

ORIGINAL ARTICLE

THE MARKET FOR INFECTIOUS DISEASES SPECIALISTS

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The emergence of managed care and health care reform has raised questions as to the need for infectious diseases specialists. To ascertain the need for infectious diseases specialists, regular advertisements for subspecialty physicians in the *New England Journal of Medicine* were counted for the last 22 years and the *Annals of Internal Medicine* for the last 10 years. For infectious diseases specialists, there are now over 150 advertisements per year. Approximately 15% of those are for academic or research positions. The relative market value index for infectious diseases specialists (ratio of advertisements per year per graduating fellows) is lower than for hematology/oncologists but comparable with or greater than for rheumatologists and endocrinologists. Judging from the market place of medical journal job advertisements, there are a growing number of jobs available for physicians with training in infectious diseases with the apparent opportunities in private practice more than in academic medicine or research.

WITH THE RECENT interests in health care reform, the need for medical specialty and subspecialty services has been questioned [1–3]. A 1994 article in the *Journal of the American Medical Association* estimated there would be a surplus of 135,000 specialists by the year 2000 [4]. A consequent emphasis on training primary care physicians and development of the “gatekeeper” concept by managed care led to a decline in the number of internal medicine residents applying for fellowship positions in its subspecialties. Over the last few years, however, the situation may be changing. There have been dramatic increases in the number of physician assistants and nurse practitioners, who have been given primary care responsibilities and prescriptive authority in many states [5–7]. There is also a growing need for subspecialists as new technology is developed, new medications become available, and patient care becomes increasingly complex in an aging population. A

renewed demand for specialist physicians has been reported by at least one physician recruiting firm [8].

In the subspecialty of infectious diseases, the debate continues about the need for more physicians. At least one of our founding fathers could not envision the progress and expansion that has occurred [3]. The Infectious Diseases Society of America (IDSA) has reviewed the manpower needs in our specialty on several occasions [9,10] with recommendations to the training program directors that the number of fellowship positions be reduced. On the other hand, verbal reports by clinicians in private practice and in many of the larger health care organizations indicate increasing demands for infectious diseases services and disappointing responses in trying to find partners or persons to fill those positions. Many practicing physicians have hired physician assistants or nurses to meet the demands when they could not find physicians. Many also complain of being overworked, professional burnout, and long for early retirement. While there are a limited number of new teaching and research positions available, there appear to be opportunities for infectious diseases specialists in clinical practice judging from the increasing percentage of IDSA members working outside academic medicine. There also appear to be many ways to apply the skills of infectious diseases specialists in areas such as infec-

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tion control, appropriate antibiotic use, outpatient parenteral antibiotic therapy, HIV care, microbiology, epidemiology, information management, and now biological warfare [11]. The public media has also become a powerful marketing force by adopting infectious diseases as one of its favorite topics for magazine covers, feature articles, and reporting. The horrifying events of September 11, 2001 and the outbreak of anthrax have elevated the specialty of infectious diseases to new heights in the eyes of the public. Identifying oneself as an infectious diseases specialist in a social gathering has become much more acceptable than it was previously.

It is not easy to predict the future need for infectious diseases specialists but it is possible to measure the market place for physicians through counting the advertisements in the classified employment opportunities section in the leading medical journals [12]. This was done for infectious diseases specialists by Preheim, who counted the number and type of positions for infectious diseases specialists that were advertised in the *New England Journal of Medicine* (NEJM) in 1990, 1993, and 1995 (Figs. 1 and 2) [13]. He found a decline in the total number of advertisements, that the positions available were increasingly in private practice, and that they involved the care of patients with HIV. What has happened since that grim report is unclear.

Because of the discrepancies between the training program director's perspective and concerns in the

practicing community about finding new associates, the market value for infectious diseases specialists was again reviewed with the use of advertisements in two leading medical journals.

METHODS

Advertisements for infectious diseases specialists in the classified section of the NEJM were reviewed from 1979 through 2001. Only the ads in the first issue of each month were counted as the advertisements usually run for a month at a time. The advertisements were classified as "academic" or "practice" depending upon indications in the advertisements as to what the primary work in the position would be. The mention of a university faculty position was sufficient to consider the advertisement as "academic." Advertisements falling outside of "academic" and "practice," including those relating to drug research and government positions, were not included. In addition, ten years of the *Annals of Internal Medicine* classified section were reviewed for advertisements for infectious diseases specialists using the same methodology. Advertisements for four other medical subspecialties in the NEJM were also counted from 1989 through 2001, although there was no breakdown as to whether they were for academic or practice jobs.

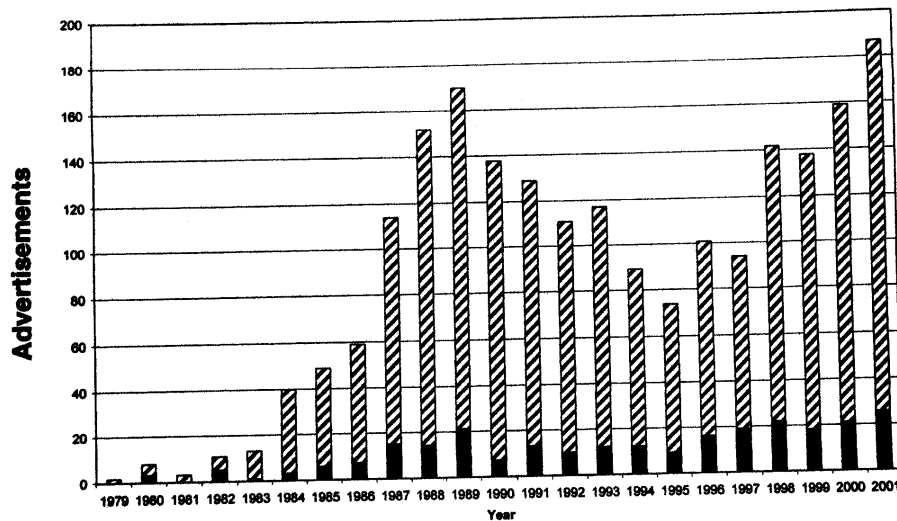


FIGURE 1. Advertisements for infectious diseases specialists in the *New England Journal of Medicine*.

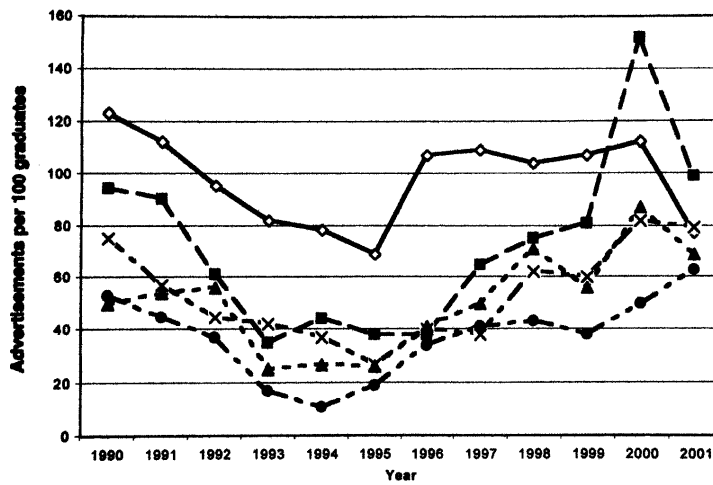


FIGURE 2. Relative market value of different subspecialties in the *New England Journal of Medicine*.

Information about the number of fellowship positions in different medical specialties was also gathered from the annual medical education issues of the *Journal of the American Medical Association* [14]. These

numbers were used to calculate a "relative market value index," which is a ratio of the number of advertisements for the year to the number of new graduates in the preceding year for that subspecialty (Fig. 3).

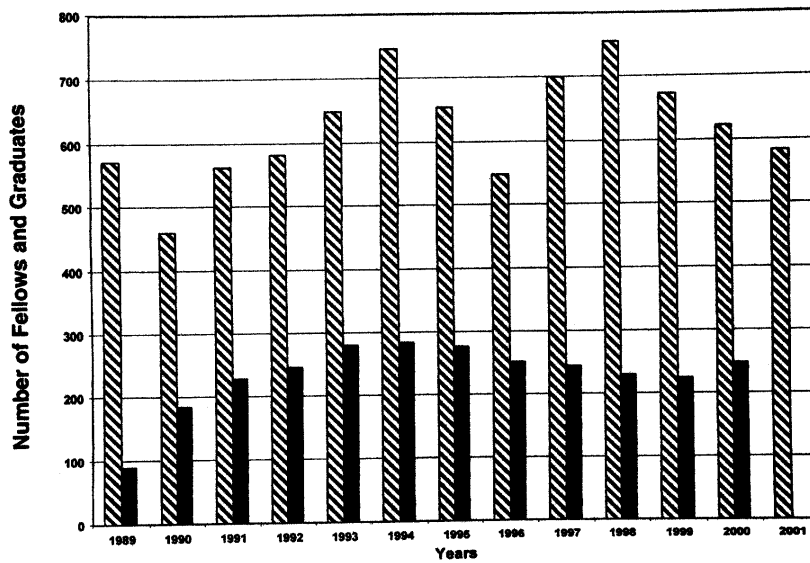


FIGURE 3. Infectious diseases fellows and graduates.

RESULTS

Advertisements for academic and practice infectious diseases specialists in the NEJM for the last 20 years are indicated in Graph 1. There was a rapid rise in the number of advertisements for both types of positions in the late 1980s, likely due to the emergence of the acquired immune deficiency syndrome. The fall in advertisements from 1989 through 1995 is consistent with the findings previously reported by Preheim [13] and likely a result of the impact of managed care forces, which focused on developing primary care and gatekeeper physicians. Of interest, however, is the progressive increase of more than 140% in the annual number of advertisements placed since 1995. Review of classified advertisements in the *Annals of Internal Medicine* from 1992 through 2001 found similar trends until 1999 when the number of advertisements for infectious diseases specialists fell. This is thought to be a result of the declining number of advertisements in the journal, which are less than one third the number in the NEJM. The percentage of advertisements for academic positions was usually less than 15% in both journals.

Graph 2 displays the relative market value index for new graduates of training programs in nephrology, endocrinology, rheumatology, hematology/oncology and infectious diseases. Relative market value indices were calculated from figures on the number of fellows completing postgraduate training and the number of advertisements in the NEJM. The number of advertisements per year for each graduating fellow again shows a decline for most specialties in the early 1990's, but a resurgence later in the decade. The positions available per graduating fellow appear to be greater for hematologists/oncologists than for infectious diseases specialists, but at least as great as the specialties of endocrinology and rheumatology.

The number of fellows being trained in infectious diseases is shown in Graph 3. There have been variations in the number of fellows in training recently but the number graduating has been relatively constant. The variations in the number of fellows likely represents changes in the years of training before graduation.

DISCUSSION

The use of journal advertisements to ascertain the market for medical subspecialists has many limitations but may provide some insight as to the number and type of jobs available in our specialty. There are a number of potential shortcomings of this approach. The Internet is increasingly used for job searches without jour-

nal advertising (<http://www.idsociety.org>). Professional employment agencies are also playing a greater role with medical subspecialists and may not all advertise in journals. Many positions are filled by word of mouth or by prearrangement. Academic positions may not be advertised because fellows within the department fill them. The number of academic positions available is likely greater than reflected in the classified sections because of these informal methods of recruiting. A survey of fellows in 1995 indicated 30% of graduates found a position in academic medicine [15].

The increase in the number of advertised positions for medical specialists since the mid 1990's may reflect the failure of managed care incentives to limit referrals or simply a growing appreciation of the value of expertise or efficiency in the care of complex patients. The jobs available for infectious diseases specialists may also be increasing through the interest generated by the national and local media. The public and hiring administrators are now much more knowledgeable and concerned about emerging infections, antibiotic use, and infection control than ever before. The real prospects of biological warfare have attracted media attention and will likely attract physicians to the specialty.

The relative market value index for infectious diseases specialists also shows an expanding market for fellowship graduates after a decline in the early 1990s. The relative market value index for graduates of other medical subspecialties suggests infectious diseases specialists are as desirable as most other medical subspecialists. It is difficult to speculate further about the relative need of different subspecialists as the methods of finding jobs and the use of different subspecialty journals to advertise vary considerably.

Whether the apparent job market increase will translate into more applicants for infectious diseases fellowship positions is uncertain. According to information available through the American Medical Association, less than 75% of positions were filled in 2000 and only 56% of the fellows are United States medical school graduates. Only some of the foreign medical school graduates will be able to become residents and fill the needs in the United States [10,14]. The lack of increase in the number of fellows finishing training in the face of apparent market interest is of some concern but may bring more value and possibly income to those who do graduate. It is also possible that the need for, and appreciation of, the value of infectious diseases specialists will increase as training programs adapt to the ongoing changes in medicine and produce fellows oriented to clinical practice, ambulatory care, and the management of chronic diseases [16].

There are additional considerations in regard to jobs for infectious diseases specialists. Many medical communities do not have a specialist trained in infectious diseases and do not advertise for one. This is an unstudied need to be filled by pioneering and enterprising physicians who can recognize the many opportunities available in a community [11]. It is also true that training in infectious diseases does not guarantee a rewarding position, high income, or productive relationships. It should also be recognized that infectious diseases is a maturing specialty. Many of the pioneers in our field are reducing their hours and planning retirement after more than 20 years of hard work. More fellows will need to be trained to fill their positions.

In summary, the actual need for infectious diseases specialists is difficult to discern or predict but journal advertisements suggest it is increasing. The employment positions available will likely grow with emerging infections, antimicrobial resistance, the threat of biological warfare, and an aging population. Whether the number of fellowships applicants will increase and the needs will translate into jobs is uncertain but it appears the opportunities for employment are increasing, especially in clinical practice.

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