Choosing Primary Care? Influences of Medical School Curricula on Career Pathways

Howard Tandeter MD[1] and Martine Granek-Catarivas MD[2]

[1] Department of Family Medicine, Faculty of Health Sciences, Ben-Gurion University of the Negev, Beer Sheva, Israel

[2] Department of Family Medicine, Sackler Faculty of Medicine, Tel Aviv University, Ramat Aviv, Israel

Key words: primary care, career choice, medical school curriculum, clerkship, general practice, family medicine

Abstract

In countries in which a primary care-oriented system has developed, general practitioners, family physicians, and other primary care doctors are the keystone of an approach that aims to achieve high quality and satisfaction with relatively low costs. Despite this new trend, medical schools still produce excessive numbers of sub-specialists rather than primary care physicians. Among multiple reasons influencing a career choice either towards or away from primary care (institutional, legislative, and market pressures), the present article discusses ways in which medical school curricula may affect students in their perceptions of the role of primary care physicians. Since students are greatly influenced by the cultures of the institutions in which they train, the negative attitude of a university towards family medicine may negatively affect the number of students going into this specialty. Examples from Israeli faculties are presented.

IMAJ 2001;3:969–972

It is in the interest of healthcare systems around the world to manage their available resources in order to deliver the best value for the public's health. While in many countries the hospital remains the center of medical services, in others a system orientated towards primary care has developed. This change is expected to improve the level of healthcare of the community. Data from the literature [1,2] support this hypothesis, showing that:

- Community health status is proportional to the ratio of primary care to specialist providers and the ratio of primary care to population.
- Countries that developed strong primary care systems generally have healthier populations and lower costs of care.
- Health services based on generalists, who provide comprehensive care for most illnesses and for the health needs of their patients, become increasingly cost-effective.

In countries in which a primary care-oriented system has developed, general practitioners, family physicians and other primary care doctors are the keystone of an organizational approach that aims to achieve the best mix of quality, satisfaction (public and individual) and cost [3]. However, despite the trend for health systems to change in this direction, medical schools still produce excessive numbers of sub-specialists rather than primary care physicians. The result is an obvious shortfall and consequential maldistribution of physician manpower. The fact that medical school graduates prefer the various sub-specialties to primary care is multifactorial.

This article will consider the ways in which education and health are correlated within the curricula of medical schools. It will deal with the bridge that links education and health, and discuss the ways in which aspects of curricula impact on students' perceptions of the role of primary care physicians, and how they may affect students' career choices towards or away from primary care.

Who gives primary care in Israel?

Approximately 24,700 physicians, graduated in Israel or abroad, provide medical services in Israel to a population of about 6,000,000 people (1:250). Around 5,000 of them (15%) are primary care physicians. From these, more than half (57%) have no formal specialization ("general doctors"), and only 43% are specialists (13% family physicians, 10% internists, 17% pediatricians, and 3% from other specialties) [4].

What's happening around the world?

In the USA, the percentage of medical school graduates entering family practice residency programs grew steadily from 1980 to 1997. In 1980–81, only 12.8% of U.S. medical school graduates entered family practice residency programs. That number rose to 14.6% in 1995, 15.9% in 1996, and 16.6% between July 1996 and June 1997 [5]. However, since 1998 this percentage has declined – 15.4% in 1998, and 13.4% between

July 1998 and June 1999 [6]. In consequence, efforts are being made to increase the number of graduates entering generalist careers in the U.S. One example is found in the Generalist Physician Initiative. The basic assumption for its creation was that more medical graduates will become generalists if schools select candidates whose personal characteristics are compatible with generalist careers, and if schools provide them with an educational environment that values generalist careers in the same manner it has hitherto valued specialist careers. The Generalist Physician Initiative helps medical schools to modify the culture in which medical education occurs, in the hope of increasing their production of generalists. Most schools have developed external partners (e.g., state legislatures, managed care organizations, area health education centers) to assist in achieving their goals [7]. Another project is the Interdisciplinary Generalist Curriculum Project, a competitive 7 year demonstration project funded by the Health Resources and Services. The major outcomes of this project include sustained curricular changes in 10 institutions, which were achieved at relatively low cost, and the development of models for collaboration at institutional and national levels [8].

The best examples of medical systems having their port of entry based on primary care physicians are Canada and Britain. South Africa, Australia, New Zealand, and many European countries also have highly developed primary care systems. In these countries, mimicking the move to ambulatory-based healthcare, and medical education at undergraduate, early postgraduate and vocational levels are expected to be introduced into the community within the next 20 years. With this heightened relevance of general practice, the need for a recognized postgraduate qualification as a general practitioner should become universal [9].

An overview with a detailed mapping of the development of family practice around the world was reported in 1995 [10]; it delineates three different levels: countries having no identified system of postgraduate training of family physicians, countries where training programs are being developed, and countries with established training.

Some countries, in South America for example, are developing community-oriented programs, although the mainstream in these countries is still hospital/sub-specialty based. Chile, a country evolving from a military regime to democratic rule, with a mixture of public and private systems of delivery, is redeveloping on the basis of its not completely modern but reliable network of public health facilities in the public subsystem [11]. Efforts are made to redefine the characteristics of the primary care takers, and their ratio to the number of subspecialists will be derived form the population needs [12]. In Argentina, where general internists are the providers of adult medical care in urban areas, a pilot 3 month rotation in outpatient medicine has recently been launched and its effects are being scrutinized [13].

In Japan, postgraduate clinical training programs with defined, comprehensive curricula are rare, and virtually all clinical training is presented in inpatient settings. As a result, many Japanese medical students have an insufficient understanding of what primary care is, and Japanese physicians' clinical competence tends to be insufficient for providing first-class community-based primary care [14,15]. Hong Kong is similar to Japan in its attitude towards primary care. Their medical school curriculum is almost entirely hospital-based and the practice environment does not encourage good primary care [16]. China is revising its entire educational system in order to supply better primary care to its huge rural sector (representing 80% of its whole population). Unfortunately, students entering programs dedicated to the formation of primary care physicians are usually selected in a negative manner – i.e., they are the ones who were not good enough or did not have the option to enter a more prestigious hospital-based academic center [17].

Determinants for career choice

As previously mentioned, there are multiple reasons influencing a career choice either towards or away from primary care. These include institutional, legislative and market pressures [18].

At an institutional level, the four medical schools in Israel differ greatly in their attitude toward primary care (regarding the length of primary care exposure in each of them). While one university presents community-oriented care as a key component of its undergraduate training and has a defined 6 week clerkship during the fifth year of studies, another institution offers only a 4 week rotation in family medicine in the sixth year of the program. Paradoxically, the same university has successfully introduced a 3 year longitudinal integrated course at undergraduate level, with many family physicians as teachers, that offers students an extensive early exposure to the principles of family medicine [19]. Nevertheless, the same course leaders have not succeeded in their objective to increase the duration of the late clerkship, which is taken at the expense of other clinical disciplines. A third University offers only a 2 week rotation. Since students are largely influenced by the cultures of the institutions in which they train, the different attitudes of different medical schools regarding the length of their primary care rotations may affect the number of students going into this specialty. On the other hand, schools (elsewhere) that have primary care missions and have historically produced more generalists convey high levels of encouragement for their students to specialize in primary care [20].

Negative stereotypes of the family physician also lead to low recruitment for primary care specialties. Students acquire distorted images of the primary care specialties, since they learn in academic settings that are essentially hospital-based. In addition, outside of medical school or as patients, students' negative perceptions are too often reinforced – namely, primary care is provided by differing types of professionals who are not exactly comparable, including physicians who have no former residency training ("general doctors"). In Israel, this may be very confusing since about 650 specialists in family medicine will find themselves mixed with and compared with around 2,800 general doctors who do the same job without having the same

training. The resultant trend in this country is a negative stereotyping of the family doctor, which in turn serves to influence career choices away from primary care. The length of the clerkship is not in itself responsible for this negative stereotyping but may reflect a low "proportion of importance" given by medical schools to primary care (2–6 weeks, in a 5 year program).

Legislation could be one of the ways to change this trend, such as a law of compulsory training for any physician who intends to work in primary care clinics. Another crucial way is to change the curriculum contents in medical education. This is probably the most comprehensive means of increasing the production of well-trained, high level, primary care physicians.

Role modeling of primary care during medical school

Experiences at medical school are extremely strong determinants of attitudes to the medical specialties, and attitude is the most important factor in determining choice [21,22]. Researchers at McGill University School of Medicine found that personality, clinical skills and competence, and teaching ability of teaching physicians are the most important factors in the selection of a role model, while research achievements and academic position are less important. They concluded that exposure to role models in a particular clinical field is strongly associated with medical students' choice of clinical field for residency training [23].

Do our medical schools give students enough role modeling in primary care specialties? How can we enlarge the proportion of medical students choosing generalist careers? Some of the strategies suggested to deal with this problem include:

- Institutional reforms that emphasize generalist training
- Increasing the size of generalist faculty
- Requiring clinical training in family practice [24].

In a synthesis of the literature on primary care specialty choice in the USA from 1987 through 1993, Bland et al. [25] found that choosing primary care as a career is associated mainly with two variables:

- Students' characteristics: these included factors such as being female; having relatively low income expectations; being interested in diverse patients and health problems; and having less interest in prestige, high technology, and surgery.
- The curricular experiences of students, such as formally required family practice clerkships and longitudinal primary care experiences. Overall, the number of required weeks in family practice shows the strongest association.

Interest in primary care may be increased by curricular experiences. In a synthesis of the literature published in 1995 [26], the three most important experiences that enhanced interest were:

- A third year required for family medicine clerkships (especially those that are 6 rather than 4 weeks long)
- Continuity experiences in primary care settings
- Primary care tracks (the most promising of all).

Among other authors reporting the effects of undergraduate exposure to specialty choice, Stearns [27] specifies the positive effects of a longitudinal clerkship, compared to "block" clerkships. Teaching areas covered by primary care physicians should not be limited to the clerkship in family medicine. Students' perception of learning in general practice showed that clinical skills could be taught early in the curriculum using primary care tutors [28]. These tutors are more likely to demonstrate positive teaching attitudes, such as showing interest in students and providing feedback, than tutors who are hospital physicians [29].

Commentary

Following on from the critical review of the literature, we suggest that changes in the undergraduate curricula of our medical schools will serve to bring a larger number of graduates into primary care careers, thus improving the level of ambulatory care in Israel. Prolonged family medicine clerkships (at least 6 weeks long) and other early-exposure rotations in primary care may introduce ambulatory care as a core component of the clinical curriculum and present students with the role models needed to make them consider a primary care career. The success of these programs requires strong institutional support, structured curricula, dedicated faculties, sufficient training sites, and significant financial support. Medical schools should understand that the only way to reduce the number of unnecessary sub-specialists and increase the number of primary care physicians is to radically change the undergraduate curriculum toward one that is more community/primary care-oriented. The Ministry of Health should strive to define through legislation and policy the need for specialization of every physician willing to work in the primary care setting (as it is expected in the hospital setting). We believe that every person in this country deserves a good "personal doctor," and suggest that this may be more readily achieved by the adoption of the changes proposed here.

References

1. Starfield B. Is primary care essential? *Lancet* 1994;344(8930):1129–33.
2. Starfield B. Is U.S. health really the best in the world? *JAMA* 2000;284(4):483–5.
3. Moore G. Managing to Do Better: General Practice in the 21st Century. London: Office of Health Economics.
4. Pilpel D, Shemesh AA, Smetaniikov W, Dor M. The primary care physician in Israel: primary physician workforce and estimation of potential candidates. Ministry of Health, State of Israel, March 2000.
5. Kahn NB Jr, Schmittling GT, Garner JG, Graham R. Entry of U.S. medical school graduates into family practice residencies: 1997-1998 and 3-year summary. *Fam Med* 1998;30(8):554–63.
6. Pugno P, Schmittling GT, McPherson DS, Kahn NB Jr. Entry of U.S. medical school graduates into family practice residencies: 1999-2000 and 3-year summary. *Fam Med* 2000;32(8):534–42.
7. Colwill JM, Perkoff GT, Blake RL Jr, Paden C, Beacler M. Modifying

the culture of medical education: the first three years of the RWJ Generalist Physician Initiative. *Acad Med* 1997;72(9):745–53.
8. Kahn N, Davis A, Wilson M, Wartman S, Sherwood R, Norwalk A, Kahn R, Bazell C. The Interdisciplinary Generalist Curriculum (IGC) Project: an overview of its experience and outcomes. *Acad Med* 2001;76(4):S9–12.
9. Worley P, March R, Worley E. Scanning the horizon of training for general practice. *Med Teach* 2000;22(5):452–5.
10. Haq C, Ventres W, Hunt V, Mull D, Thompson R, Rivo M, Johnson P. Where there is no family doctor: the development of family practice around the world. *Acad Med* 1995;70(5):370–80.
11. Azevedo AC. The provision of health services in Chile: historical aspects, dilemmas and perspectives. *Rev Saude Publica* 1998; 32(2):192–9.
12. Carabantes J. Medical subspecialties and health policies: Health Ministry view. *Rev Med Chil* 1996;124(4):501–4.
13. Casal ER, Vazquez EN, Husni C. Diagnosis and treatment in general internal medicine. Curriculum selection. *Med B-Aires* 1994; 54(2):133–9.
14. Otaki J. Considering primary care in Japan. *Acad Med* 1998;73(6):662–8.
15. Ohtaki J, Fujisaki K, Terasaki H, Fukui T, Okamoto Y, Iwasaki S, Tsuda T. Specialty choice and understanding of primary care among Japanese medical students. *Med Educ* 1996;30(5):378–84.
16. Dixon AS, Lam CL, Lam TP. Does a brief clerkship change Hong Kong medical students' ideas about general practice? *Med Educ* 2000;34(5):339–47.
17. WONCA Task Force to China. A report on Medical Education and the development of General Practice/Family Medicine in China. WONCA Publication, 1993.
18. Colwill JM. Where have all the primary care applicants gone? *N Engl J Med* 1992;326(6):387–93.
19. Borkan JM, Weingarten MA, Shlank E, Fadlon J, Kornitzer S, Notzer N, Aviran R, Abramovitch H, Lehmann S, Shmidt-Afeck N, Feinaru M. A model for educating humanistic physicians in the 21st century: the new medicine, patient and society course at Tel Aviv University. *Educ Health* 2000;13(3):346–55.
20. Block SD, Clark-Chiarelli N, Singer JD. Mixed messages about primary care in the culture of U.S. medical schools. *Acad Med* 1998;73(10):1087–94.
21. Musham C, Chessman A. Changes in medical students' perceptions of family practice resulting from a required clerkship. *Fam Med* 1994;6(8):500–3.
22. Morrison JM, Murray TS. Career preferences of medical students: influence of a new four-week attachment in general practice. *Br J Gen Pract* 1996;46:721–5.
23. Wright S, Wong A, Newill C. The impact of role models on medical students. *J Gen Intern Med* 1997;12(1):53–6.
24. Campos-Outcalt D, Senf J, Watkins AJ, Bastacky S. The effects of medical school curricula, faculty role models, and biomedical research support on choice of generalist physician careers: a review and quality assessment of the literature. *Acad Med* 1995;70(7):611–19.
25. Bland CJ, Meurer LN, Maldonado G. Determinants of primary care specialty choice: a non-statistical meta-analysis of the literature. *Acad Med* 1995;70(7):620–41.
26. Meurer LN. Influence of medical school curriculum on primary care specialty choice: analysis and synthesis of the literature. *Acad Med* 1995;70(5):388–97.
27. Stearns J, Glasser M, Miller B. A longitudinal ambulatory care clerkship: graduates' reports on the effect on specialty choice and preparation for residency. *Acad Med* 1993;68(Suppl):537–9
28. Gjerde CL, Levy BT, Xakellis GC. Unique learning contributions of a family medicine preceptorship. *Fam Med* 1998;30(6):410–16.
29. Johnston BT, Boohan M. Basic clinical skills: don't leave teaching to the teaching hospitals. *Med Educ* 2000;34(9):692–9.

Correspondence: Dr. H. Tandeter, Dept. of Family Medicine, Faculty of Health Sciences, Ben-Gurion University, P.O. Box 653, Beer Sheva 84105, Israel.
Phone: (972-8) 647-7436
Fax: (972-8) 993-3722
email: howard@bgumail.bgu.ac.il