Challenges in Primary Care Education

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The Past

Training in the traditional primary care disciplines (Family Medicine, Internal Medicine, Medicine-Pediatrics and Pediatrics) has faced a decline in interest among US Medical School Seniors for several years as supported by the following data:[1]

- Primary Care Internal Medicine Residency programs declined from 82 in 2000 to only 50 in 2009, with the number of positions offered through the **National Resident Matching Program** (**NRMP**) decreasing by 48%.

- Family Medicine Residency programs offered 18% fewer positions through the NRMP and have filled less than half of matched positions with US graduates since beginning a downward trend from 57% in 2000 to a nadir of 40.5% in 2005.

- Combined Medicine-Pediatrics Programs have seen a decline in number of programs since 2000 from 103 to 79, with a corresponding decrease in positions offered through the NRMP from 446 to 354.

- General Pediatrics has remained the most stable in terms of popularity among US senior medical students over the last decade, with a small increase in the number of positions over the past decade despite a drop in popularity among US senior medical students, dropping from a match rate of 76.4% in 200 to a nadir of 67.6% in 2008.

Despite these grim statistics, more recent trends suggest an increase in medical student interest in primary care fields. In 2010, Family Medicine saw an increase in applicant numbers, filling more than 44% of an increased number of positions offered in the NRMP. Combined Medicine-Pediatrics programs saw a considerable increase in popularity among US senior medical students as well, filling 83% of a stable number of positions. Although these trends towards improvement are small, they represent an upward trend in medical student interest since what appears to be a nadir during the 2005-2007 academic years.

Career choices within some primary care disciplines have changed dramatically over the past decade. Among recently surveyed PGY-3 **US Medical Graduates** (**USMG**) in Internal Medicine training programs, 22.8% planned to enter **general internal medicine** (**GIM**) while 60.4% planned a subspecialty career. In contrast, PGY-3 **International Medical Graduates** (**IMGs**) were more likely to choose GIM.[2] According to the American Board of Internal Medicine Workforce data, there were 4340 first year subspecialty fellows in academic year 2008-2009, compared with 3298 in 1999-2000, an increase of 32%.[3] In contrast, a recent survey of 279 categorical medicine residents, 44% were considering a hospital medicine career.[4]

While students entering internal medicine residency programs may have increased, fewer of those students eventually choose careers in primary care. There has been a steady decline in the percentage of internal medicine residents planning to pursue generalist careers. In 1998, 54% of PGY-3s planned to practice general internal medicine compared with 27% in 2003. Ominously, in 2003, only 19% of PGY-1s surveyed nationally planned to pursue careers in general medicine.[5] Lifestyle and income have been found to increasingly influence medical students' career choices away from primary care disciplines.[6]

The face of residency education, especially in Internal Medicine, has changed dramatically over the past decade with respect to resident exposure to primary care role models and mentors, many of whom have left the inpatient care of patients in favor of a more focused office-based clinical career. In one recent study 54% of teaching hospitals employed hospitalists before implementation of resident work-hour limitations, while 73% did so afterwards.[7] Specific teaching activities of hospitalists included: attending on teaching service (92%) and conducting rounds (81%). Lack of exposure to generalists results in less consideration of that career option by residents.

The curriculum and assessment of residency training is regulated through the **Accreditation Council for Graduate Medical Education** (**ACGME**), which accredits the majority of allopathic training programs in the USA. Since 2003, the ACGME has developed rules limiting Duty Hours for residents in all disciplines of medicine. Self-reported weekly hours worked by residents before 2003 averaged 65.7 before dropping to 59.3 upon implementation of resident duty hour restriction in 2003.[8] Since that time, all residents are required to adhere to four principal duty hour rules:

- Maximum 80 hours worked per week averaged over four weeks

- Maximum 30 hours on duty in a continuous manner

- Minimum of one day completely free of duty responsibility in seven, averaged over four weeks

- Minimum of ten hours free of all duties between assignments.

These rules were implemented in an effort to improve patient safety, as well as to improve resident safety and education. Many training programs complied with these new rules through an assortment of scheduling adaptations, including the use of "night float" teams and other systems of coverage in which patient care responsibilities were transferred to another group of physicians. Most programs have adapted and explored ways to meet the requirements while preserving the educational experiences of residency.

In September 2010, seven years after the first duty hour rules were applied, additional rules were developed to go into effect July 1, 2011. These new rules are detailed elsewhere in this issue. From the primary care residency perspective, the greatest change will be the new limits to continuous on-duty periods, effectively end-

ing the tradition of the long overnight hours "on-call" for interns. The entering class of interns on July 1, 2011 will not encounter the long sleepless hours on duty known by prior interns but will be required to remain attentive to patient details despite more interrupted schedules of bedside availability.

Primary care training has weathered the past decade, operating now in a much different training environment than that which existed at the turn of the millennium. A new focus on primary care has emerged in the current national landscape, brought about by a growing concern about limited access to care by many individuals, a growing interest in the "Patient Centered Medical Home" concept as a more effective healthcare delivery model, and the new Health Care Reform Act, with both broad-reaching implications for providers and patients alike.

The Present

Perhaps the most recent and compelling attempt to refocus national attention on primary care objectives is highlighted in a recent jointly signed statement of primary care professional organizations. The American Association of Family Physicians, American Academy of Pediatrics, American College of Physicians, and American Osteopathic Association created and endorsed the "Joint Principles of the Patient-Centered Medical Home" in March, 2007.[9] A brief summary of the principles promulgate the belief that primary care practice should be guided by a "personal physician" whose treatment is coordinated and integrated with partner health care team members, yet maintains a whole person orientation to each patient as an individual. The signatory organizations also advocate enhanced value and reimbursement to primary care practitioners tied to measures of care quality, safety, and enhanced access for their patients. Primary care practitioners are already increasingly involved in the management of chronic care concerns in which there is no expectation of cure, but rather close supervision of maintenance of behaviors. Residency training must support these ideals and the skills to enable graduates to practice them with competence.

Ever fewer graduating medical students consider a career in primary care practice. A substantial number of those that enter primary care residency ultimately move on to subspecialty fellowship and career pathways. The root cause of primary care avoidance is most certainly multifactorial. One major contributor is misaligned incentives. The median debt burden of the medical student graduating in 2009 is up to $160,000.[10] On the flipside, the primary care salary support is the lowest of virtually all physician-based careers. While the salaries of primary physicians are quite handsome in comparison to the median salary of most American workers, the primary care practitioner may well give up tens of millions of dollars of potential earned income across a career of 30 to 35 years when viewed side by side with an alternative career in subspecialty or procedural practice.

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From a clinical service vantage point, some residency programs may further reduce the number of patients cared for by their residents in order to address the duty hour and other workload limits in effect. The consequences of such duty hour regulation are not well-studied and will require that program directors decide how best to accomplish adequate patient-centered education. While each program will create an individualized solution, program directors and hospital administrators may choose to schedule trainees for a greater preponderance of nighttime and weekend shifts, reduce patient census on teaching services, or increasing the number of resident and/or non-resident providers.

Oversight of residency education practices with respect to duty hours has been accompanied by new requirements for supervision and documentation of competency in various skills and knowledge relevant to the field. The competency-based approach to graduate medical education shifts the focus away from an accounting of educational events (conferences teaching electrocardiogram interpretation, for example) to a documentation of acquired ability (can a particular resident interpret electrocardiograms?). This approach, while educationally sound, carries with it a challenge of both measurement and documentation, both of which have grown in scope over the past decade. The Pediatrics Companion Document is an example of this new emphasis on documenting the educational process throughout residency.[11] These recently published guidelines define the expectation that each resident completes and documents activities in the following tasks:

- Self assessment and written reflection
- Individualized learning plan
- Quality improvement
- Documentation of patient and procedure logs
- Proficiency in evidence based analysis

In turn, Residency directors must document competence through ongoing written multi-source feedback and direct observation of each trainee including

- Professional behaviors and interpersonal skills
- Communication with patients and health care associates
- Aptitude in patient handoffs and patient safety
- Clinical capacity through direct observation from physicians, hospital staff, and patients

On the horizon is a novel progressive program which tracks trainees as they advance in skill across a comprehensive series of developmental tasks and markers referred to as "Milestones."[12,13] Each one of these concepts holds sound educational merit and great promise for assuring competence in a uniform manner so that residency leaders may assure their trainees and the public that residents have, upon graduation, acquired the necessary skills for practice. Medical educators have raised concerns, however, that in an era where resident duty hours are capped at a maximum level, such extensive monitoring and documentation requirements may lead to a redirection of resident time away

from the bedside and learning the course of the disease process in the context of relationship-driven care.

The Future

Epochs of change are also arenas for opportunity and improvement. The challenge is ours to embrace as we design the future place of primary care practice for the country.

One possibility is that primary care practice will no longer be a physician dominated field. Contraction of resident work hours coinciding with free market forces create a growing demand for mid-level practitioners who can support extended primary care activity at diminished cost. Perhaps this frame shift is for the best. The model of a primary care medical home with a lead physician supervising a team of experts providing service in mental health, diabetes, behavior, lifestyle, etc. may in fact be the most effective and cost-efficient method of enhancing the health of our population at large.

An alternative model gaining national traction is known as the Accountable Care Organization, an alliance of physicians and hospitals whose financial incentives arise from enhancing health care quality while holding down overall costs. In principle, accountable health care organizations would share the financial risk in medical utilization with the potential to gain vast financial reward for maintaining and improving patient health rather than profiting through greater use.

If our goal as a nation is to enhance the physical and emotional well being of our population while diminishing overall health expenses, there should be movement toward support of the patient-centered medical home. High quality care in tandem with high cost savings should be rewarded by appropriately high reimbursement rates for those groups that effectively support the foundation of quality and affordable health care in the United States. As the nation moves toward a belief that high quality yet controlled health care is worth more than abundant, market-allocated health care, primary care physicians will naturally find their way back to positions of respect, reimbursement, and reward. Residency education will provide a valuable opportunity for trainees to work with primary care role models and mentors.

Recently, the resumption of funding federal grants to promote primary care training, especially in currently underserved areas, bodes well for the support of such career paths. Title VII of the Health Care Health Professions Education Assistance Act had been the single pillar of support to incent education of primary care practitioners. Title VII efforts stimulated a resurgence of individuals entering primary care research and practice. Funding was virtually eliminated in the early part of the 21st century, negatively impacting educational opportunity and support of primary care training programs. Fortunately, there has been an increase in funding at the federal level in fiscal year 2010, with optimism for greater support in 2011.

Residency education in primary care continues to face challenges in the current medical education environment. Some of those challenges such as reimbursement are unique to primary care disciplines while others are shared across programs. Because the influence of role models for primary care has been shown to be an important predictor of pursuit of career in primary care, cultivating innovative programs and strong mentoring relationships to sustain interest among trainees in primary care are critical. The challenge for graduate medical education is to continue to provide high quality experiences for a growing number of medical school graduates, while recognizing the important role played by primary care in the health of the country and in the career paths of our graduates.

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