



CAREER ISSUES

Commentary: Research on Specialty Choice: The Challenge is in the Details

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There has been longstanding interest in how medical students choose their specialty, which has heightened since the issue has become of policy concern. The perception of an undersupply of primary care physicians in the United States served to focus research into attempting to answer a seemingly straightforward question: why do students select a primary care specialty? An answer to this question would allow the appropriate changes to be made in the medical education “system” so as to increase primary care output.

What much research has revealed, however, is that the simplicity of the question is deceptive. The literature on primary care specialty choice in the United States is well summarized in two review articles that were published in the mid-1990s (Bland *et al.*, 1995; Senf *et al.*, 1997) and in a January 1999 special issue of the journal *Academic Medicine* (Blake, 1999). The ability to draw conclusions and introduce changes based on the literature (both primary studies and review articles), however, is complicated by several factors. These factors will need to be understood in order for schools to make implementation decisions designed to change their primary care output.

High Correlation among Study Variables

Many published studies have concentrated on specific categories of variables (for example, curriculum characteristics or student/graduate characteristics). These studies may produce significant statistical results that identify certain variables as important in specialty choice. However, when included together in regression

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analyses, the variables tend to exhibit a high intercorrelation, so that the final percent of the variance explained is far less than anticipated if each variable made an independent contribution (Martini *et al.*, 1994).

The complicated relationship among predictor variables is best demonstrated by the finding that, in the United States, one of the best predictors of high output of primary care physicians is the ownership status of the medical school (public or private). While this “black box” variable is itself not open to manipulation, it correlates with a number of other variables related to students (for example, percent of state residents in the student body), curriculum (for example, presence of a family medicine clerkship), and school mission. No single variable, however, is a proxy for ownership status (Martini *et al.*, 1994). It is, therefore, difficult to know what specific steps to take to change the production of primary care physicians at a given institution. This leads to the implementation question: how many different changes will be enough to achieve the desired goals?

Inability to Comprehensively Explain Specialty Choice

The paper in this issue by Friedberg & Glick (2000) is a good example of the fact that different factors (or constellations of factors) may influence each individual medical student in making a specialty choice. It is, therefore, difficult to explain the reasons for the behavior of a population of students (that is, the graduates of a specific school in a given year) in quantitative terms. We cannot explain “all the variance” in factors affecting specialty choice decisions for a group of students. It is clear that specific changes will not be successful with every student. This leads to the implementation question: how many students do we want to impact?

The Challenge is in the Details

In the extensive published literature on specialty choice, all the categories of variables that may have an impact most likely have been enumerated (see, for example, Bland *et al.*, 1995). This literature contains many possible changes that could enhance the primary care output of our medical schools. We might also be tempted to do nothing, since changes in the healthcare environment in some countries are a strong stimulus to students’ choice of primary care (Seifer *et al.*, 1996).

What can be done? We know what, statistically, should make a difference, but the “challenge is in the details.” That is, we need to be able to apply the general knowledge about specialty choice so as to change the outcome in a given institution. There likely is no one best approach that will work across countries. Some of the possible changes are sufficiently costly or time-consuming to

implement that they should not be adopted without careful planning. This planning involves an analysis that could have the following components.

Consider the Environment

The environment includes such things as the characteristics of the health care delivery system, the practice opportunities available, the reimbursement policies of government and other payers, and the perceived local and national needs for primary care physicians.

Consider the Institution

The mission of a medical school can have an influence on specialty choice (Martini *et al.*, 1994) if the mission is reflected in other areas, such as admission policies, faculty recruitment, and curriculum. An institutional culture may be supportive of primary care, but, in general, many medical schools in the United States have a “chilly” attitude (Block *et al.*, 1996), which can negatively influence students.

Consider “Input” and “Throughput”

Studies have pointed to the importance of the admissions process in selecting students who eventually will enter a primary care specialty (for example, Rabinowitz, 1993). In this case, the “input” to the medical school is a population of students who are predisposed to primary care. In 1997, 47 of the 125 United States medical schools gave admission preference to applicants expressing an interest in primary care (Barzansky *et al.*, 1997).

It also is important to ensure that students do not lose their interest in primary care as they progress through the curriculum (the “throughput”). This requires a consideration of the curriculum content and structure, the availability of appropriate role models, the sites that are used for teaching, and the minimization of possible negative influences (such as high status faculty who convey discouraging messages).

Conclusions

Creating a system that works to enhance the production of primary care physicians at a given medical school has not been a simple task. In general, success in increasing output has been modest and schools in the US that have historically been high producers of primary care physicians continue to lead the nation. Applying the lessons learned from these schools has not been easy since most research has been descriptive. Bland *et al.* (1995) seem to be on track in calling for more “explanatory research.”

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