28%
in 2001). The number and percentage of new program, year one residents expecting to enter
primary care for the most recent year for which figures are available are essentially unchanged
from the prior year, offering some hope that the decline in interest in primary care careers may
be ending (Jolly, Erikson & Garrison, 2013). Some new trends in medical students’ thinking offer
further hope of renewed interest in primary care.
Today, factors influence the career specialty decisions that medical students make range across a wide spectrum from individual characteristics such as personality to anticipation of specialty related income. Studies have suggested that a so-called controllable lifestyle has become a determinant in students’ specialty selection criteria. In the context of the medical specialties, these studies have defined a controllable lifestyle by the following characteristics: personal time free of practice requirements for leisure, family, and avocational pursuits and control of total weekly hours spent on professional responsibilities. This related to the amount of time remaining for activities independent of medical practice and is a reflection both of total hours worked and number of nights on call. In their study of 346 medical students from nine U.S. medical schools, Schwartz et al (1990) found that students were most inclined to select specialties that had fewer number of practice hours per week, allowed adequate time for the pursuit of avocational activities, and seemed to have a decreased number of call nights. In 2003, Dorsey, Jarjoura & Rutecki found that these aspects of lifestyle were found to be more influential than more traditional motivators, such as remuneration, prestige, and length of training.

West and Dupras, (2012) studied 57,087 U.S. internal medicine residents and found that only 21.5% of third-year internal medicine residents planned to practice primary care after completing training. In similar surveys of third-year residents, 45% of pediatric residents planned to practice primary care (Frinter & Cull, 2012). Thus, of the 10,624 students matching into generalist residency programs, only 4,648 (44%) plan to practice primary care after training, implying that only 20% of all 22,934 medical school graduates from 2012 will be expected to practice primary care in 2015. Even if half of all internal medicine residents chose primary care,
the proportion of all graduates practicing primary care would increase, but only from 20% to 27%, still far short of the 40% rate recommended by COGME, (2012); Schwartz, (2012).

Rohan-Minjares, et al. (2015) concluded that even in countries like the United States and Canada, with similarly poor perceptions of family medicine, students’ interest may increase if family medicine role models are ubiquitous and if students are immersed in community-based preceptorships, the longer the better, under the tutelage of family physicians. Supporting these changes today are a growing number of medical school networks that promote primary care and its sister challenges – medicine’s integration with public health, an investment in community engagement, and the acceptance of medicine’s role in addressing social determinants (Rohan-Minjares, et al., 2015).

We see, then, that a trend toward increasing interest in primary care careers could be reinforced if the job market, reimbursement policies for physician services, or other environmental conditions should change. Although primary care salaries are lower than those of other specialties, there are signs that primary care salaries are on the rise, and could make the field more attractive (Jolly, et al., 2013). At least 27 states are already paying premiums for patient-centered medical homes for Medicaid patients, and an additional 14 states are developing plans to do so. Private insurers such as Blue Cross Blue Shield and Wellpoint have also launched pilots or incentive programs in some markets. Furthermore, the Affordable Care Act is placing a strong spotlight on the need for more primary care physicians and the role they can play in meeting the triple aim of decreasing cost of care and improving quality and outcomes (Jolly, et al., 2013).

In addition to the literature reviewed which provides an insight to the development and structure of graduate medical education, primary care delivery and the ACA, a review of a
conceptual framework as to how medical residents learn as they develop into practicing physicians may inform this study

Conceptual Framework of Resident Learning by Role Modeling

Resnick (1987) defines ‘formal learning’ as that which takes place in an institution as a result of instruction, an individual process, involving the purely mental activity of manipulating symbols resulting in the production of generalized concepts. ‘Informal learning’, by contrast, is defined as characteristically collaborative, usually involving the manipulation of tools and leading to context-specific forms of knowledge and skills. A distinction can also be made between formal workplace learning and ‘incidental learning’, (Marsick & Watkins, 1990; Swanick, 2005).

Residency education is a decisive phase in physician careers because it prepares ‘for the independent practice of medicine and plays a crucial role in shaping their habits, behaviors, attitudes, and values’ (Ludmerer & Johns, 2005; Yardley, Teunissen & Dornan, 2012). Residency medical education consists mainly of on-the-job learning, involving ‘a process of progressively independent delivery of patient care by a resident, associated with a decreasing level of supervision by clinical supervisors’ (Kennedy et al., 2005; Yardley, Teunissen & Dornan, 2012).

Much learning at work, even within residency programs, occurs outside formally organized and delivered curricula. This ‘informal learning’ has been described by Eraut (2004) as taking place ‘in spaces surrounding activities and events with a more formal educational purpose’. From an educational viewpoint, informal learning is unstructured and opportunistic. It is closely linked to implicit or tacit learning, which Reber (1993) described as ‘the acquisition of knowledge, independent of conscious attempts to learn and in the absence of explicit knowledge about what was learned’ (Yardley et al., 2012).
According to Eraut (2004), several factors make it hard to understand learning at work. First, it is largely invisible because much of it is taken for granted and not recognized as learning. Second, the resulting knowledge is either tacit or regarded as part of a person’s general capability rather than something that has been learned. Finally, discourse about learning is predominately about propositional, codified knowledge, and people have difficulty describing the more complex aspects of their work and the nature of their expertise. So, although informal learning and the use of tacit knowledge is probably the largest part of the learning process in workplaces, its characteristics make it difficult to identify (Yardley et al., 2012).

Current insights into workplace learning stress residents’ experiences and their active participative role, which allow them to develop into medical specialists (Teunissen et al. 2007). Clinical supervisors guide residents’ development (Billett, 2002) while simultaneously taking final responsibility for safe patient care. These notions are well aligned with Dewey’s (1938) concept of experience and his view on the role of teachers (Yardley et al., 2012).

Theoretical perspectives from the experiential learning tradition have been applied to residency learning in several ways. Building on the importance of participation, Stok-Koch et al. examined factors that made workplace experiences conducive to learning. They conducted small group interviews with physicians in training and their educational supervisors and came up with a list of 56 factors that influence workplace learning, such as ‘interdisciplinary meetings’, ‘a good workplace’, ‘access to library/internet’, and residents’ ‘experiences of social integration’ (Stok-Koch et al., 2007). Research by Sheehan et al. provides a prime example of how such factors can be used to develop an educational model. In a three-stage qualitative study, they showed how residents’ participation developed during rotations in a hospital. It depended mainly on clinical supervisors’ ability to engage residents in shared experiences and encourage them to learn from
everyday clinical tasks (Sheehan et al., 2005). Teunissen and Wilkinson (2010) built on the constructivist outlook of experiential learning theorists when they described how experiences become meaningful events for residents. According to them, the interaction between residents, clinical faculty and other health care professionals working together on tasks in a shared physical and social context lead to different interpretations on their experiences (Yardley et al., 2012).

Medical educators increasingly understand professional education to be a process of moral enculturation, of taking the values, attitudes, character, and identity of the chosen profession (and, implicitly, of the “good” professional) as one’s own (Hafferty & Franks, 1994). Role models are central to enculturation because professional behavior is learned in the experience of practice. Kenny et al., (2003) distinguish between mentors and role models. Mentors are senior members of a group who intentionally encourage and support younger colleagues in their careers. Mentoring often includes role modeling. Role models, on the other hand, teach by example and influence professional identity in multiple ways. Role modeling is less intentional and often unaware, more informal and more episodic than mentoring (Kenny et al., 2003).

Albert Bandura’s (1986, 1971) social learning theory describes the psychology of learning through observation. Bandura proposes a deliberate four-step process to help a learner incorporate something that has been modeled into his or her own performance. These steps consist of explicitly focusing the learner on what is being modeled, helping the learner create a mental representation of what has been modeled, observing and providing feedback to the learner on her or his attempts to reproduce what has been modeled, and motivating the learner to continue to practice the modeled behaviors. Cote & Laughrea (2014) suggest that staff
physicians often role model in an implicit fashion. Yet, being aware of one’s role modeling and engaging in an active and deliberate process similar to the one described by Bandura may be important in optimizing its effectiveness (Kenny et al., 2003, Cruess, Cruess & Steinert, 2008, Wright & Carrese, 2002, Park et al., 2010, Epstein, et al., 1998; Sternszus, Macdonald & Steinert, 2016).

The medical education literature identifies the importance of role models in value, attitude, and professional character formation. A 1989 special issue of *Academic Medicine*, recognizing the “Coming of Age” of ethics education, concluded, “… faculty should authentically demonstrate human, value-conscious medical practice in the treatment of patients, colleagues and students. Students probably learn better in environments where their professional roles can be both observed and practiced” (Miles et al., 1989). In 1994, Hafferty and Franks’ important work on the “hidden curriculum” challenged medical educators to better address and assess the importance of role models in the learning that takes place at all levels of medicine and to acknowledge training institution as both cultural entities and moral communities intimately involved in constructing definitions of “good” and “bad” medicine (Hafferty & Franks, 1994; Kenny et al., 2003).

The literature on professionalism does emphasize the importance of physicians’ developing ongoing self-reflective skills and professional character. It recognizes that students must acquire the skills, values, and attitudes that comprise a professional identity. In reality, ‘the values and behaviors that individual physicians demonstrate in their daily interactions with patients and their families, and with physicians and other professional colleagues, become the foundation on which medical professionalism rests (Swick, 2000). Forming professional character begins upon entrance to medical school. Residents and fellows, still in formation
themselves, learn from their role models and serve as significant role models for medical
students (Ficklin & Powell, 1988; Kenny et al., 2003).

Jochemsen-van der Leeuw et al., (2013) systematically reviewed the medical and
medical education literature to identify the attributes characterizing clinical faculty as positive
and negative role models for resident trainees. The characteristics of negative role models, as
reported in the studies reviewed, included being uncaring toward patients as well as having
poor relationships with patients and other health care workers. Additionally, negative roles
were described as being unsupportive and disinterested toward learners, being cynical and
impatient, or having a sexist attitude.

These attributes of negative role modeling are in marked contrast the qualities of
positive role modeling. Positive role models were most commonly described as being excellent,
experienced clinicians who had empathy for patients and positive interactions with patients,
patients’ families, and other health care workers. Positive role models were also frequently
described as displaying teaching qualities, including commitment to the growth of learners and a
humanistic style of teaching, as well as personal qualities such as enthusiasm. Thus, the
literature describes the clinical faculty trainer who is a positive role model as someone who is
admired for being, or acting as, a professional, or as someone who inspires and teaches while
carrying out other tasks (Jochemsen-van der Leeuw et al., 2013).

The consideration of role modeling as central in the development of a primary care
resident is not the only factor that impacts resident education, funding sources for GME, much
of which has come about as a result of federal policies has implications.
GME Federal Legislation: Implications for Primary Care Physician Training and Distribution

The Institute of Medicine (IOM) (2014) reports the financial underpinnings of the GME enterprise as complex and largely undocumented. Medicare has minimal reporting requirements; teaching hospitals are asked to report only the data elements that are needed to calculate GME payments. In addition, reported data on the direct costs of GME are not complete, standardized, or audited with Medicaid GME funding especially opaque. The revenue impact and cost savings associated with sponsoring residents are neither tracked nor reported, and they are rarely acknowledged in analysis of GME costs. As a result, the financial impact of residency training programs on teaching hospitals and other sponsoring organizations is not well understood (IOM, 2014). The primary care workforce is doubly disadvantaged in this situation. The lack of requirements concerning specialties training has led hospitals increasingly to shift resident positions from primary care to non-primary-care specialties in an environment that incentivizes specialty care. As a result, there has been little growth in the number of primary care resident positions in the last decade, and there have been decreases in specialties such as family medicine. Further, training focused on the inpatient setting is unlikely to optimally prepare primary care physicians for patient care that will occur largely in community-based and ambulatory care settings. In 2010, the Medicare Payment Advisory Commission noted these longstanding inconsistencies in Medicare’s GME policy and called for greater accountability for GME payments to hospitals (Chen, et al., 2012).

Medicare and federal Medicaid matching funding for GME is mandatory, but there are also discretionary appropriations (Health Resources and Services Administration (HRSA), Veterans Administration, and U.S. Department of Defense). Most states support GME through
their Medicaid programs, and some states provide other GME support through state-based programs. Hospitals, universities, physicians’ organizations, and faculty practice plans also support residencies and fellowships. Private GME funding—philanthropy and gifts or grants from industry—is not well documented, but it may be significant. Private insurers support GME indirectly by paying higher rates to teaching hospitals (IOM, 2014).

Medicare is the single largest explicit contributor to GME ($9.7 billion in 2012), followed by Medicaid ($3.9 billion in 2012) (Henderson, 2013). The Veterans Health Administration and the HRSA are also important funders of GME, contributing and estimated $1.4 billion and $0.5 billion respectively (HRSA, 2013; IOM, 2014).

The statutes governing Medicare’s GME financing were developed at a time when hospitals were the central, if not exclusive, site for physician training (See Appendix B for a timeline of Medicare GME statutes). Medicare GME payment rules continue to reflect that era. GME monies are distributed directly and primarily to teaching hospitals, which in turn have fiduciary control over the funds. Hospitals may add residents beyond the 1996-level cap, but cannot receive additional Medicare payments for those trainees. An unintended consequence of essentially freezing the geographic distribution of Medicare-supported residencies, without regard for future changes in local or regional health workforce priorities or the geography and demography of the U.S. population has resulted in the greatest density of Medicare-supported slots and Medicare GME funding continuing to be found in the Northeast (IOM, 2014).

By distributing funds to teaching hospitals, the Medicare payment system discourages physician training outside the hospital in clinical settings where most health care is delivered. Linking GME payments to a hospital’s Medicare inpatient volume systematically disadvantages children’s hospitals, safety net hospitals, and other institutions that care for non-elderly
patients. Non-clinical, population-based specialties, such as public health and preventive medicine, are similarly affected (IOM, 2014).

Prior to the Balanced Budget Act of 1997 (BBA), there had been numerous recommendations that the number of residency positions in the U.S. be decreased, but in fact the number increased substantially between 1985 and 1996. A major cause may have been the way Medicare reimbursed for GME. The DME and IME payments at the time provided a strong incentive to hospitals to continue increasing their number of residents. Residents, for whom reimbursement is obtained from Medicare, provide services to the hospitals inexpensively and more flexibly than full-priced physicians and nurses. It was lucrative for hospitals to expand their residency slots. However, this changed when the BBA capped the number of residents qualifying for DME reimbursement at the number reported on or before December 31, 1996 and initiated a phased-in reduction of the IME adjustment factor. The Act did allow for establishment of new, rural-based residency training programs (COGME, 2000).

The BBA provisions that appear to have raised the most concern are the per-hospital cap on the residents and the reduction in the IME adjustment factor. The cap on the number of residents discourages facilities from adding or expanding residency programs. It is an across-the-board cap that limits the total numbers of residents and in the process can hamper expansion of primary care specialties when hospitals do not make corresponding cuts in specialists. Although beneficial from the standpoint of curbing an oversupply of residents being trained and funded by Medicare, the limitation on primary care residents appears to be in conflict with the general goals of the COGME to promote the education and training of a mix of physicians consistent with current and future health care needs (COGME, 2000).
In response to concerns raised by the BBA, The Medicare Balanced Budget Refinement Act of 1999 (BBRA) addressed some of the GME provisions of the BBA. The BBRA delayed IME adjustments cuts by 2 years and partially restored disproportionate share payments. BBRA also established a new average payment method for DME payments, with minimum payments set at 70% of the locally adjusted national average. The BBRA increased resident caps for primary care programs by up to 2 full-time equivalent positions and allowed rural hospitals to increase their cap by up to 30%. The new legislation did not allow adjustment of the 1996 cap to account for full-time–equivalent residents in ambulatory settings before 1997 (Phillips et al., 2004). However, these new provisions appear consistent with COGME’s goals of increasing primary care training and service in rural underserved areas (COGME, 2002).

Salsberg et al. (2008) examined the number of residents in training before and after the BBA adjustments and reported that the number of residents and fellows changed little between academic year (AY) 1997 (n= 98,143) and AY 2002 (n= 98,258) but increased to 106,012 in AY 2007, a net increase of 7,869 (8.0%) over the decade. The annual number of new entrants into GME increased by 7.6%, primarily because of increasing international medical graduates (IMGs). U.S. medical school graduates (MDs) comprised 44.0% of the overall growth from 2002 to 2007, followed by IMGs (39.2%) and osteopathic school graduates (18.8%). U.S. MD growth largely resulted from selection of specialties with longer training periods. From 2002 to 2007, U.S. MDs training in primary care specialties decreased by 2,641, while IMGs increased by 3,286. However, increasing subspecialization rates led to fewer physicians entering generalist careers. A perceived need for changing the system developed.

Legislative attempts have been made to redistribute Medicare-funded training slots, but such efforts focused on reallocating vacant slots rather than changing the overall geographic
distribution of Medicare GME support. In 2003, the Medicare Prescription Drug, Improvement, and Modernization Act sought to redistribute 3,000 unused Medicare-funded slots. Although the top priority for the redistribution was to expand training in rural areas, the impact in rural areas was minimal. Less than 3% of the redistributed positions were in rural areas, and of the 304 hospitals given additional slots, only 12 were rural institutions (Chen et al., 2013; IOM, 2014).

Chen et al. (2013) concluded that with the redistribution there was a net change in primary care positions between 2004 and 2008 with an increase of 1,585. The net change in nonprimary care positions was a 3,433-count increase. Net growth in positions was larger than the number redistributed mostly because of growth above the cap. Positions created above the cap are typically funded by the hospital.

Although the net change was positive for both primary care and nonprimary care positions, seventy-eight of the hospitals that received additional positions through the redistribution proceeded to reduce their number of primary care positions trained after redistribution. Forty-eight of these hospitals decreased their primary care training while increasing their non-primary care training. The relative growth of nonprimary care training was twice as large and had a net negative effect on primary care production by diverting would-be primary care physicians to subspecialty training. In the end, the legislative and regulatory priorities for redistribution were not met (Chen, 2013), leaving GME in the unfortunate position of needing to find another solution to the supply problem.

Physician Supply / Demand Implications for Graduate Medical Education

In January 2005, the COGME released its 16th Report, “Physician Workforce Policy Guidelines for the United States, 2000 – 2020,” recommending an increase of 3,000 medical
school graduates by 2015 in order to meet rising demand and need. Only under the most optimistic of various supply and demand scenarios outlined in the report would the nation have an adequate supply to meet demand in the year 2020. When the midpoints of the projected supply and demand scenarios outlined in the report are used, the net result is a projected shortage of about 85,000 physicians in 2020, which is equivalent to approximately ten percent of today’s physician workforce (COMGE, 2005; AAMC, 2012).

The numbers of generalist residency graduates have declined each year since 1998, causing concern about future shortages (Colwill et al., 2008). Furthermore, between 2005 and 2025 the population above age 65 will increase 73 percent, the same group who seeks care from generalists at twice the rate of those under the age of 65. Using 2005 levels as a benchmark, a 20-27% shortfall, about 35,000 to 44,000 generalists, is anticipated by 2025. The major decline is attributed to more and more graduates in internal medicine sub-specializing (Colwell; AAMC, 2012). In 2006, the American College of Physicians (ACP) released a report entitled “The Impending Collapse of Primary Care Medicine and Its Implications for the State of the Nation’s Health Care”. The ACP and AAMC cited a number of policy recommendations for averting a crisis, including implementing the advanced medical home care coordination model, reforming reimbursement policies, and creating financial incentives for improving quality and efficiency (American College of Physicians, 2006; AAMC, 2012).

In 2006, the AAMC also recommended a 30 percent increase in first-year medical school enrollment by 2015. Using the baseline of 2002 – 2003 first – year enrollment of 16,488 students, this meant an increase of 4,946 students, for a total of 21,434 entering students by 2015. The AAMC 2013 Medical School Enrollment Survey results project that first-year medical school enrollment in 2018-2019 will reach 21,349 – a 29.5% increase over the 2002 – 2003 level
and only 85 positions shy of the 30% target. Of the projected growth over this time frame, two-thirds will occur at the 125 medical schools that were accredited as of 2002. Newly accredited schools since 2002 will provide the remaining one-third of the growth (AAMC, 2014).

Osteopathic enrollment continues to rise rapidly with new first-year enrollment in 2018-2019 expected to reach 6,958, a 134% increase from first-year enrollment in 2002-2003. Combined first-year enrollment at existing M.D. - granting and D.O. - granting medical schools is projected to reach 28,307 by 2018-2019, an increase of 45% compared with 2002-2003 (AAMC, 2014). But these improved numbers reveal another barrier to creating enough practicing physicians: there are insufficient residency posts to accommodate all these medical graduates (Iglehart, 2013).

GME continues to be a concern for medical schools at the state and especially at the national levels. While entry-level positions are continuing to grow at a rate of about 1% a year, enrollment in undergraduate medical education (medical school) is growing much faster (Jolly, et al., 2012). Seventy-six percent of schools reported this as a moderate or major concern in their state and 91% expressed similar concern at the national level. Slightly less than half (47%) of schools reported moderate or major concern about their own incoming students’ ability to find residency positions of their choice after medical school (AAMC, 2014).

The AAMC (2008) Center for Workforce Studies projects future supply and demand for physicians and concludes that a national shortage is likely driven by such factors as U.S. population growth, aging population and doctors, and increased physician visits, and that the demand for doctors will outstrip the supply through at least 2025. If physician supply and use patterns stay the same, the U.S. will experience a shortage of 124,000 full-time equivalent (FTE) physicians by 2025. U.S. medical schools are increasing their enrollment as recommended by the
AAMC, but the report concludes that while this increase is necessary, it will not be sufficient to meet future patient needs and demand. Actions beyond increasing the supply of physicians will be needed. Complex changes such as improving efficiency, reconfiguring health care delivery, and making better use of both physicians and other health care professionals will also be necessary (AAMC, 2008; AAMC, 2012). An additional possibility would be increasing the number of residency slots available.

ACP has considered the option of increasing the number of overall GME positions to increase the supply of physicians, but concluded that increasing the overall pool of physicians would not ensure that adequate numbers enter and remain in practice in primary care, including general internal medicine, and in other specialties facing grave shortages. Also, the imperative of deficit reduction suggests that federal government funding for GME could be more effectively targeted and prioritized to fields with the greatest and most critical needs to train more physicians to meet national workforce goals, rather than asking the federal government to incur the much larger costs associated with an expansion of residency positions. ACP recommends a strategic increase in the number of Medicare-funded GME positions in primary care specialties that care for adults. With an estimated shortage of 44,000 – 46,000 primary care physicians anticipated by 2025, the federal government must act now to eliminate or dramatically reduce such a shortage. As a preliminary target, ACP recommends that the number of Medicare-funded GME positions available each year in primary care specialties that care for adults be increased to graduate 3,000 additional primary care physicians each year for the next 15 years to meet the nation’s anticipated health care needs (ACP, 2011).

COGME (2010) also calls for strategically increasing the number of new primary care GME positions and programs to accommodate the increased production of medical school
graduates and respond to the need for a workforce composed of at least 40 percent primary care physicians (COGME, 2010). An increase of this size may be extremely difficult to achieve, as the situation in Massachusetts following 10 years of state Health Care Reform demonstrates. Because the Massachusetts reform served as a model for the ACA, it is beneficial – and perhaps prophetic – to examine it.

Massachusetts Health Care Reform: Primary Care Physician Trends in the State and Implications for GME.

The parallels with reform in Massachusetts provide a preview of the potential implications of the ACA for the rest of the nation (see Appendix C for a summary comparison chart of the ACA’s to Massachusetts’ reform). While the impacts of the ACA will vary across the states, given the complexity if their health care systems and policies in place prior to reform and the differences in their choices under the ACA, the findings for Massachusetts are a confirmation that major gains in coverage and health care access are possible (Long, Stockley & Willrich-Nordahl), albeit not without limitations.

In April 2006, Massachusetts passed a comprehensive health reform bill, An Act Providing Access to Affordable, Quality, Accountable Health Care (Chapter 58 of the Acts of 2006), which sought to move the state to near universal coverage. That legislation provided the template for the 2010 federal ACA’s. Massachusetts’ reform initiative, like the ACA, includes, among other changes: an expansion of publicly subsidized coverage for low-and moderate-income people; the creation of health insurance exchanges for individuals and small businesses; insurance market reforms; a mandate that individuals obtain insurance coverage if affordable coverage is available; and a requirement that employers contribute toward health insurance premiums for their workers or face a penalty (Long, Stockley & Willrich-Nordahl, 2012).
In 2012, Massachusetts continued to benefit from the nation’s highest level of health insurance coverage following its 2006 health reform imitative. Health insurance coverage for non-elderly adults in the Bay State in 2012 continued at about 95%, well above 79.7 percent that is estimated for the nation overall in 2012. Employer-sponsored insurance (ESI) continued to serve as the backbone of insurance coverage in the state. In 2012, 63.6% of non-elderly adults in the Bay State had ESI coverage, up from 61.0% in 2006, and above the 61.5% for the nation as a whole in 2012. The sustained gains in insurance coverage, including ESI coverage, in Massachusetts under Chapter 58 highlight the potential for coverage gains for the rest of the nation under the ACA (Long & Fogel, 2014).

Massachusetts’ residents also have continued to enjoy many gains in access to health care and health care affordability that were achieved in the early years following the 2006 initiative. As of 2012, most non-elderly adults in Massachusetts were connected to the health care system and had chosen a facility they regularly used when they were sick or needed advice about their health (87.8%), most reported a doctor visit in the past 12 months (81.9%, including 74.7% with a visit for preventive care), and most rated the care that they received as very good or excellent (72.4%). However, some residents of the state reported problems obtaining the care they needed, including one-third (33.5%) who reported going without needed health care. While data for the nation as a whole are not available for all of these measures, estimates for the nation show 80.9% of non-elderly adults with regular source of care and 62.9% with a doctor visit in the past year (Long & Fogel, 2014).

Physician shortages in Massachusetts were projected across specialties and primary care even before the state’s health care reform legislation took effect, just as national shortages were anticipated before and following the ACA (Kirch, Henderson and Dill, 2012). Hence, the
Massachusetts Medical Society’s (MMS) Physician Workforce Study asked physician respondents to provide information regarding the availability of physician supply, recruitment efforts, alteration of services, or adjustment of staffing due to physician vacancies, shortages in specific specialties, and retention (MMS, 2013).

The MMS Physician Workforce Study learned in the eighth year of implementation, Massachusetts was facing its eighth-year of primary care physician shortages in Family Medicine and Internal Medicine (Massachusetts Medical Society’s (MMS) Physician Workforce Study, 2013). The Family Medicine shortage was classified as critical, and the Internal Medicine shortage was classified as severe. Pediatrics was described as a soft labor market (MMS, 2013).

The MMS 2013 health-care-wait-times study examined availability of and access to non-emergency new patient appointments in the following seven specialties: cardiology; internal medicine; family medicine; gastroenterology; obstetrics /gynecology (OB/GYN); orthopedic surgery; and pediatrics (MMS Patient Access to Care Studies, 2013). In 2013, among Family Medicine specialists, the average number of days a new patient must wait to see a physician decreased to 39 days, down from 45 days in 2012. Just over half (51%) of all family medicine physicians in Massachusetts reported accepting new patients, which is similar to the rate in 2012 (50%) (MMS Patient Access to Care Studies, 2013). The average wait time for a new patient to see an internal medicine physician in 2013 was 50 days, which is a 6-day increase over 2012, and the number of internal medicine physicians accepting new patients in 2013 fell to 45%, down from 51% in 2012. The wait time for a new patient to see a pediatrician has been studied only since 2010. Over the period 2010 – 2013, the average wait time has remained very steady at 25 days, with 70% of pediatricians accepting new patients in 2013 (MMS Patient Access to Care Studies, 2013).
The impressive MMS figures are given relevance by comparing them to the AAMC *State Physician Workforce Data Book*, (2013). This is a biennial report that examines current physician supply, medical school enrollment, and graduate medical education in the U.S. Key findings of the AAMC, (2013) report regarding physician supply and residents:

- Nationally in 2012 there were 225.6 physicians active in direct patient care per 100,000 population. Massachusetts had the highest number of patient care physicians per 100,000 population (324.1).

- There were 90.1 active primary care physicians per 100,000 population in the U.S. in 2012. Massachusetts had the highest number of primary care physicians per 100,000 population (131.9).

- In 2012, there were 80.7 primary care physicians active in primary care per 100,000 population. Vermont had the highest ratio, 115.0 per 100,000 population. Massachusetts had the third highest ratio, 110.9 primary care physicians active in patient care per 100,000 population.

- In 2011, the national average of residents and fellows in ACGME-accredited training programs per 100,000 was 36.6. Massachusetts had the highest ratio, 83.7 residents and fellows in ACGME-accredited training programs per 100,000.

- There were 13.6 residents and fellows in primary care program accredited by the ACGME per 100,000 population in the U.S. in 2011. Massachusetts had the third highest ratio, 26.1 residents and fellows in primary care program accredited by the ACGME per 100,00 population with New York the highest with 32.7 and Rhode Island second with 30.0 (AAMC, 2013).
Despite having a relatively high supply of primary care physicians and residents in primary care when compared to national findings, Massachusetts physicians reported a Family Medicine shortage classified as critical and an Internal Medicine shortage classified as severe (MMS Physician Workforce Study, 2013), and it is quite possible that the same will be true of the U.S., in spite (or because of) the ACA.

Affordable Care Act: Background, Rationales, Controversies, and Implications for GME

Health system reform is constant and global. Increasingly, most societies are preparing, legislating, implementing, assessing, or re-planning the health system reform as a “continuous policy improvement” cycle. Across the globe, the threefold objectives of reform are familiar: increasing access to medical services, improving the quality of care, and controlling the growth of costs. The “triple aim” of improving population health, lowering per capita costs, and improving patient experience of care, knows no borders. While each national government chooses priorities based on their circumstances and needs, the problems and solutions are similar (McDonough, 2014).

In the U.S., versions of national health reform have been considered for more than 100 years with notable successes and failures, mostly the latter. Yet in 2010, President Barack Obama signed into law the ACA, the most ambitious health reform program ever established in U.S. history. While many components were implemented between 2010-2013; January 1st, 2014 stands out as the point-of-no-return implementation date, and the repeal of this controversial law is now impractical (McDonough, 2014).

The ACA is the most transformative federal health law in nearly 50 years. As is typical of momentous laws, the ACA realigns several relationships that exist among the many players in the healthcare system. Patients, providers, insurers, employers, and governments are all forced
by the ACA to alter long-standing behaviors and practices. These realignments, more than anything else, aim to make health insurance newly available to millions of Americans. In a nutshell, the ACA’s legal reordering can be seen in four key policy decisions (Teitelbaum, 2014).

The first major policy shift is the requirement that all individuals either obtain “minimum essential coverage” through: an employer-sponsored health plan; an individual health plan; a government program, such as Medicaid or other government-approved coverage; or pay a tax defined in the ACA. The “individual mandate,” as it is commonly known, was a critically important beam in the ACA architecture. Because it creates a new pool of premium payers (i.e., those individuals who would forego insurance in the absence of the mandate), it created leverage for federal lawmakers who were eager for private insurance companies to accept many ACA insurance market reforms that, otherwise, would have been unpalatable (Rosenbaum, Teitelbaum, & Hayes, 2011). For individuals who cannot comply with the insurance mandate due to indigence, the ACA provides federal subsidies, and the law outright exempts from the mandate individuals whose income falls below $9,350 (Teitelbaum, 2014).

The second important piece of legal reordering is represented by insurance market reforms that force private insurers to alter normative behaviors. The ACA imposes new rules on insurers concerning the use of preexisting-condition exclusions; the role that an individual’s health status can play in enrollment decisions; the need for certain benefits to be included in insurance policies; and more. Specific examples include a prohibition on post-enrollment insurance cancellations (except in the case of fraud or misrepresentation on the part of the insured) and on the consideration of age, illness, or disability in making decisions about whether to cover an individual who has applied for a policy (Teitelbaum, 2014).
The third critical choice was to create new, relatively regulated Health Insurance Exchanges (or marketplaces) where individuals and small groups can analyze the products being sold by competing health insurers. Large employers that do not offer insurance coverage (or sufficiently affordable coverage) to their employees must pay a fee to the Exchanges, as a way to incentivize large employers and help prop up the fledgling marketplace. In those states that elect not to operate their own Exchanges, the ACA authorizes the Secretary of the U.S Department of Health and Human Services (HHS) to establish and run them (Teitelbaum, 2014).

Finally, and monumentally, the ACA expanded the Medicaid program to cover all U.S. citizens and legal immigrants between ages 19 and 64 with incomes below 138% of the federal poverty level (133% plus 5% that the ACA requires that states disregard when they calculate eligibility). For the low-income population, the importance of this reform cannot be overstated. Originally designed to finance healthcare services for the blind, the disabled, the elderly, and needy families with children, Medicaid in a post-ACA world could theoretically provide health insurance coverage to the entire non-elderly, adult poor population (Teitelbaum, 2014).

The Congressional Budget Office (CBO) and the staff of the Joint Committee on Taxation (JCT) estimate that the insurance coverage provisions of the ACA will increase the proportion of the non-elderly population with insurance from roughly 80% in the absence of the ACA to about 84% in 2014 and to about 89% in 2016 and beyond. CBO and JCT project that 12 million more nonelderly people will have health insurance in 2014 than would have had it in the absence of the ACA. They also project that 19 million more people will be insured in 2015, 25 million more will be insured in 2016, and 26 million more will be insured each year from 2017 through 2024 than would have been the case without the ACA (Congressional Budget Office, 2014). But increasing the number of insured was not the only goal of the ACA.
The ACA is divided into ten different titles dealing with issues ranging from expansion of insurance coverage to the Indian Health Care Improvement Act (Emanuel, 2014) (See Appendix D for a summary of highlights of each title). Title V – Health Care Work Force, is most germane to this study, as it contains several sections that are intended to address projected shortages of the primary care workforce.

The ACA targets primary care content in physician training through changes to the Public Health Service Act (PHSA) Title VII programs that support physician training in primary care and the Medicare GME program (Congressional Research Service (CRS), 2013). ACA Section 5301 reauthorizes PHSA Section 747, “Primary Care Training and Enhancement,” which provides grants or contracts to support medical students, residents, and faculty in primary care. The ACA amends this Title VII program to increase support for primary care training programs; to provide traineeships to students, residents, and faculty; and to support the development of innovative academic units in primary care. ACA Section 4002 establishes the Prevention and Public Health Fund (PPHF) to support investments in prevention and public health programs. Hence, under this program’s authority, Health and Human Services, through the Prevention and Public Health Fund (PPHF), began supporting additional primary care resident training beginning in July of 2011 for five years. This fund, which receives indefinite appropriations, received $750 million in FY 2010, of which $167.3 million was used to fund an additional 889 primary care residents. These residents entered three-year primary care training programs in July 2011 continuing through July 2015; therefore, these additional residents will complete their training in 2018 or earlier (CRS, 2013). In addition to these increases in funding, the ACA gave attention not only to the resident physicians but also to where they are trained.
In addition to expanding the parameters of the PHSA, the ACA authorizes a new initiative, the Teaching Health Center (TCH) GME program, that may encourage physician training in community-based settings. This was a 5-year initiative intended to expand the number of residents in primary care medicine and dentistry training in community-based, ambulatory care settings. Eligible GME programs include family medicine, internal medicine, internal medicine/pediatrics, obstetrics/gynecology, psychiatry, geriatrics, and general and pediatric dentistry (HRSA Bureau of Health Professions, 2012; IOM, 2014). Section 5508(a) authorizes grants to support the development or expansion of teaching health centers community-based, ambulatory care centers that operate a primary care residency program. Section 5508(b) permitted National Health Service Corps (NHSC) providers, who often fulfill their service commitment in teaching health centers, to count teaching time toward their NHSC service requirement. And finally, Section 5508(c) appropriated GME payments for teaching health centers, which are in addition to GME payments received from other sources (e.g., Medicare or the Children’s Hospital GME program) (CRS, 2013).

HRSA administers the THC grant awards and distributes the residency training funds directly to the participating sponsoring organizations. Eligible entities include federally qualified health centers, community mental health centers, rural health clinics, health centers operated by the Indian Health Service, and other ambulatory centers that receive funds under Title X of the Public Health Service Act. To date, most of the awardees have been residency programs in family medicine (HRSA, 2013; IOM, 2014).

The number of THCs and THC physician trainees has grown steadily since 2011, when the first HRSA awards were granted. In fiscal year (FY) 2013, 45 residency programs training 333 residents in 21 states were supported by THC awards (HRSA, 2013). Appropriations were
authorized only from FY 2011 through FY 2015 and were reconsidered by Congress each year during that period, making the long-term prospects of the program are uncertain. As a result, existing or prospective THCs may find it difficult to recruit future trainees without some assurance of future funding, as it takes three or more years to complete a residency program (Spero et al., 2013; IOM, 2014).

In addition to THC programs, the ACA also makes a number of changes to Medicare GME payments that may encourage primary care training. Section 5503 of the ACA redistributes 65% of unused residency positions to hospitals that meet a number of criteria (e.g., are located in a state with a low resident-to-population ratio or a state that has a high proportion of its population living in Health Professional Shortage Areas) and requires that 75% of these redistributed residency positions be used in primary care or general surgery. To ensure an overall increase in primary care residencies, it further requires that hospitals receiving additional positions maintain their pre-redistribution level of primary care residents. The ACA requires changes to how the Medicare program counts time spent by residents in non-hospital (i.e., community-based) settings to increase payment for time spent in these settings, which may remove a barrier often identified as reducing primary care exposure in training (COGME, 2010). Section 5504 amends Medicare GME payment rules to count resident time spent in non-hospital settings for direct and indirect GME payments, provided that the hospital incurs most of the costs of the residents’ stipends and other benefits while in the non-hospital setting. Section 5505 permits hospitals to count resident time spent at conferences and seminars in non-hospital settings for GME payments (CRS, 2013).

All of these well-intentioned provisions by the ACA obviously demand oversight, and to provide data on the health care workforce and offer impartial advice to Congress and the
administration on workforce policy, the National Health Care Workforce Commission was established under section 5101 of the ACA. Among a formidable set of activities outlined in the law, the Workforce Commission is charged with communicating and coordinating with different government agencies over workforce policies; developing and commissioning evaluations of workforce education and training programs; identifying barriers to improving coordination of federal, state, and local workforce policies; encouraging workforce innovations to address population health needs; and producing two reports annually on key workforce issues (Buerhaus & Retchin, 2013). Funding for the Workforce Commission must be renewed each fiscal year, but, in spite of a petition from three dozen health professionals’ organizations encouraging continued funding (Buerhaus & Retchin, 2013), the Fiscal Year (FY) 2015 Budget of the U.S. Government submitted by President Obama on March 4, 2014 did not request funding for the National Health Care Workforce Commission (AAMC, 2014).

The FY 2015 Budget did call for investing approximately $14.6 billion over 10 years to implement innovative policies to train new health care providers and ensure that the future health care workforce is prepared to deliver high-quality and efficient health care services. To encourage and enhance training of primary care practitioners, and other physicians in high-need specialties, the Budget proposes $5.23 billion over 10 years to support 13,000 new residents through a new competitive graduate medical education program that incentivizes high-quality physician training (FY 2015 Budget).
CHAPTER 3: RESEARCH METHODS

Introduction

The almost mind-numbing blizzard of acronyms, funding policies and appropriations, and agencies related to GME within and peripheral to the mandates of the Affordable Care Act leads inevitably to the question of what it means in the Real World of Graduate Medical Education. To answer that question I determined to do a case study of the Acorn Primary Care residency program affiliated with Oak Care Teaching Hospital operating within a multi-hospital health system, Forrest Tertiary Health Care System. In this chapter, I explain why I chose this particular method. I then recount the considerations that affected the selection of the particular site, program, and participants and provide descriptions thereof. I report the methods of data collection and analysis, and address the issue of trustworthiness in research. The chapter closes with comments on my role as researcher and the limitations of the study [Author’s note: The identity of the host health system and teaching hospital and the residency program parties interviewed will remain anonymous unless permission to disclose is granted by the hospital and subjects interviewed.]

Sullivan and Sargeant (2011) state that many important medical education research questions cry out for a qualitative research approach: How do teacher characteristics affect learning? Why do learners choose particular specialties? How is professionalism influenced by experiences, mentors, or the curriculum? The medical paradigm, the “hard” science most often taught in medical schools, usually employs quantitative approaches (Bordage, 2007). As a result, clinicians may be less familiar with qualitative research or its applicability to medical education questions. For these why types of questions, qualitative or mixed qualitative and quantitative approaches may be more appropriate and helpful (Lingard, 2007).
Quantitative research uses a positivist perspective in which evidence is objectively and systematically obtained to prove a causal model or hypothesis; what works is the focus (Denzin & Lincoln, 2005; Sullivan & Sargeant, 2011). Alternatively, qualitative approaches focus on how and why something works, to build understanding. In the positivist model, study objects (e.g., learners) are independent of the researchers, and knowledge or facts are determined through direct observations. Also, the context in which the observations occur is controlled or assumed to be stable. In contrast, in a qualitative paradigm researches might interact with the study objects (learners) to collect observations, which are highly context specific (Denzin & Lincoln, 2005).

Maudsley, 2011 states that qualitative research has often been differentiated from quantitative as hypothesis generating rather than hypothesis testing. Qualitative research strategies explore, describe, or generate theory, especially for uncertain and ‘immature’ concepts (Morse, 1991); sensitive and socially dependent concepts (Roche, 1991); and complex human intentions and motivations (Harris, 2003). This generally ‘case-oriented’ (not ‘variable oriented’) (Punch, 1998) research favors open-ended questions, unstructured approaches, and highlighting differences rather than averaging responses (Roche, 1991). (Classifications abound – for example, Creswell (1998) outlined five main traditions (from about 20): biography/narrative, phenomenology (underused in medical education), grounded theory, ethnography, and case studies (Maudsley, 2011). The qualitative method of case study was selected for this study based on the discussion below.
Design of the Case Study

Choosing the Case Study Method

My research question – specifically, “How is an individual primary care graduate medical education residency program affected by and responding to the implementation of the Affordable Care Act and the current and projected primary care physician shortages exacerbated by the Affordability Act?” – immediately suggested the possibility of a case study methodology, as case studies are appropriate when one’s research addresses either a descriptive question – “What is happening or has happened?” – or an explanatory question – “How or why did something happen?” As contrasting examples, alternative research methods are more appropriate when addressing two other types of questions: initiatives effectiveness in producing a particular outcome (experiments and quasi-experiments address this question) and how often something has happened (surveys address this question). However, the other methods are not likely to provide the rich descriptions or the insightful explanations that might arise from doing a case study (Yin, 2012).

The case study is preferred in examining contemporary events, but only when the relevant behaviors cannot and will not be manipulated by the researcher, as in my study of a primary care residency program. The case study relies on many of the same techniques as a history, but it adds two sources of evidence not usually included in the historian’s repertoire: direct observation of the events being studied and/or interviews of the persons involved in the events. The case study’s unique strength is its ability to deal with a full variety of evidence – documents, artifacts, interviews, and observations – beyond what might be available in a conventional historical study (Yin, 2009).
Single cases are a common design for doing case studies with two variants: those using holistic designs and those using embedded units of analysis. Overall, the single-case design is eminently justifiable under certain circumstances – where the case represents (a) a critical test of existing theory, (b) a rare or unique circumstance, or (c) a representative or typical case, or where the case serves a (d) revelatory or (e) longitudinal purpose (Yin, 2009). Because I wanted to examine the effect of a rare circumstance (the initiation of the ACA) on a representative entity (a primary care residency program), I chose a single descriptive case, Acorn Primary Care, which is described below.

Another consideration was whether or not I was personally equipped to undertake a case study. Yin, (2014) describes a basic list of desired attributes for one to be a successful case study researcher: Ask good questions-and interprets the answers fairly. Be a good “listener” not trapped by existing ideologies or preconceptions. Stay adaptive, so that newly encountered situations can be seen as opportunities, not threats. Have a firm grasp of the issues being studied, even when in an exploratory mode. Avoid biases by being sensitive to contrary evidence; also know how to conduct research ethically. I believed Yin’s description and my personal and professional methods were a good match and that a case study examination was particularly well suited to me.

Due to its exemplary reputation, I choose the Acorn primary care residency program, affiliated with Oak Care Teaching Hospital, a prominent physician-training facility operating within a multi-hospital health system, Forrest Tertiary Health Care System.

The Acorn Primary Care residency program practices within the Patient-Centered Medical Home (PCMH) model of care, defined above, which provides residents the opportunity to practice within what has been described the model of care of the future. The residency
program faculty practice is accredited and has level three recognition as a PCMH, the highest level attainable awarded by the National Committee for Quality Assurance. As we have seen, the ACA promotes establishment of and improvement to PCMHs as foundations for a healthcare system that gives more value by achieving the “triple aim” of better quality, experience and cost.

Within the broad concept of the case study are several approaches to gathering data, and, as noted, one of the strengths of case study method is the synthesis of data from various sources. My intention was to highlight the post-ACA real-life experiences of primary care physicians and residents, so I chose on-site interviews as the main method of gathering information, with examination of pertinent documents a secondary method.

Following approval by the University of Pennsylvania Institutional Research Board, a petition was made to the health system’s senior academic medical officer, requesting permission to recruit one of the health system’s primary care residency programs into the study. There was a discussion as to which of the health system’s primary care residency programs the senior academic medical officer would allow to be studied. My review of all the health system’s primary care programs prior to the discussion with the academic medical officer allowed for a degree of negotiation on site selection. Ultimately my request for Acorn was approved.

Once granted permission to conduct this study, faculty and resident interviews were scheduled with the primary care residency program coordinator on dates / times convenient for the interviewees. The unit of analysis was studied February – March 2014. All interviews were held at the ambulatory care location, which housed the outpatient clinical practice and faculty offices of the Acorn Primary Care residency program. The ambulatory care location provides a full range of expert primary and multi-specialty services. Each interview was held in a private
office, which allowed for a confidential and uninterrupted discussion. Prior to the start of the interview, all interviewees reviewed and signed the attached Inform Consent approved by the Institutional Research Board (see Appendix E).

Data Collection

In addition to reviewing pertinent literature, Forrest Tertiary Health Care System and Acorn Primary Care documents regarding the residency program were examined. Because I was seeking to evaluate real-life experiences in a changing and/or changed environment, the primary method of data gathering was the conducting of one-on-one interviews of principal Acorn participants, using a semi-structured technique. Due to the time-intensive nature of the unit of analysis practice and as a condition of the academic medical officer permission, 50% of the medical faculty (5 of 10) and two residents (one third year and one second year) were interviewed. The final participant group was intentionally selected to reflect a varied representation in experience, age, gender, race, ethnicity and medical degree (D.O. / M.D.).

Designing the Interviews

Primary questions for the participants were formed based on the issues relevant to primary care graduate medical education identified with the literature review. Secondary questions asked were developed following review of the data shared by the first faculty participant, who share a great deal of material.

The interview protocol (see Appendix F) consisted of two primary open-ended probing questions asked of each participant that allowed the participant to provide additional details with his/her answers. Following the first interview with a faculty participant, the protocol was expanded to include questions about their insights to best practice, the role of advocacy and
desired model of care delivery that supports primary care graduate medical education, questions were identified as potentially important by the first interviewee. The interviews lasted approximately 60 minutes each. There were a total of seven interviews that were audiotaped and transcribed verbatim, resulting in 102 pages of transcription.

In addition to the semi-structured interviews’ in-depth questions, the multi-hospital health system’s mission statement and current strategic plan, which supports the primary care residency program, were examined. Also the Acorn primary care graduate medical education residency program mission and goals were reviewed.

Trustworthiness in Case Study Research

Baxter and Jack, (2008) asset that for the novice researcher, designing and implementing a case study project, there are several basic key elements to the study design that can be integrated to enhance overall study quality or trustworthiness. Researchers using this method will want to ensure enough detail is provided so that readers can assess the validity or credibility of the work. As a basic foundation to achieve this, novice researchers have a responsibility to ensure that: (a) the case study research question is clearly written, propositions (if appropriate to the case study type) are provided, and the question is substantiated; (b) case study design is appropriate for the research question; (c) purposeful sampling strategies appropriate for the case study have been applied; (d) data are collected and managed systematically; and (e) the data are analyzed correctly (Russell, Gregory, Ploeg, DiCenso, & Guyatt, 2005; Baxter & Jack, 2008). Case study research design principles lend themselves to including numerous strategies that promote data credibility or “truth value.” Novice researchers should also plan for opportunities to have either a prolonged or intense exposure to the phenomenon under study within its context so that rapport with participants can be
established, multiple perspectives can be collected and understood, and potential for social desirability responses can be reduced (Krefting, 1991: Baxter & Jack, 2008).

Data Analysis

The purpose of this study is to better understand market factors and the federal Graduate Medical Education policies that have contributed to the shortage of primary care physicians and the challenge of the primary care delivery system to meet effectively the projected demand due to the ACA. The data collected provides insight to the impact and response of Acorn Primary are graduate medical education program to the implementation of the Affordable Care Act and the projected shortage of primary care physicians exacerbated by the implementation of the Affordable Care Act.

During the first phase of the data analysis, the interview transcripts were read several times to gain an overall understanding. After that, key statements were noted in order to identify any emerging pattern. Triangulation of data sources and data types, a primary strategy, was used to support the principle in case study research that the subject be viewed and explored from multiple perspectives. The collection and comparison of data enhances data quality based on the principles of idea convergence and the confirmation of findings (Knafl & Breitmayer, 1989: Baxter & Jack, 2008). Triangulating each interview data set obtained identified common themes.

In addition to interviewing faculty and resident students, I examined the Acorn program’s sponsoring health system’s mission statement and strategic plan, seeking evidence of the importance of primary care resident education to the Forrest Tertiary Health Care System. Acorn’s mission document was also studied.
Study Limitations

The study is limited to the collection of data from a single primary care residency program. This focus, though facilitating an in-depth discussion, reflects only the opinions and perceptions of the participant faculty and residents of a single primary care residency program. In addition, the unit of analysis represents only one of the three principle primary care residency programs in family medicine, internal medicine and pediatrics. Data analysis did not allow for another researcher to review the data independently so that the themes identified could be agreed on. Also, the participants were not asked to review the transcript of their interviews in order to correct or clarify, as needed their responses. The selection of the unit of analysis was in part due to convenience to the researcher. The selection of the interviewees was limited to 50% of the faculty to avoid over burdening the medical staff and residents of a time-demanding patient practice.

The study was also limited in that it occurred in a PCMH based primary care practice residency program whose responses and methods might differ from those on a non-PCMH based primary care practice residency program.

Role of the Researcher

My role as the researcher in this study is to provide background information in the literature sufficient to yield understanding of the many factors affecting Graduate Medical Education in the U.S. To develop that understanding fully, the Massachusetts statutes, the ACA statutes, and overall implications of past federal policies on GME were studied. Also the conceptual framework of resident learning was reviewed. Once on site, my role was to facilitate interviews in such a manner as to draw out the interviewee and elicit the most complete and candid responses possible. To that end, I employed all of Yin’s best practice techniques. In
addition, I carefully read and interpreted institutional data, including mission statements and strategic plans, establishing the place of GME primary care resident training in the overall health system hierarchy.

My professional and educational background should be considered as how it may influence my interpretation of the data collected in this investigation. My primary professional experience is that of clinical operations director of rehabilitation services for several institutions and health systems. My secondary professional experience has been as academic adjunct faculty member of the graduate physical therapy programs of Thomas Jefferson University, Philadelphia, Pennsylvania and Arcadia University, Glenside, Pennsylvania. The topics of instruction I have provided for both academic programs have been health policy topics and administration and organization of physical therapy clinical practice. My expertise in health policy topics reflects not only my clinical operations experience but also my background in health law in which I hold a master of laws degree. My educational background is a bachelor of sciences, physical therapy and a dual degree of juris doctorate / masters of business administration.
CHAPTER 4: FINDINGS

Introduction

In this chapter, I first present the review of the health system subject documents that provide evidence of the health system’s commitment to primary care medical education. Second, as case study research methodology emphasizes the importance of the “where” of narrative research, I provide the context in which interviews were conducted. Next, I report the common themes that emerged from the individual interviews of faculty and residents of a primary care graduate medical education residency program are presented. These findings provide insightful answers to the research question presented in Chapter One, namely: How is an individual primary care graduate medical education residency program affected by and responding to the implementation of the Affordable Care Act and the current and projected primary care physician shortages exacerbated by the Affordable Care Act?

Document Analysis

Health System Mission

The Acorn Primary Care residency program operates within the organization of Oak Care Teaching hospital, which is a member of a multi-hospital health system, and therefore their practices and philosophies cannot be considered entirely independent from one another. Hence, I reviewed the health system’s mission statement and strategic plan in order to gain and understanding of the degree to which the health system values and supports the Acorn Primary Care residency program.

A mission statement summarizes the fundamental purpose of the organization. It concentrates on the present, defining critical processes, expanding the customer base, and achieving the desired level of performance. The health system’s stated mission is to provide a
comprehensive range of safe, high quality health services, complemented by related educational and research activities that meet the healthcare needs and improve the quality of life in the communities served. The system’s commitment to educational activities is demonstrated by supporting several Fellowship programs and Residency programs which include the Acorn Primary Care graduate medical residency program.

Health System Strategic Plan

The current health system’s 5-year strategic plan was developed following extensive organizational study and reflection on the state of health care in general, and the state of the organization in particular, focusing especially on the health system’s goals and demographics. Preliminary study included

1. comprehensive analysis of the external and internal environments, including facilities/growth/utilization needs;
2. construction of plausible scenarios about how the health system’s business environment might develop in the future; and
3. review and feedback by organizational and physician leadership.

These external and internal assessments led to the conclusion that the health system must take several strategic actions. While all of the strategic actions impact the Acorn Primary Care residency program in some way, the following three actions are the most relevant:

1. partner with its community and patients to promote wellness, improve healthcare quality and reduce healthcare costs.
2. create models for economic and clinical alignment with the medical staff.
3. attract, invest in and retain an exceptional workforce and medical staff, recognizing the looming physician shortage and workforce challenges.
These three actions are of particular worth and demonstrate a clear understanding of the directives of the ACA to modify and develop the PCMH model of care whose success rests largely on the shoulders of the primary care physicians and their clinical team. The first action demonstrates patient-centeredness as well as a response to the mandate to keep patient cost down. The second indicates a commitment to collaborate with the medical staff when innovation in reimbursement by public and private insurance, promoted by the Affordable Care Act, such as the Accountable Care Organization model, which encourages the PCMH model of care. The third shows a clear understanding of the current national scene and a commitment to use the health system resources as efficiently as possible in order to help ameliorate ACA’s predicted workforce shortages. By inference, then, the health system is aware of Acorn’s challenges and dedicated to assist in meeting them.

Once these actions had been determined, the Strategic Plan, comprised of several initiatives, was devised. The Clinical Education initiative—to develop the next generation of clinicians for the health system through high-quality educational programs and strong academic affiliations—most directly affects the Acorn program.

The goal of the health system’s Clinical Education initiative is to optimize its academic affiliations and relationships, its residency/fellowship programs, and Graduate Medical Education/Continuing Medical Education to support current and future health system medical staff. In order to meet the Clinical Education Goal, several objectives are described within the Strategic Plan, two of which directly impact the Acorn program. These two objectives are:

- ensure that all health system residency and fellowship programs meet or exceed all residency review standards by developing a long-term plan for Graduate Medical Education at the health system.
• enhance the health system's primary care physician base through development of the Family Practice, Osteopathic Family Medicine, and Internal Medicine graduates and placement of at least 50% of them into health system facilities annually.

The second objective demonstrates a high level of commitment by the health system regarding recruitment of primary care resident graduates post residency.

Further evidence of strong support for primary care development can be seen in the Acorn’s stated goals.

Acorn’s Mission and Vision

The Acorn’s Resident Education web pages provide program overviews for medical students applying for potential residency openings of any of the programs described. The overall goal of the Acorn Primary Care Residency Program is to educate graduate physicians to become specialists in primary care, physicians who assume the responsibility for providing comprehensive, quality healthcare for the patient and family. To these ends, the Residency Program provides the proper settings, educational experiences and resources so that primary care physicians can learn to be competent, board-certified, compassionate primary care doctors.

Acorn’s stated vision is that the primary care physician, now and in the future, holds a key position in any healthcare system. By being part of an integrated healthcare system, its primary care residents are able to provide comprehensive care to patients, regardless of their age, disease, or socioeconomic status. This vision aligns with the Affordable Care Act’s promotion of improved health care quality delivered with increased efficacy through a patient-centered, comprehensive, and integrated model of care. Moving from avowed missions and plans into actual problem solving and maximum development of all resources can be difficult to
impossible to do. The commitment of the health system to Acorn’s mission having been established, it remained to determine how the actual residency program was faring post ACA. The next section presents each of the five themes that emerged from analysis of the program’s faculty and residents’ interviews.

Interview Common Themes

In order to gain participants’ insight on the basic research question of how an individual primary care Graduate Medical Education residency program is affected by and responding to the implementation of the Affordable Care Act and the current and projected primary care physician shortages exacerbated by the Affordable Care Act, the primary questions in the interview protocol were: How is the Acorn primary care residency program affected by and responding to the implementation of the Affordable Care Act and the current and projected primary care physician shortages associated with the Affordable Care Act? And how are the Acorn program faculty encouraging residents to remain in general primary care practice after graduation from the primary care residency? As noted, more questions were added as a result of the first faculty interview. Five themes developed from interview responses. The first two were the overall impact of the ACA on Acorn, and on Acorn’s development of PCMH attributes. In terms of responding to the predicted shortage of primary care physicians, three more themes became apparent: various types of advocacy in several areas including patients, resident students, and the PCMH concept: increasing physician interest in primary care through role modeling (and specifically modeling the joy of practice); and the PCMH as the preferred model of care.
Overall Impact of the Affordable Care Act (ACA)

As the literature shows, in spite of the rancor invoked by continued Congressional opposition to the ACA, the literature suggested a number of probable positive effects of the Act on primary care residency programs, particularly those operating in a PCMH model, among them the adjustment of payment schedules for Medicare patients (and a large increase in Medicaid eligible patients) and provision for a bonus of 10 percent to primary care practitioners working in programs eligible for Medicare funding (Abrams, et al., 2011). In addition, the ACA mandates for insuring heretofore uninsured individuals and adjustments to the screening methods of private insurance benefit plans was expected to increase patient demand for primary care services.

The first faculty participant, Dr. Smith, asserted that one of the benefits of the ACA has been that “on a patient care side . . . it gives us the ability to enroll people in the system and provide resources and track and look at their outcomes in a way that they were marginalized from participating in before”. [Prior to the ACA] “we were making magic out of nothing,” and there was often the need “to provide these services to people [who had] no [insurance] assistance, giving out sample drugs, doing everything we can and not charging the patient.” Obviously, such measures reduced the quality and length of care that could be given under the circumstances. Dr. Smith was quick to explain that “I’m not happy that now we can charge the patient. I am just happy that they can be linked to some resources without begging on a case-by-case basis.” (The remainder of Dr. Smith’s interview responses pertained to changes in the way residents are being trained at Acorn, advocacy efforts by the faculty, and how the PCMH model operates. The insights gained from Dr. Smith’s comments caused me to add specific questions to the protocol regarding these three important aspects of resident training at Acorn, as I realized
that these issues were integral to answering the part of the question that dealt with response to primary care physician supply.)

Not surprisingly, all faculty participants note improvement in patient care with the increasing number of insured patients due to the ACA. The second faculty participant, Dr. Jones, noted, “We are less often confronted with the dilemma of recognizing a serious medical condition in a patient who is uninsured and unwilling to have evaluation and treatment for that condition.” The fourth faculty participant, Dr. Brown, noted that “the Affordable care Act, ... the implementation of the once-a-year free, no co-pay wellness examination ... has certainly opened doors, at least to get some new patients in to see their primary care physician.” Dr. Hughes, the fifth faculty participant added, “our parent company has been incentivized by these [ACA] policies to emphasize primary care and its changing relations, positioning primary care at the center of initiatives to improve quality and access.” The resulting benefit has been that “there has definitely been an increased priority on organizing services and enhancing services around primary care that allows us to get more resources.” And Dr. Smith added,

[ACA] gives a little wind in our sail when we need to bang our fists on the table to ask for resources and although the hospital I think is risk aversive at reactionary rather than proactive ... we [in Acorn] are defining for the hospital as thought leaders what is the future of primary care.

Unfortunately, I don’t think the patients understand what the point of that visit is many times. I think many times they see that as an opportunity to ... get into the door, into the office, but at the same time to, in many ways, for lack of a better word, “dump” a lot of health care issues which are absolutely concerning and you’re trying your best to triage many of those things. But, again it’s opened the door.
With regard to changes made by private insurance plans as a result of ACA, Dr. Brown noted another possible negative ACA impact on patients and the program practice.

Interestingly, one of the other things I’ve seen because of ... the Affordable Care Act ... is how many of the other private insurance plans have changed ... specifically with many of the higher deductible plans now that ... we’ve seen. That has really limited patient care in that many of the patients now, if it is a three thousand of five thousand dollar deductible, view it as three thousand or five thousand that I can keep in my pocket as opposed to I should use that for my health care, and so many don’t go to see their primary. So interestingly, the patients with private insurance minimize their contact with their physician because of those higher deductible plans as well.

After reflecting on the question of ACA impact, the fifth faculty participant, Dr. Hughes, stated, “I think the biggest way we’ve been impacted is the legitimatization of what we are teaching to medical students and residents and the value that we bring to our parent organization.” When asked how much of an impact has the ACA been to the primary care residency program, the same faculty member stated, “I think it’s very significant. I think it shows a lot of potential. I think it’s just the beginning and I hope it’s not the sum total of what we do. “

Dr. Hughes, while noting a significant positive impact of the ACA, reflected there are still needs regarding resources not yet being fully met by stating

I think that the resources that flow to primary care as a result of all this legislation [ACA] has may be widened from a trickle to, you now, a little bit more of a flow. It’s still not the gushing that is required in order to really fulfill the promise of patient-centered medical homes, clinical integrated networks, and ACOs [Accountable Care Organizations] to bring our country’s health care quality and access up to where it should be and have it truly be world class. So I think that all this legislation has been positive and in some ways it has been a breakthrough, but it has not quenched the thirst for resources and interest in what we are doing.

The ACOs noted by Dr. Hughes is important due to the fact that the Affordable Care Act has propelled not only an expansion of health insurance coverage, but also reform in how health care is organized and delivered through the concept of the Accountable Care Organization (ACO). An ACO is defined as “a provider-led organization whose mission is to manage the full
continuum of care and be accountable for the overall costs and quality of care for a defined population” (Rittenhouse et al., 2009; Bodenheimer & Grumbach, 2016)). The Affordable Care Act authorized Medicare to initiate an ACO program beginning in 2012 (Gold, 2014; Bodenheimer & Grumbach, 2016). In 2015, the Medicare Shared Savings Program included 404 ACOs in 49 states. Medicaid, private insurance plans, and large employers have followed suit with their own ACO programs. The number of ACOs in the United States has risen rapidly from 41 in 2010 to 744 in 2015, covering 24 million and projected to cover 70 million by 2020 (Muhlestein, 2015; Boenheimer & Grumbach, 2016). Dr. Jones shared another observation, related to ACOs, of how the parent health system is responding to ACA impact on the market.

With formations of the ACOs (Accountable Care Organizations), health care systems like our parent health system and a regional academic medical center have other ways of buying practices or incorporating practices as doctors just … don’t want to manage themselves and all these alliances between health care that come and go. And it’s all driven by, seems to be driven more by business than the desire to provide better health care. And it’s partly driven by the changes of the Affordable Care Act. I think it’s going to all sort itself out. In the meantime, it provides an unstable environment … whether it’s private practice, or a system-centered, or a system-linked practice like ours here, to maintaining and continuing to improve what we are doing.

Model of Care

At the center of ACO integrated health care delivery is a high-performing primary care provider who can serve as a medical home for patients (Aetna Foundation, 2010; Boenheimer & Grumbach, 2016). The Acorn primary care residency program practices within (PCMH) model of care, thus providing residents the opportunity to practice within the model of care that the literature suggested is the future of health care. The Acorn primary care residency practice has a level three (the highest) recognition as a PCMH by the National Committee for Quality Assurance. PCMHs are foundations for a healthcare system that gives more value by achieving the “triple aim” of better quality, experience and cost.
All of the Acorn faculty and resident participants expressed that the patient-centered medical home model of care was ideal for training future primary care physicians. Dr. Jones stated that PCMHs,

Can really multiply the energies of an individual physician so that they can take better care of a larger patient population. And that’s through increased teamwork and also putting the patient at the center of the care so the patient actually is doing more themselves and also having protocols in place so the doctor does not have to revisit situations on a case-by-case basis that could be handled through standing orders.

Dr. Hughes added that “The patient centered medical home has been very important because the model clarifies how a primary care office should be organized and what performance measures would be important in actualizing the vision of primary care.” Both resident participants had positive comments regarding the patient centered medical home model. The first resident, Dr. Hubert, said

So when I do graduate, I’d like to have like a medical home type of setting ... [W] e also sometimes do home visits and I think that is extremely valuable because it gives you a better idea of what this patient is dealing with, what the barriers are for ... getting to that point where I want them to be at to be, ... to have a more healthy, productive life. I think it gives you more in-depth understanding of what this patient is struggling with if I am able to ... interact with ... other faculties, other specialties. Take for instance a social worker or a nurse practitioner who was able to have home visits and come back and give me first-hand [information] about what he saw ... That is happening in our program, and I hope that wherever I go I am able to ... be part of something like this because this is what you are getting trained in ... I think it definitely adds value to how you would ... dispense ... medical care and how it could be more effective.

The second resident, Dr. Collins, offered that “I think it’s ... a great model and it definitely, I think it’s a win – win ... I don’t see any real downside to having that type of construct in delivering patient care.”

Dr. Smith described how the PCMH in light of the ACA “changes the way we teach our residents”.  

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It changes the people that recruit into the program because we want people who understand and are invigorated with fire in their belly to provide this kind of comprehensive care. [W]hat it means to me is a lot more than maybe [it does] even [to] other primary care docs, because I am bringing in a group, I am training them in an environment and then I am releasing them into an environment that is looking for people with those skills to lead a multi-disciplinary team of providers to understand the role of a physician as a leader with everybody working at the highest level of the scope of their ... credentialing and to be part of that team. And so for me taking someone who is a medical student all the way through that process and having him out in practice is incredibly rewarding but it is, you know, almost sanctioned now by the Affordable Care Act because the only way to be successful is to do that.

Listening to the participants describe the resident experience from the viewpoints of both faculty and resident student provided a distinct recognition of the means this particular residency program employs and the ends it hopes to gain.

The ends were stated succinctly by Dr. Brown, who said ... as much as we want primary care physicians, we do not want just the bodies into primary care ... [W]e want quality physicians to come out of that pipeline because ultimately you’re coming back to patient care again, so just another primary care physician is not our goal [but rather] a primary care physician that is deeply invested in the patient care and understanding of what it is.

As the interviews progressed, the means to that end were thematically represented by three concepts: advocacy, role modeling as a way to encourage residents to remain in primary care practice, and sharing the faculty’s lived joy in practice.

Advocacy

The faculty interviewed provided several examples of their role of advocates. They described advocacy activities on behalf of their patients locally and of patient-centered primary care and training of primary care residents at the national, state and / or local levels.

All faculty and residents interviewed indicated their role of patient advocate was a constant. Dr. Brown said Acorn faculty engage in patient advocacy “even as we teach.” Because
many patients do not understand their patient rights and responsibilities, “one of the projects we are doing here is health literacy”.

There’s a lot of words thrown around, and you’re advocating for [the patients] as a ... medical professional, but also, ... as far as a lot of the social stuff that goes along, you’re advocating that way as well.

In addition to day-to-day patient advocacy, Dr. Hughes explained his role of advocate for the primary care residency program in relation to the health system resource allocations as,

I am involved with supporting our program director in his efforts to get resources. I’m also involved at a system level in efforts to get resources ... [A]nd we have been quite successful recently, and I think it is due ... at least in part to this new legislation [ACA]. I see significant gains in the resources that our residency program and primary care doctors in our system have received. But like I said ... it is not, it’s not yet enough... [Y]ou knew you needed a lot and you knew you were surviving on less than what you needed but you didn’t really think about it that much. And then so we’re now able to think about it and it’s very clear that we need so much more than what we have, ... it’s almost like quantifying the needs to have made them even more apparent. The opportunity to quantify the needs, enumerate them, start to work them, it almost, ... it’s like anything else, it creates more questions and more areas of need.

As we have noted, funding for some ACA-sponsored initiatives was limited to a particular time frame, and other healthcare funding sources are reviewed and reapportioned on more or less a regular basis. In addition, some entities requesting governmental or foundational approvals do not always have the welfare of the patients as a top concern. Hence, advocacy at the national level is exponentially more complicated and difficult, as Dr. Jones’ comments demonstrated.

We are competing [for resources] with people from pharma industry [and the] medical technology industry, who are all waiting in line at their legislatures offices. If [at] the state and national level [they are] pushing for legislation that will improve their business environment without regard to the needs of the patients, there is scientific evidence in many cases that tell us whether or not that technology [or drug] that they are promoting is even effective and safe. So, they are competing with us for those legislator’s time, for one thing, and also when they get involved in expressing their opinions on health care legislation like the Affordable Care Act then it’s a really difficult battle because you have to be in that struggle every day. Not necessarily individual
doctors but a subset willing to go lobby and then people that work for academies [professional medical groups] to lobby for us.

Finally, the Acorn faculty strongly encourages each resident and medical student they work with to practice in general primary care post-graduation.

Resident Encouragement to Practice Primary Care Post Residency

It was not surprising to learn that the Acorn primary care program demonstrated deep concern about the projected physician shortages and took seriously their personal responsibility to promote primary care as a career choice. What I had not anticipated was the significance role modeling played in this process, the manner in which it is being conducted at Acorn, and the depth of commitment to primary care and their resident physicians evidenced in faculty responses. In turn, the residents interviewed confirmed the strong tutelage of the faculty physicians. With regard to encouraging residents to remain in primary care post-graduation, Dr. Jones asserted “We see that as our mission every day”.

When asked “How does faculty encourage residents to remain in general primary care practice after graduation from the primary care residency?” The third faculty participant, Dr. Joseph, described how “we give them different models to look ... depending on their interests’. Dr. Hughes shared that for residents,

They’ve at least committed to three years of learning about how to be a primary care physician. We nurture them. We insulate them. I don’t mean insulate them by making them ignorant of what’s going on outside but we take their interest in primary care and we daily give them infusions of support and practical linkages as to how do you make this work. We encourage them to pursue whatever interest within primary care they have, be that procedures, sports medicine, psychiatric stuff ... we nurture their interest and we emphasize the relationships that they build with patients, the breadth of practice that primary care physicians enjoy.

Dr. Smith spoke for the majority of faculty saying that,
We role model. We show residents what it’s like, the satisfaction of really being there and helping patients who can’t navigate for themselves and advocate for themselves and how rewarding that is in good times and bad to help them with things or just experience and witness their pain, to be there for their families.

Dr. Smith added that resident encouragement is “by role modeling how incredible it is to be a doctor and do primary care…. I came here as a resident and I was chief resident and I graduated and I have stayed here.”

Dr. Hughes became quite animated when describing that,

People whom are interested in primary care during college or medical school or both ... have to navigate an obstacle course to get there. In some ways it’s easier than getting to other specialties but from a cognitive, psychological, psychosocial perspective, there are significant obstacles to it, and there is a paucity of positive reinforcement, and a paucity of material, so when they arrive here we welcome them! I hope that they see it as ... we want this to be like the chocolate factory ... like oh my god this is what I’ve been waiting to do ... [S]o we model that passion and that rapport and that interest in people’s ... problems ... and ... I hope that what they see when they get here is just an opening up of opportunities for them, that ... previously has been sort of squelched or choked. One of the resident participants was asked, “As a third year resident, when you have interactions with medical students, do you find yourself seeing that as an opportunity for you to actually promote primary care at times?” The answer was, “I do. I am specializing within primary care. I now encourage ... students who come in not only to keep an open mind, but also to really explore or to consider primary care.”

When asked if the faculty encourage and motivate you to remain in primary care, Dr. Collins responded,

Yes ... I see how the faculty deals with their patients. I learn every day and it just ... further confirms that I feel like I’m doing something useful with my time, with my education. I feel like I’m making a difference and I see my attending, [physician] ... exemplifying that every day to me.

Long before becoming residents, medical school students are introduced to various specialties through rotations during their tenure there. The faculty at Acorn sees these rotations as a prime opportunity to interest medical students in choosing a primary care career. Many of these students “come in ... with a very limited understanding of primary care and [Dr. Brown
and another faculty member] coordinate the medical student experience. ‘ Part of what they try
to do is counter any negative influences that these students might already have been exposed
to, what Dr. Brown called “a culture of ... putting down what primary care does ... especially ...
from our specialists.” His enthusiasm for implanting positivity came through in his manner of
discussing these encounters. “We get to show them, ‘hey, this is the breath of it,’ and ... after
they go to do a home visit and hey experience the procedures that we do here, experience the
chronic care that happens, or sit in with our nutritionist and our smoke cessationist and our
psychologist, [and see us] coordinate that care” they have a much clearer understanding of the
scope of primary care practice. Although unable to speculate on the percentages of students
who ultimately chose residency in primary care, Dr. Brown is sure that “close to one hundred
percent would say, wow, I didn’t know primary care did all this or was like this.”

In addition to advocating for patients and promoting primary care itself, Acorn faculty
attempt to instill in the residents a concept that has become almost foreign in the American
workplace – experiencing joy in what they do.

Joy of Practice

As noted in the literature review, The National Committee for Quality Assurance has
four goals for the Patient-Centered Medical Home (PCMH). The fourth goal is that PCMH will
revitalize the “joy of practice” in primary care, making it more attractive and satisfying. All the
faculty participants interviewed consistently demonstrated their joy of practice. The faculty
comments showed such an amazing commitment to this concept that I have quoted them
extensively in this last section on the interviews.

Dr. Jones articulated how the residents are exposed to the joy of practice:
We try to be role models for deriving joy from our interactions with patients and our work with our colleagues, and try to show that to the residents and show them ways of working that will allow them to experience that joy while increasing their confidence in being able to overcome obstacles that get in the way of their taking the best possible care of their patients.

Responding to my personal observation of the positive emotion displayed by faculty, Dr. Jones shared,

Since you brought up emotion, just let me finish with just a note about one of the key things that sustains primary care doctors in practice and that we try to remind our trainees all the time ... the most important reward in primary care and what has kept me going for thirty years ... is my emotional bond with my patients, even if it's just a one-time visit, a patient with a complex medical condition, making that emotional connection while I am helping him in a very concrete way. It’s extremely powerful and provides just a sort of a good feeling in both directions for the patient and for me ...

When discussing the many ways residents are supported, the Dr. Hughes stated, “It’s like a buffet. An all you can eat buffet and ... we try to model our passion for it because we have passion for it, all of us here.”

Dr. Hubert reflected “I feel like that my passion for primary care has not dwindled since I started the residency. I feel like it’s more, it’s being fueled more because I see the difference we can make in people’s lives.” And Dr. Brown shared that

The best way to do it [encourage residents to choose primary care careers] is to role model it here, and to ... share with students, medical students, and the residents, the joy of primary care ... [C]ertainly we would love to say [the motivation] is financial but it’s not when you compare it to other specialties ... [B]ut it is a very satisfying occupation, and so go into primary care for the joy of it.

Since the goal of the ACA, Forrest Tertiary Health care system and Acorn Primary care is ultimately to improve health care delivery, Dr. Brown’s closing remarks about the joy of practice
are a fitting end to this part of the discussion. He said, “... a natural outflowing of that would be outstanding patient care. When you love what you’re doing, I think it comes out into the fruit of ‘this is good patient care.’”
CHAPTER 5: SUMMARY, DISCUSSION, CONCLUSION AND IMPLICATIONS

Summary

Individuals know the Affordable Care Act passed in 2010 primarily for its expansion of insurance coverage across the country. Less often discussed in the popular media is the ACA’s understanding of the need for many more primary care physicians to optimize the benefits of the ACA to the public. Since the U.S. depends on an effective system of graduate medical education (GME) to ensure that the world’s best physician workforce serves its population. GME is a powerful determinant of physician competencies and the workforce size and specialty mix. GME also affects where physicians practice and the types of population they serve. While the professional development of physicians continues beyond residencies and fellowships, GME is singularly important in setting a physician’s career course and in the direction of the health workforce as a whole. In turn, GME strongly influences the quality, quantity, and costs of the nation’s health care (COGME, 2013).

The ACA recognizes that GME is an essential public investment in tomorrow’s health care system that furthers the nation’s goal to attain the triple aims of better health care, improved access and lower costs (Berwick, Nolan & Whittington, 2008). The $13 billion per year invested in GME is a sizable amount, but still less than 1 percent of the $1.4 trillion of federal and state expenditures on health care (Hartman, Martin, Benson & Catlin, 2013). The benefits of a well-functioning system of GME are shared broadly by populations of every region and socio-economic class. GME also is closely tied to the national research infrastructure, providing essential training in research methods directly relevant to discovering new ways to keep patients healthy, diagnose and treat illness, and improve the delivery of care (COGME, 2013).
Hence, the task of meeting the nation’s needs for a larger primary care physician workforce falls largely to Graduate Medical Education.

Discussion

The Acorn residency program’s participant interviewees discussed several positive impacts of the ACA. Three principle benefits noted by faculty were 1) allowing access to primary care via the expansion of insurance coverage to previously under-or non-insured individuals, 2) the legitimatization of what the Acorn faculty is teaching to medical students and residents, and 3) the value that a primary care residency program brings to the parent health system. The Affordable Care Act provided incentive to Forrest Tertiary Health Care system to emphasize primary care with initiatives to improve quality and access. While positive about the overall impact of the ACA, faculty indicated that additional resources are needed to allow the Acorn model of care to evolve to the desired level of effectiveness and efficiency mandated by the ACA.

Affordable Care Act Impact

As the literature demonstrated, ACA emphasizes the importance of primary care to the success of a national healthcare initiative. The study findings of a positive impact on the Acorn primary care residency program is consistent with the fact that the ACA has provided nearly $230 million to support the training of 1,700 primary care medical residents, nurse practitioners and physician assistants. By the end of Academic Year 2013 – 2014, more than 1,550 new primary care medical residents, nurse practitioners students, and physician assistant students entered training and were supported through this funding. Thus far, 737 have completed training and entered the primary care workforce. In addition, the five-year, $230 million Teaching Health Center Graduate Medical Education Program is expanding primary care
residency training in community-based settings. During the 2015-2016 academic year, this program will support the community-based training of about 700 primary care physician and dental residents at 60 Teaching Heath Centers located in 24 states. As of the end of Academic Year 2013-2014, more than 75 residents have completed their training through this program (U.S. Department of Health & Human Services (HHS) Fact Sheets, 2015). At Acorn, this support has provided both philosophical and financial reinforcement of their teaching goals. In turn, these recognitions of the importance of primary care has reinvigorated the faculty’s efforts to share their enthusiasm and commitment to primary care and to show their residents what joy in practice means on a day-to-day basis.

Model of Care

In recognition of the need to increase access to medical care to all citizens, provide coordinated care for complex cases, and control the cost of healthcare delivery, the ACA strongly emphasized the importance of developing and improving Patient-Centered Medical Homes, wherein the primary care staff assumes primary responsibility for patient advocacy and integrated patient care. At Acorn, all faculty and residents agreed that the PCMH model of care is beneficial not only to the patients served but to the training of the primary care residents as well. This finding is in line with fact that the literature describes Patient–Centered Medical Homes as transforming primary care practices into what patients want, focusing on patients themselves and all of their healthcare needs (National Committee for Quality Assurance, 2015). The study findings regarding the role of the Acorn PCMH in primary care resident training aligns with the growing body of evidence which documents PCMHs’ many benefits, including better quality, patient experience, continuity, prevention and disease management. Studies also show lower costs from reduced emergency department visits and hospital admissions (NCQA, 2015;

Advocacy

The Acorn faculty interviewed provided several examples of their role of advocate at both the national, state and local levels in support of patient-centered primary care and training of primary care residents. All interviewees both faculty and residents discussed the need to serve as advocate for their patients when attempting to coordinate patient care within the health system wherein Acorn is located. In terms of advocacy for their residents and the PCMH model of care, faculty noted the Patient-Centered Primary Care Collaborative (PCPCC) as a major support in their desire to advance primary care. The PCPCC is a not-for-profit membership organization dedicated to advancing and effective and efficient health system built on a strong foundation of primary care and the patient-centered medical home (PCPCC, 2015).

Resident Encouragement to Practice Primary Care Post Residency

Internal medicine has seen the most alarming decline in the number of primary care practitioners, with pediatrics following suit, as residents in internal medicine and pediatrics are choosing to train as hospitalists or to sub specialize. Family medicine remains the only almost “pure” primary care specialty and the only one with physicians distributed somewhat equally relative to the geographic distribution of the U.S. population ((Rohan-Minjares, Alfero and Kaufman, 2015; Fryer, Green, Dovey and Phillips, 2001).
In a dedicated effort to increase the number of primary care physicians, the Acorn faculty demonstrated significant and effective role modeling, highlighting the importance of primary care for the patient and the community as well. The faculty consistently stated that the principal means to encourage primary care residents to practice primary care post residency was to provide positive role modeling and a supportive teaching environment. The residents interviewed confirmed the positive effects of the strong tutelage of the faculty physicians.

Jochemsen-van der Leeuw et al., (2013) systematically reviewed the medical and medical education literature to identify the attributes characterizing clinical faculty as positive and negative role models for resident trainees. The Acorn faculty demonstrated the qualities of positive role modeling; as being excellent, experienced clinicians who had empathy for patients and positive interactions with patients, as displaying teaching qualities, including commitment to the growth of learners and a humanistic style of teaching, as well as personal qualities such as enthusiasm. The faculty described their enthusiasm their passion for primary care as the “Joy of Practice”

Joy of Practice

The Acorn primary care participants indicated in part that all of the NCQA goals discussed in the literature review above were being met, including the “joy of practice” which was a strong common theme throughout all interviews.

This finding aligns with the literature (Hafferty & Franks, 1994) on medical educators increasingly understanding that medical resident education to be a process of moral enculturation, of taking the values, attitudes, character, and identity of the chosen profession (and, implicitly, of a “good” professional) as one’s own. The Acorn faculty role modeling of the
“joy of practice” is central to enculturation because professional behavior is learned in the experience of practice (Kenny et al., 2003).

Conclusions

The resources provided by the Affordable Care Act with increased focus on primary care have positively impacted the Acorn primary care residency program. The resources provided by the Affordable Care Act with increased focus on primary care have positively impacted the subject primary care residency program.

1. The Patient-Centered Medical Home Model of Care under which the Acorn primary care residency program operates is well suited for primary care residency training.
2. The Acorn primary care residency program provides role modeling and a supportive teaching environment that strongly encourages the residents to practice as primary care physicians post residency graduation.
3. The “Joy of Practice” demonstrated by the subject faculty instill motivation of residents to practice primary care despite the more attractive alternative to specialty practice.

The significance of the effect of positive role modeling and developing a sense of joy in practice perhaps cannot be overemphasized. The Acorn faculty approach could certainly serve as a model to other resident training programs.

Implications

Federal Policy

In a letter to Congress and the Secretary of Health and Human Services, dated May 4, 2015, the Chairman of the Council on Graduate Medical Education (COGME) stated that COGME
had conducted a review of reports on Graduate Medical Education (GME) from the Institute of Medicine (IOM), the Medicare Payment Advisory Commission, the Josiah Macy Jr. Foundation, and the Health Resources and Services Administration’s (HRSA) National Center for Health Workforce Analysis. COGME has also received input from a variety of stakeholders, including the Accreditation Council for Graduate Medical Education, the Association of American Medical Colleges, and many generalist and specialty groups. In keeping with recommendations from these organizations, COGME concurs and recommends that a comprehensive National Strategic Plan be developed for GME and that COGME lead this effort with sufficient resources and funding, estimated to be $2 to $2.5 million, allocated to develop the plan (COGME, 2015).

The findings of the Acorn primary care residency program study indicate that even with recent increase in support for primary care graduate medical education enjoyed by the subject case study, a long-term sustainable process is required. The GME national Strategic Plan should be fully supported by Congress in order to establish an enduring method for continuing to realign physician training with the needs of the country (COGME, 2015).

Future Primary Care Practice

Reorienting the medical education continuum to ensure a sizable enough and highly skilled family physician workforce have recently emerged as top priorities for both the Council of Academic Family Medicine (CAFM) and Family Medicine for America’s Health (FMA-Health). Launched in October 2014, FMA-Health is a new, 5-year, $20 million collaborative strategic effort of the eight U.S. family medicine organizations to lead continued change in the U.S. health care system (Phillips et al., 2014).

In 2014, CAFM released a comprehensive roadmap designed to enhance the nation’s physician workforce by increasing the recruitment and retention of medical students interested
in family medicine, improving the process of medical education, transforming practices to attract students into primary care, and reforming payment to keep these practices viable in the long term (Hughes et al., 2015; Hepworth et al., 2014).

Both the CAFM and FMA-Health calls to action have arrived at a time of great challenge—but also of great opportunity—for the discipline of family medicine to emerge as a leader in primary care workforce development and educational quality (Hughes et al., 2015).

The study finding of the Acorn primary care residency practice advocacy for patients and primary care with the exceptional support of resident development into independent practicing primary care physicians serve as examples of best practice if duplicated by the majority of existing and new primary care resident programs could move the contribution of primary care closer to a reality of meeting the “triple aim” of improving population health, lowering per capita costs, and improving patient experience.

Future Research

One of the limitations of this study is that the case study residency program faculty and residents represent only one of the three principle primary care residency programs; family medicine, internal medicine and pediatrics. A future multiple case study research design having at least one individual case representing a family medicine GME program, an internal medicine GME program and a pediatric GME program may sharpen our understanding of issues affecting primary care medical education.

In addition to comparing and contrasting the three types of primary care residencies, comparing primary care residency programs that train residents within a Patient-Centered
Medical Home model of care to other models of care may demonstrate the benefits of one model to another in primary care graduate medical education resident training.

In any of the suggested future research above, it is also recommended to continue to examine the benefits of positive role modeling in the resident training programs in order to further ensure its application in future resident training.

Closing

The term “patient-centered” appears 40 times in the ACA, and there are additional references to “patient satisfaction,” “patient experience of care,” “patient and family engagement” and “shared decision – making” (Millerson & Berenson, 2015). The Acorn primary care residency program operates within a Patient-Centered Medical Home model of care. The study findings demonstrated the case study faculty’s commitment to the training of the primary care residents who aspire a lifelong practice of patient-centered care. As interviewer, I was moved by the passion displayed by the faculty. I was given a valuable lesson on how modeling the “joy of practice” can impact the residents training to be future successful primary care generalist physicians.
APPENDIX A: GME Specialties & Subspecialties

The Accreditation Council for Graduate Medical Education 27 Residency Review Committees, one for each major specialty, as well as one for transitional year programs accredit the following residencies:

**HOSPITAL – BASED Specialties / Subspecialties**

**Anesthesiology**

- Adult Cardiothoracic Anesthesiology
- Critical Care Medicine
- Obstetric Anesthesiology
- Pediatric Anesthesiology
- Hospice and Palliative Medicine
- Pain Medicine

**Diagnostic Radiology**

- Abdominal Radiology
- Endovascular Surgical Neuroradiology
- Musculoskeletal Radiology
- Neuroradiology
- Nuclear Radiology
- Pediatric Radiology
- Vascular and Interventional Radiology

**Emergency Medicine**

- Medical Toxicology
- Pediatric Emergency Medicine
- Sports Medicine
- Undersea and Hyperbaric Medicine
Medical Genetics

Medical Biochemical Genetics

Molecular Genetic Pathology

Nuclear Medicine

Pathology

Blood Banking / Transfusion Medicine

Chemical Pathology

Cytopathology

Forensic pathology

Hematology

Medical Microbiology

Neuropathology

Pediatric pathology

Selective Pathology

Preventive Medicine

Medical Toxicology

Undersea and Hyperbaric Medicine

Radiation Oncology

Transitional Year

MEDICAL Specialties / Subspecialties

Allergy and Immunology

Dermatology

Dermatopathology

Procedural Dermatology

Family Medicine

Geriatric Medicine
Sports Medicine
Sleep Medicine

Internal Medicine

Advanced Heart Failure and Transplant Cardiology
Cardiovascular Disease
Clinical Cardiac Electrophysiology
Critical Care Medicine
Endocrinology, Diabetes and Metabolism
Gastroenterology
Geriatric Medicine
Hematology
Hematology and Oncology
Infectious Disease
Interventional Cardiology
Nephrology
Oncology
Pulmonary Disease
Pulmonary Disease and Critical Care Medicine
Rheumatology
Transplant Hepatology
Sleep Medicine

Neurology

Child Neurology
Clinical Neurophysiology
Endovascular Surgical Neuroradiology
Neurodevelopmental Disabilities
Neuromuscular Medicine
Vascular Neurology
Pain Medicine
Sleep Medicine

Pediatrics

Adolescent Medicine
Child Abuse Pediatrics
Developmental – Behavioral Pediatrics
Neonatal – Perinatal Medicine
Pediatric Cardiology
Pediatric Critical Care Medicine
Pediatric Emergency Medicine
Pediatric Endocrinology
Pediatric Gastroenterology
Pediatric Hematology / Oncology
Pediatric Infectious Disease
Pediatric Nephrology
Pediatric Pulmonology
Pediatric Rheumatology
Pediatric Sports Medicine
Pediatric Transplant Hepatology
Sleep Medicine

Physical Medicine and Rehabilitation

Pediatric Rehabilitation Medicine
Spinal Cord Injury Medicine
Sports Medicine
Pain Medicine

Psychiatry
Addiction Psychiatry
Child and Adolescent Psychiatry
Forensic Psychiatry
Geriatric Psychiatry
Psychosomatic Medicine
Pain Medicine
Sleep Medicine

SURGICAL Specialties / Subspecialties

Colon and Rectal Surgery

Neurological Surgery

Endovascular Surgical Neuroradiology

Obstetrics and Gynecology

Female Pelvic Medicine and Reconstructive Surgery

Ophthalmology

Ophthalmic Plastic and Reconstructive Surgery

Orthopedic Surgery

Adult Reconstructive Orthopedics
Foot and Ankle Orthopedics
Hand Surgery
Musculoskeletal Oncology
Orthopedic Sports Medicine
Orthopedic Surgery of the Spine
Orthopedic Trauma
Pediatric Orthopedics

Otolaryngology

Neurotology
Pediatric Otolaryngology
Sleep Medicine

Plastic Surgery
Craniofacial Surgery
Hand Surgery

Surgery
Complex General Surgical Oncology
Hand Surgery
Pediatric Surgery
Surgical Critical Care
Vascular Surgery

Thoracic Surgery
Congenital Cardiac Surgery

Urology
Female Pelvic Medicine and Reconstructive Surgery
Pediatric Urology

APPENDIX B: Legislative Milestones in Medicare Financing of GME

1965

Medicare program is created and establishes retrospective cost-based reimbursement for hospital inpatient stays—certain Direct Graduate Medical Education (DGME) costs are included (e.g., trainees, stipends, faculty compensation, and other costs).

1983

Medicare cost-based reimbursement for acute care hospital operating costs ends with implementation of the Prospective Payment System (PPS). Medicare continues to pay for DGME on a cost basis but also makes an Indirect Medical Education (IME) adjustment to PPS rates:

- IME: an adjustment to the PPS operating rate to account for the additional patient care costs associated with sponsoring residency programs.
  - Congress mandates an IME adjustment factor of 11.59 percent for each 10 percent increase in the institution’s intern-and-resident-to-bed ratio—double the 5.795 percentage rate recommended by the U.S. Department of Health and Human Services Secretary.

1985

*Consolidated Omnibus Budget Reconciliation Act* (COBRA) (Public Law 99-272) establishes a prospective payment for DGME and revises the IME formula.

- DGME payments are made according to a per-resident amount (PRA) adjusted for the proportion of the hospital’s patient days attributable to Medicare patients.
  - The PRA is based on individual hospital’s direct training costs in 1984 (updated annually for inflation).
  - The full PRA is paid only for trainees in their initial residency period, (i.e., the minimum time required for board eligibility or 5 years, whichever was shorter.)
  - Payment for trainees after their initial residency period is reduced to half of the PRA.
  - The IME adjustment factor is reduced to 8.1 percent.

1987

*Omnibus Budget Reconciliation Act* (OBRA) (Public Law 100-203) reduces the IME adjustment factor from 8.1 to 7.7 percent effective in 1889.
1993

OBRA of 1993 (Public Law 103-66) increases the PRA by about 6 percent for primary care and obstetrics trainees in 1994 and 1995. In addition:

- The inflation adjustment is withheld for non-primary care specialties for 2 years.
- The PRA for advanced training in preventive medicine trainees is increased from .5 to 1.0.

1997

*Balanced Budget Act* (BBA) (Public Law 105-33) includes provisions to stem increases in GME payments while extending GME to some non-hospital settings:

- Allopathic and osteopathic residency counts for teaching hospitals are capped at 1996 levels. Requires an incremental reduction in the IME adjustment from 7.7 to 5.5 percent, phased in until 2001.
- Direct graduate medical education (DGME) payment is modified to include some costs of training in certain ambulatory sites (including federally qualified health centers, rural health clinics, and Medicare+Choice organizations) whereas, previously, the allowable DME costs were limited largely to training activities in hospital settings.

1999

*Balance Budget Refinement Act of 1999* (Public Law 106-113) includes several changes to GME funding:

- The IME adjustment factor is frozen at 6.5 percent.
- The resident cap for a rural hospital is increased to 130 percent of its 1996 level.
- A minimum PRA is established at 70 percent of the national PRA; PRAs above 140 percent of national PRA are frozen for 2001 and 2002 and have reduced inflation adjustments for 2003-2005.
- The full PRA is extended by 2 years for child neurology.
- The Medicare Payment Advisory Commission is asked to develop recommendations on the appropriate length of the initial residency period.

*The Health Research and Quality Act* (Public Law 106-129) creates the Children’s Hospital Graduate Medical Education (CHGME) Program to support residency training in freestanding children’s hospitals. The Act authorizes the Health Resources and Services Administration to make DGME and IME payments to eligible institutions.
2000

*Medicare, Medicaid, and State Children’s Health Insurance Program (SCHIP) Benefits Improvement and Protection Act* (Public Law 106-554) freezes the maximum PRA to 140 percent of the locally adjusted national average amount while also delaying or reversing previously enacted downward adjustment to DGME and IME:

- The previously mandated incremental decrease in IME to 5.5 percent is delayed until 2003.
- The minimum PRA is raised from 70 to 85 percent of the national PRA.

2003

*Medicare Prescription Drug, Improvement, and Modernization Act* (Public Law 108-73) includes several GME Provisions:

- IME: A short-term increase in the adjustment factor to 6.0 percent in 2004 to be followed by decreases to 5.8 percent in 2005, 5.55 percent in 2006, and 5.35 percent in 2007, and then raised and capped at 5.5 percent for 2008.
- DGME:
  - The number of Medicare-funded training slots is reduced in hospitals below their resident cap.
    - The cut only applies to slots that were not filled in the previous 3 years.
    - Some teaching hospitals are exempt, including new training sites in the midst of building their programs.
- Freeze on PRA exceeding 140 percent of nation PRA extended through 2013.

2006

*The CHGME Support Reauthorization Act* (Public Law 109-307) extends the program’s funding through 2011 and introduces a reporting requirement for participating children’s hospitals.

2010

*The Affordable Care Act (ACA)* (Public Law 11-148) contains several GME-related provisions focused on extending GME to underserved areas and populations:

- ACA creates a 5-year, $230 million Teaching Health Center (THC) GME program to expand primary care training.
  - GME payments to THCs cover both direct and indirect expenses associated with sponsoring an approved GME program.
- The number of approved training slots is reduced in hospitals with excess capacity (i.e., 65 percent of unfilled positions). The cut only applies to slots that were not filled in the previous 3 years.
70 percent of unfilled slots go to teaching hospitals in states with low resident-to-populations.

30 percent of the unfilled slots go to teaching hospitals in the top 10 states with primary care shortages and rural areas.

New rules are established for the transfer of training slots from closed hospitals to other institutions.
### APPENDIX C: Massachusetts Health Reform

<table>
<thead>
<tr>
<th>Insurance Market Reforms</th>
<th>The state requires guarantee issue, community rating, and created coverage and affordability standards. The state also merged the individual and small group markets into a single risk pool.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indoor DESCRIPTION</td>
<td>The ACA requires guaranteed issue, community rating, and the creation of coverage standards through the essential health benefits by 2014. Early market reforms are already in effect, including the expansion of dependent coverage to age 26 and the elimination of lifetime limits.</td>
</tr>
<tr>
<td>Subsidies for Private Coverage</td>
<td>Commonwealth Care provides subsidized private health coverage on a sliding scale for individuals with incomes up to 300% FPL. Individuals with incomes below 150% FPL are eligible for fully subsidized coverage. For those between 150-300% FPL, individual monthly premiums range from $39- $116.</td>
</tr>
<tr>
<td>Expansion of Public Coverage</td>
<td>Medicaid was expanded to cover children with family incomes up to 300% FPL. Eligibility levels for adults (parents – 133% FPL, pregnant women– 200% FPL and long-term unemployed –100% FPL) remained the same, though enrollment caps for certain Medicaid programs for...</td>
</tr>
<tr>
<td>State-based Exchange</td>
<td>The Connector was established as a marketplace for individuals and small businesses to compare and purchase private insurance, which meets certain coverage and cost standards.</td>
</tr>
<tr>
<td>State Exchanges will be a marketplace for low to moderate-income individuals and small businesses to compare and purchase private health insurance, which meets certain coverage standards.</td>
<td></td>
</tr>
<tr>
<td>Subsidies for Private Coverage</td>
<td>Premium subsidies will be provided on a sliding scale for individuals with incomes up to 400% FPL to purchase private insurance in an Exchange. Cost-sharing subsidies will be available for those up to 250% FPL. An individual’s expected contribution will range from 2-9.5% depending on household income.</td>
</tr>
<tr>
<td>Expansion of Public Coverage</td>
<td>Medicaid will be broadly expanded to all individuals under age 65 with incomes up to 133% FPL (plus a 5% automatic income disregard) based on modified adjusted gross income.</td>
</tr>
</tbody>
</table>
Individual Coverage Requirement

- Individuals must have health insurance or face a financial penalty of up to 50% of the lowest cost premium an individual would have qualified for through the Connector.

- Individuals must have health insurance or face a financial penalty of $695 per year up to a maximum of 3 times that amount per family or 2.5% of household income- whichever is greater.

Employer requirements

- Employers with 11 or more employees are required to provide insurance or pay a “Fair Share” contribution of up to $295 annually per employee. Employers are required to offer a “cafeteria plan” that permits workers to purchase health care with pre-tax dollars or face a “free-rider surcharge” if employees make excessive use of uncompensated care.

- Employers with 50 or more full-time employees that do not offer coverage are required to pay a fee of $2,000 per employee, excluding the first 30 employees. Employers with over 200 employees must automatically enroll employees into plans offered by the employer. Employees may opt out of coverage.


APPENDIX D: Summary of the ACA Ten Titles

Title I: Quality, Affordable Health Care for All Americans

- Prohibits insurance companies from denying coverage based on pre-existing conditions.
- Caps out-of-pocket expenditures
- Extends dependent coverage for young adults to age 26
- Requires full coverage of preventive care and immunization
- Creates individual and small-business insurance exchanges
- Establishes tax subsidies for individuals up to 400% of the federal poverty and employers
- Establishes individual and employer mandates and penalties
- Caps insurance company nonmedical, administrative expenditures – the medical-loss ratio

Title II: The Role of Public Program

- Expands Medicaid to 133% of the federal poverty level
- Simplifies enrollment for Medicaid, CHIP, and the exchanges

Title III. Improving the Quality and Efficiency of Health Care

- Launches value-based purchasing program in Medicare
- Extends Physician Quality Reporting Initiative (PQRI)
- Establishes Center for Medicare and Medicaid Innovation (CMMI) to develop pilot programs aimed at encouraging high-quality, efficient care
- Provides incentives for Accountable Care Organizations (ACOs)
- Closes the “donut hole” in Medicare Part D
- Creates the Independent Payment Advisory Board (IIPAB)
- Establishes payment adjustments (penalties) for hospital acquired conditions such as hospital-acquired infections
- Establishes the hospital readmission reduction program

Title IV: Prevention of Chronic Disease and Improving Public Health

- Creates the National Prevention, Health Promotion, and Public Health Council, an interagency body charged with developing a national public health strategy
- Requires calorie counts on menus at chain restaurants
- Provides small-business grants for workplace wellness programs
- Improves access and availability of preventive services
Title V: Health Care Workforce

- Establishes a national Health Workforce Commission to review needs and advise Congress and the administration
- Modifies the Federal Student Loan Program to provide scholarships and repayment to primary care doctors and nurses
- Invests in grant programs that support training of primary care doctors
- Provides payment bonuses to primary care doctors

Title VI: Transparency and Program Integrity

- Requires drug and device manufacturers to report gifts to physicians and other providers
- Establishes stricter transparency and ethics standards for nursing homes
- Creates the Patient – Centered Outcomes Research Institute (PCORI)
- Establishes procedures to screen providers and suppliers who participate in Medicare, Medicaid, and CHIP to reduce fraud
- Encourages states to develop and test alternatives to the existing civil litigation system for medical malpractice
- Title VII: Improving Access to Innovative Medical Technologies
- Streamlines the FDA licensing process for products that are biosimilar to a product that has been on the market for at least 12 years
- Provides drug discounts for children’s hospitals and underserved communities

Title VIII: Community Living Assistance Services and Supports

- Establishes a voluntary, self-funded insurance program for community living services and support (CLASS). This section has been repelled.

Title IX: Revenue Provisions

- Imposes the “Cadillac Tax” on high-cost, employer-sponsored health plans
- Imposes a medical device tax on the device manufacturing sector
- Imposes an annual flat fee on pharmaceutical manufacturers
- Imposes an annual flat fee on health insurers
- Imposes an excise tax on indoor tanning services
- Imposes an excise tax on elective cosmetic surgery
- Eliminates the deduction for employer Part D subsidies
- Increases additional 0.9% Medicare tax for high-wage workers
Title X: Reauthorization of the Indian Health Care Improvement Act

- Extends the Indian Health Care Improvement Act, which expired in 2000
- Modernizes and streamlines care delivery for the Indian Health Service, which cares for 1.8 million American Indians and Alaska Natives

Title of the Research Study: Primary Care Graduate Medical Education Case Study

Protocol Number: 821655

Principal Investigator: Dr. Shaun R. Harper, Graduate School of Education, 215-898-5147, sharper1@upenn.edu
Co-investigator: Robert Cullen, 343 Summit Road, Springfield, PA, 19064, 610-357-6805, cullenr@gse.upenn.edu

Emergency Contact: Robert Cullen, 343 Summit Road, Springfield, PA 19064, 610-357-6805, cullenr@gse.upenn.edu

You are being asked to take part in a research study. This is not a form of treatment or therapy. It is not supposed to detect a disease or find something wrong. Your participation is voluntary which means you can choose whether or not to participate. If you decide to participate or not to participate there will be no loss of benefits to which you are otherwise entitled. Before you make a decision you will need to know the purpose of the study, the possible risks and benefits of being in the study and what you will have to do if decide to participate. The researcher is going to talk with you about the study and give you this consent document to read. You do not have to make a decision now; you can take the consent document home and share it with friends, family doctor and family.

If you do not understand what you are reading, do not sign it. Please ask the researcher to explain anything you do not understand, including any language contained in this form. If you decide to participate, you will be asked to sign this form and a copy will be given to you. Keep this form, in it you will find contact information and answers to questions about the study. You may ask to have this form read to you.

What is the purpose of the study?

The purpose of the study is to learn more about how a teaching hospital is affected by and responding to current and projected primary care physician shortages associated with the Affordable Care Act. This study is being conducted for a Doctor of Education, Higher Education, University of Pennsylvania dissertation.
Why was I asked to participate in the study?
You are being asked to join this study because you are an important stakeholder / participant of a teaching hospital’s primary care graduate medical education program.

How long will I be in the study?
The study will take place over a period of two months. This means for the next two months we will ask you to spend one day participating in this study. Each session will last approximately one hour.

Where will the study take place?
You will be asked to come to a conference room or office, located at the teaching hospital on an agreed date at an agreed time.

What will I be asked to do?
You will be asked to come to participate with a one on one interview answering questions regarding past, current and future development / operations of the teaching hospital’s primary care graduate medical education program.

What are the risks?
There is a risk that a breach of confidentiality could occur resulting in possible harm to your reputation. Your identity and the identity of the teaching hospital will not be recorded or printed by any means. All recorded interviews will not identify persons or institution. Any audio recordings will be destroyed after a summary of responses is written in the aggregate.

How will I benefit from the study?
There is no benefit to you. However, your participation could help us understand primary care graduate medical education’s role in reducing anticipated primary care physician shortages, which can benefit you indirectly. In the future, this may help other people to develop / promote primary care medical education programs.

What other choices do I have?
Your alternative to being in the study is to not be in the study.
What happens if I do not choose to join the research study?

You may choose to join the study or you may choose not to join the study. Your participation is voluntary.

There is no penalty if you choose not to join the research study. You will lose no benefits or advantages that are now coming to you, or would come to you in the future.

When is the study over? Can I leave the study before it ends?

The study is expected to end after all participants have completed all interviews and all the information has been collected. The study may be stopped without your consent for the following reasons:

- The PI feels it is best for your safety and/or health—you will be informed of the reasons why.
- You have not followed the study instructions
- The PI, the sponsor or the Office of Regulatory Affairs at the University of Pennsylvania can stop the study anytime

You have the right to drop out of the research study at any time during your participation. There is no penalty or loss of benefits to which you are otherwise entitled if you decide to do so.

If you no longer wish to be in the research study, please contact Robert Cullen, at 610-357-6805 or e-mail cullenr@gse.upenn.edu.

How will confidentiality be maintained and my privacy be protected?

We will do our best to make sure that the personal information obtained during the course of this research study will be kept private. However, we cannot guarantee total privacy. Your personal information may be given out if required by law. If information from this study is published or presented at scientific meetings, your name and other personal information will not be used. Any audiotapes of your interview will be destroyed, once a summary of participants' responses in the aggregate is completed. Your identity or organization title will not be recorded. The identity of the teaching hospital will not be recorded.
Will I have to pay for anything?

There are no direct monetary costs associated with participating in the study.

Will I be paid for being in this study?

There is no compensation for participation in this study.

Who can I call with questions, complaints or if I’m concerned about my rights as a research subject?

If you have questions, concerns or complaints regarding your participation in this research study or if you have any questions about your rights as a research subject, you should speak with the Principal Investigator listed on page one of this form. If a member of the research team cannot be reached or you want to talk to someone other than those working on the study, you may contact the Office of Regulatory Affairs with any question, concerns or complaints at the University of Pennsylvania by calling (215) 898-2614.

When you sign this document, you are agreeing to take part in this research study. If you have any questions or there is something you do not understand, please ask. You will receive a copy of this consent document.

Signature of Subject

Print Name of Subject

Date
APPENDIX F: Interview Protocol

Primary Questions

1. How is this primary care graduate medical program affected by and responding to the implementation of the Affordable Care Act and the current and projected primary care physician shortages associated with the Affordable Care Act?

2. How is this primary care graduate medical program faculty encouraging residents to remain in general primary care practice after graduation from the primary care residency?

Secondary Questions

Throughout the multiple interviews faculty members and residents were also asked about their insights to best practice, the role of advocacy and desired model of care delivery that supports primary care graduate medical education. These questions were identified as potentially important following review of the responses shared by the first faculty participant.

Secondary Questions Detail by Faculty Interviewee

First Faculty

As far as the actual program itself and the number of resident slots, has that been stable for some time or has that grown at all over the past few years, and is there any future growth potential?

What are other factors external to the hospital such as reimbursing by both private payers and public payers? What sort of trends is you seeing that help to encourage the role of the primary care program you have here?
Can you just comment on the patient center medical home certification that you are awarded here in your practice? Can you give a little background?

I am curious if you in your advocacy for this type of care, you look at the experience that Massachusetts had when they had their insurance reform?

Is there any specific ways you encourage your graduates to remain in primary care?

What are some of those factors that, on a bigger level, you describe need to be modified or changed in order to get the support for trying to retain a physician into primary care?

In the summer of 2014, the Institute of Medicine issued a position on graduate medical education and some recommendations. Are you familiar with this report?

Second Faculty

The primary care program has been recognized as a patient centered medical home is it an adjunct to the challenge that you are trying to meet with primary care? What kind of impact has it been in that regard to physician training?

What are some of the barriers to continuing to expand the primary care practice here including the patient centered medical home and what are the barriers you feel you are faced with?

Do you have any thoughts or observations of primary care say regionally?

Has your practice been set up as a provider within an accountable care organization?

Have you had an opportunity to see other national programs primary care practice? Any examples where you may or may not think of it as a best practice currently?
Where do you think primary care is going forward? Do you think it’s two steps forward, one step backwards, or do you think it is an evolution or the chaos that you mentioned?

Can you comment on being an advocate for the patient?

Are there any other thoughts or concepts that you might want to share with me that we really haven’t spoken about at this point that you think are important?

Third Faculty

So besides the challenges regarding primary care, which you are addressing, you obviously are sharing the concern with secondary care, specialty care, that there are limits there as well, correct?

Prior to the implementation of the Affordable Care Act, what were some of your concerns about the process of primary care?

With the increased demand, is your current faculty and practitioners able to meet the demand?

I haven’t really fully appreciated until your statement that, perhaps another setting as well, but in the primary care setting graduate medical education can give the practice the ability to absorb some additional demand, correct?

The fact that your graduate medical education program is trying to meet the requirements of the accreditation for graduate medical education program, does being a patient centered medical home make it easier or more difficult for the practice to be in compliance to the graduate medical education requirements?
In my research I came to understand that the accreditation process for graduate medical education with the osteopathic programs and the allopathic programs accrediting bodies have agreed to work together so it’s one accreditation process. Do you have an opinion if the one-accreditation process at this point is good, bad, or indifferent, or is it too early to tell?

What do you see as some of the barriers to fill the two faculty openings right now? You can tell me if I’m incorrect but my assumption is that it is not that easy to fill those positions. What do you think are some of the factors that are contributing to the difficulty in filling those positions?

In the efforts of trying to enhance the primary care delivery system is any differences or similarities in support by the central leadership of the health system or the hospital your practice is affiliated with?

Strategically, is the health system that your program is part of, are they attempted to develop additional primary care positions? Is it an opportunity for your graduates as well?

Is there, in your thinking, an example of what you would say is a best practice for primary care right now, an educational model either regionally or locally or nationally?

What kind of model of patient coordination operates between the primary care practice and the rest of the accountable care organization?

Fourth Faculty

What are your observations with the increase in patients that you describe to your practice?

How is it working then with your ability to utilize specialists when appropriate? Has that been a complication as well?
What are some of the advantages or disadvantages that the practice designation as a patient centered medical home in this new world of greater focus on primary care?

The concept has been kicked around now for the past few years that reimbursement is moving from a fee for service model to a fee for value model. Has your practice been involved with innovative reimbursement in order to enhance primary care, to encourage primary care? Do you think that’s actually working yet or is it still more on paper?

The fact that you’re an academic practice with the residents is the understanding of how to best manage the patient’s care within this framework constantly changing?

Explain how when you have medical students that is another opportunity to showcase primary care?

More and more literature demonstrates that the patient centered care model has measureable quality outcomes. Do you see longitudinality of care?

So the promotion that you just mentioned, I am getting a sense from your colleagues that I have had the opportunity to meet with an appreciation of the idea of one being an advocate for primary care and ultimately the patient. Do you see yourself in that role as well?

Do you see right now regionally, nationally or internationally a best practice for patient centered care?

Fifth Faculty

What is the future of the patient centered medical home that allows you the ability to be an active player in delivery of care?
How do you see the patient centered medical home supporting clinical integrated networks like an accountable care organization?

As a faculty member of a primary care residency program is there a certain role of being an advocate for trying to solicit resources needed?

Is there an example of a delivery system outside this country that you see further along the curve of development of primary care?

Do you see your residency program as an outlier or are there many other graduate primary care programs that provide the same experiences for their residents?

Your description of the program is helpful for me to take my understanding of graduate medical education from a very broad national level right down to the patient / physician level, in light of our conversation, is there any other thought or comment you would like to make?

Secondary Questions Detail by Resident Interviewees

Please discuss the reasons why you chose primary care residency and if your plans are to pursue a fellowship. Do you see yourself in primary care post fellowship?

Healthcare delivery is at a potential crossroad moving from a focus on specialty care to primary care, do you see this shift an evolution that has been coming for some time now?

Regarding the primary care physician’s role in managing coordination of care, do you see ways of doing that going forward that you area learning now through your education? Who are some of the members of the team that you think are important to help you in the goal of coordinating care?
[If residency programs entail a patient centered medical home model, ask:] Was this an important consideration in your application to this program?

Has the health system that you are currently affiliated with showing any interest in trying to recruit or retain your services? Is that an option that you are looking at?

What sort of factors or actions of the faulty or members of the health system do you find are attempting to encourage, motivate you to remain in primary care?

Do you see yourself in the future as your practice develops as not only in the role of clinician but also as an advocate for primary care?

Is there any other comments you have or thoughts you want to share regarding the future of primary care or any of the challenges you are finding working under the Affordable Care Act?

What were some of the factors that influenced you when you were pursuing residency to select a primary care residency?

Have you found the faculty of your program supportive? Have they given you the evidence that your decision was the right decision?

What has your experience been with the fact that the program is an accredited patient centered medical home?

If you are continuing in primary care post residency, is a patient centered medical home a consideration as to the practice where you might work?

One of my observations in having the pleasure of interviewing some of the faculty members is the role they have identified for themselves as an advocate for primary care and of course
ultimately the patient. Do you see this being demonstrated in your interactions with your faculty?

How often in your role do you have the opportunity to do home visits?

What do you see from a practitioner point of view, some of the barriers that have to be lessened in order to be an effective primary care physician going forward?

Can you comment on the culture within the medical school you attended regarding feedback or encouragement to consider primary care?

When you have interactions with medical students, do you see that as an opportunity to promote primary care?

Are there any other thoughts on the topic that you want to share as far as where primary care is going and what needs to be done in your opinion?


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