

# Motivations for a career in emergency medicine: a profile of the 1996 US applicant pool

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## ABSTRACT

**Introduction:** Although some studies have tried to assess the factors leading to choice of specialty, none have been specific to emergency medicine (EM). With a doubling of the number of EM residency programs in the past decade, an assessment of the career motivations of residents is in order.

**Objectives:** To identify and rank the factors that lead candidates to choose EM as a career.

**Methods:** Fifty-four participating EM programs returned a total of 393 anonymous surveys completed by their 1996 National Residency Matching Program (NRMP) interviewees. The survey asked respondents to rank 12 factors on a 5-point (0–4) Likert scale.

**Results:** Respondents ranked the 12 motivating factors in the following descending order of importance: diversity in clinical pathology, emphasis on acute care, flexibility in choice of practice location, flexibility of EM work schedules, previous work experience in EM, greater availability of EM faculty for bedside teaching, strong influence of an EM faculty advisor or mentor, relatively shorter length of training, better salaries for EM than for primary care specialties, the presence of an EM residency at the student's medical school, perception that EM residents have more time to moonlight and popularity of EM among medical students.

**Conclusion:** US applicants appear to choose a career in EM largely because of clinical factors (diversity of clinical pathology and emphasis on acute care) and practice-related factors (flexibility in practice location and schedule).

## RÉSUMÉ

**Introduction :** Bien que certaines études aient tenté d'évaluer les facteurs menant au choix d'une spécialité, aucune n'a jamais ciblé spécifiquement la médecine d'urgence (MU). Le nombre de programmes de résidence en MU ayant doublé au cours de la dernière décennie, une évaluation des choix de carrière des résidents s'impose.

**Objectifs :** Identifier et classer les facteurs qui amènent un candidat à faire de la MU un choix de carrière.

**Méthodes :** Cinquante-quatre programmes de MU participants nous retournèrent un total de 393 sondages anonymes complétés par des participants du National Residency Matching Program (NRMP) effectué en 1996. Le sondage demandait aux participants de classer 12 facteurs sur une échelle de Likert en 5 points (0-4).

**Résultats :** Les participants classèrent les facteurs motivant leur choix dans l'ordre décroissant d'importance suivant : diversité des pathologies cliniques, emphase sur les soins actifs, flexibilité dans le choix du lieu de pratique, flexibilité des horaires de travail en MU, expérience de travail antérieure en MU, plus grande disponibilité des enseignants en MU pour l'enseignement au chevet des malades, influence marquante d'un conseiller ou d'un mentor du corps enseignant en MU, durée relativement plus courte de la formation, meilleurs salaires pour la spécialité de MU par rapport aux spécialités de soins primaires, la présence d'un programme de résidence en MU à l'école de médecine de l'étudiant, perception que les résidents en MU ont plus de temps pour faire des gardes supplémentaires et la popularité de la MU parmi les étudiants en médecine.

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**Conclusion :** Les candidats américains semblent choisir une carrière en MU en grande partie en raison de facteurs cliniques (diversité des pathologies cliniques et emphase sur les soins aigus) et de facteurs reliés à la pratique (flexibilité quant au lieu de pratique et à l'horaire).

**Key words:** emergency medicine, specialty choice, motivation, residency match, National Residency Matching Program, career choice

## Introduction

By the beginning of the fourth year of medical school, student physicians must choose a specialty. Some reports have indicated a trend among students toward earlier consideration of specialty choice.<sup>1,2</sup> Although some studies have reported consistency in individual students' selection of primary care or non-primary care training throughout medical school, others report significant instability.<sup>3-5</sup> This critical decision is based on numerous factors, including personality, gender, values, prior exposures and commitments, post-graduate and graduate experiences, projected income, specialty competitiveness, health risks and practice potentials.<sup>5-8</sup>

Numerous studies have attempted to identify predictors of specialty choice.<sup>6-12</sup> US student physicians have been typically attracted to surgical specialties.<sup>9,11,12</sup> They perceived non-primary care training as indicative of mastery of a "distinct field" where the combination of knowledge and technological advances enabled them to manage previously untreatable conditions.<sup>13</sup> Perceptions of greater income potential and control over professional and personal life provide additional incentives.

Recently, the trend toward specialization is reversing, and more students are choosing primary care.<sup>14,15</sup> In our changing health care environment, primary care residency positions and employment opportunities have increased and become more attractive, enticing a larger number of students.<sup>14</sup>

Emergency medicine (EM) is a unique specialty with a broader scope of practice than most primary care specialties. EM is the health care system's safety net and provides much essential primary care, particularly to indigent and underinsured populations. Despite being 1 of the 2 youngest specialties, EM has grown considerably in the United States, nearly doubling its residency programs in the past 14 years (from 69 in 1985 to 122 in 1999).<sup>16</sup> Combining first- and second-year entry, National Residency Matching Program (NRMP) positions in allopathic programs rose from 715 to 1098 in the past 6 years, accounting for 5% of all postgraduate year 1 (PGY-1) NRMP positions in 1998.<sup>17</sup> In addition, EM is 1 of 5 specialties (the others being orthopedics, general surgery, pediatrics and dermatology) that consistently maintain a fill rate exceeding 95%. In 1992,

EM accounted for only 3 of the 4004 PGY-1 positions that were filled by non-US international medical graduates (IMGs), matching the lowest percentage of non-US IMGs for all other specialties (<0.4%).<sup>17,18</sup> Finally, EM has been witnessing a highly competitive applicant pool in terms of both numbers and quality.<sup>19,20</sup>

Few studies have addressed the profile of the medical graduates who select EM as a career.<sup>20-24</sup> The objective of this study was to assess the profile of influences identified by EM applicants as factors motivating their specialty selection.

## Methods

### Survey instrument

Two experienced members (A.A.K. and M.I.L.) of the Council of EM Residency Directors developed a survey that listed 12 possible motivations for choosing EM as a career. The selection of items was based on the members' cumulative 17-year history of reviewing over 4000 program applications.

### Subjects

During the 1996 interview season, all allopathic EM program directors in the United States were invited to participate in this study. Copies of the survey were sent by mail to consenting program directors, to be administered to applicants on a single interview date in the last 2 weeks of January 1996. Completion of the survey was voluntary and anonymous. Students were asked not to complete the survey if they had encountered it previously at another site. Each respondent was asked to rate the importance of the 12 motivation items on a 5-point (0-4) Likert scale. Importance was to be rated as none (0), minor (1), moderate (2), major (3) or maximal (4). Responses were returned in sealed envelopes to the sponsoring institution and were not available to staff at the site where the applicant completed the survey.

### Data analysis

All returned surveys were included in the analysis. Incomplete or missing data are reported as such. Descriptive statistics, including medians and ranges, were calculated for each item.

### Ethical review

The study was reviewed by the Institutional Review Board at our institution and qualified for exempt registration, without written consent.

### Results

Of 112 EM program directors in the US, 6 declined because of time constraints, 32 did not respond to our follow-up calls, and 74 agreed to participate in the study. Subsequently, 20 of the 74 stated that their schedules had become too busy, and they could not administer the survey. The remaining 54 program directors (73%) returned 393 of a possible 517 surveys (76% response rate). Of the 393 returned surveys, 1 was blank, 28 had partial data, and 364 were complete. The 393 survey respondents represented 36% of the 1091 US applicants who ranked at least 1 EM program in 1996 (1997 NRMP program results).<sup>17</sup>

Completed surveys came from the western, northeastern, midwestern and southern states (32%, 30%, 27% and 11% respectively). Three-year programs (PGY 1–3 and PGY 2–4) accounted for 77% and 10% of respondents, respectively, whereas 4-year programs (PGY 1–4) accounted for 9%. For 4% of respondents, the duration of the program was uncertain. The mean age ( $\pm$  standard deviation) of respondents was  $28 \pm 3$  years (range 22–44).

### Importance of factors

Table 1 illustrates the relative importance of the 12 factors.

The applicants were most influenced in their choice of a career in EM by diversity of clinical pathology, emphasis on acute care, and flexibility in choosing practice location and schedule. Moderate or minor influence was attributed to all other factors in our survey.

### Discussion

#### Diversity of clinical pathology

The degree of diversity in clinical pathology is nearly unique to EM, and this was the most important motivating factor for students in our survey. Emergency physicians (EPs) care for patients of all ages and backgrounds and deal with life-threatening, acute and chronic problems relating to all organ systems. The scope of practice in EM is also diverse, depending on the practice setting (e.g., rural, tertiary) and the availability of specialty back-up, follow-up care and hospital equipment. In a 1995 abstract, Zeumer<sup>24</sup> reported a similar finding: 77% of 136 surveyed applicants rated the “variety of clinical experience as the primary reason to specialize in EM.”

#### Emphasis on acute care

Acuity was the second most important motivator for selection of this specialty. EM encompasses procedural, interventional and diagnostic clinical medicine in dealing with the onset of new illness, the initial manifestation of injury and the acute manifestation of chronic illness. Our findings are consistent with a previous report in which EM appli-

**Table 1. Influence of 12 factors motivating students' choice of a residency in emergency medicine (EM), as determined by survey responses**

Factor*	Level of influence on choice (and numeric value); no. of respondents†					Median	Interquartile range
	None (0)	Minor (1)	Moderate (2)	Major (3)	Maximum (4)		
Diversity of clinical pathology	0	1	17	153	219	4.0	3.0–4.0
Emphasis on acute care	0	0	30	168	193	3.0	3.0–4.0
Flexibility of practice location	7	43	129	173	39	3.0	2.0–3.0
Flexibility of work schedule	5	34	151	160	40	3.0	2.0–3.0
Previous EM work experience	56	51	83	117	84	3.0	1.0–3.0
Availability of faculty for bedside teaching	49	86	147	89	19	2.0	1.0–3.0
Presence of EM mentor	78	100	107	81	24	2.0	1.0–3.0
Length of residency	75	120	146	44	5	1.5	1.0–2.0
Income and salaries	76	130	139	42	3	1.0	1.0–2.0
EM residency at student's school	167	51	57	91	21	1.0	0.0–3.0
Perception of opportunities for moonlighting	111	170	79	24	6	1.0	0.0–2.0
Popularity of the specialty	213	123	42	11	2	0.0	0.0–1.0

\*In descending order of influence.

†Total number of respondents was 393. Total number of responses for each factor is less than 393 because not all respondents ranked every factor.

cants described trauma experience as one of the most influential factors in choosing programs.<sup>25</sup>

### ***Geographic flexibility***

Flexibility in practice locations was the third most important factor in this study. Because of the abundance of emergency departments (EDs) and urgent care centres in the United States, EPs have flexibility in choosing their employment. A shortage of residency-trained physicians to meet national demand continues to be reported for EM.<sup>26,27</sup>

### ***Scheduling flexibility***

Lifestyle was a factor of moderate importance in motivating students to pursue EM. EPs commonly work 3–5 days per week in 8- to 12-hour shifts. These shifts include nights, weekends and holidays, with approximately 75% of working hours outside the traditional 9 to 5, Monday to Friday workweek. This diversity allows flexibility in coordinating work with other obligations, hobbies, travel and family interests. Furthermore, the concentration of EM on acute rather than continuous care reduces the need for to be on call. Over the past 20 years, a number of studies have demonstrated that US applicants consider the ability to control work hours and lifestyle an increasingly important factor in specialty selection.<sup>19,28</sup>

### ***Previous EM work experience***

Previous EM work experience had a moderate influence on career selection, which suggests that a large proportion of EM applicants have already “worked” in EDs. Our survey question asked specifically about substantial exposure to EM through “nursing, EM technicians (EMTs), [and] paramedic” employment. It did not include the impact of early student exposure through clinical clerkships or EM interest groups. A previous study reported that early emergency medical services education (ambulance rides and helicopter observation) “helps influence the direction” of medical students toward a career in EM.<sup>22</sup>

### ***Bedside teaching***

A perception of greater availability of EM faculty for bedside teaching was a moderately important factor in applicants’ choices. The US Accreditation Council for Graduate Medical Education (ACGME) mandates 24-hour faculty presence in the ED for all accredited EM residencies, and evidence of 24-hour faculty coverage, attributed to these requirements, has been documented.<sup>29</sup> Our finding suggests that students perceive that EM faculty are more available or less likely to delegate bedside teaching to residents. The acute care offered in the ED allows little room for error. As

such, the availability of EM faculty for teaching and supervision is critical.

### ***Mentorship***

The degree of a mentor’s influence on career choices by medical students has been debated and was of only moderate to minor importance in this study. It might be expected that mentorship would be important, in light of the difficulty that many students have in resolving their specialty choice.<sup>1,2</sup> Not surprisingly, seniors are more accurate in predicting their specialty than freshmen, because they have had more clinical exposure to role models.<sup>3</sup> Coker found that faculty had little influence in specialty choice,<sup>10</sup> but he also reported significant variability in the influence of individual faculty members. The impact of negative role models has been documented as an important deterrent in other specialties.<sup>30,31</sup>

### ***Length of training***

EM training is relatively short. In 1996, 84% of all NRMP positions in EM were in 3-year programs, the shortest postgraduate training required for specialty board certification.<sup>18</sup> Length of training has been reported as a significant determinant of applicants’ ranking of 3- and 4-year EM residencies.<sup>25</sup> Despite this potential attraction, more than 50% of respondents to our survey considered duration of training as a minor influence on their selection.

### ***Income and salaries***

More than 50% of respondents rated income as a minor factor, yet financial compensation is usually important in attracting students to specific careers. Applicants who select non-primary care specialties consider greater financial compensation an additional incentive.<sup>13</sup> Generalist physicians frequently report perceptions of the current physician payment system as one that undervalues primary care and non-procedural services and that has excessive bureaucracy and enormous regulation.<sup>13,15,31</sup> Such perceptions have been reported to discourage students from pursuing primary care. Salaries in EM are comparable to those in many of the best-paid specialties, which typically require longer training, and they are relatively higher than those for primary care specialties. Board-certified EPs typically earn an hourly wage ranging from US\$100 to US\$140.

Indebtedness of EM applicants is among the highest for all medical students.<sup>20,21,32</sup> High indebtedness might be assumed to lead to selection of a high-paying specialty. Previous studies have suggested that indebtedness plays a role in career selection.<sup>8,13,33</sup> However, as indicated by our results, its strength as an independent predictor of specialty choice may be questionable.<sup>21,33</sup>

### ***Presence of an EM program***

The presence of an EM program at the applicant's school played only a minor role in specialty selection in our survey. This finding seems to contradict previous research by Gallagher, who demonstrated that students were more likely to select EM at medical schools with a closely affiliated residency program.<sup>23</sup> Although EM applicants may not select EM because of the existence of a program at their school, the presence of an EM program may lead to an increase in EM-bound graduates simply because it allows students to interact with residents and faculty in the field and thereby to gain a better understanding of EM training and lifestyle and to learn about income potential, program selection and flexibility in practice opportunities.

### ***Moonlighting***

Another significant finding in our study was the minor importance of moonlighting to EM applicants. Moonlighting is an important issue for residents in most specialties because of relatively low residency salaries, the long wait to financial gratification in medical careers and large debts after medical school.<sup>7,34,35</sup> Nearly a decade ago, reports by the ACGME and Xu indicated that applicants' indebtedness in EM was the highest of all specialty choices.<sup>20,21,32</sup> More recently we reported a near doubling of that average debt in one decade, from US\$33 499 in 1986<sup>32</sup> to US\$72 290 in 1996.<sup>36</sup> We also reported a lack of correlation between level of indebtedness and support for moonlighting among EM residents.<sup>36</sup> Finally, although respondents in this survey gave only minor importance to moonlighting, most EM residents do obtain moonlighting positions.<sup>37</sup>

### ***Popularity***

The prestige of a specialty has been described as an important influence on the career choice of students. For example, a perceived lack of glamour has been reported as a deterrent in choosing internal medicine.<sup>31</sup> Likewise, in family medicine, related disincentives include inadequate respect from academia and specialists.<sup>15</sup>

EM has become one of the most competitive and popular specialties,<sup>19,20</sup> yet we found that EM applicants considered issues of prestige and competitiveness of minimal importance.

### ***Limitations***

Our study was limited by the survey design. Despite reassurances of anonymity, applicants might have selected answers that they perceived would impress residency directors or would not jeopardize their chances of acceptance. Such respondent bias is inherent in an interview setting, where

questions are asked about the importance of income, work hours and moonlighting. Our questions were not pretested to establish whether they were relevant or discriminatory.

The response rate for participating sites (76%) was high, but respondents constituted only 36% of the US applicants who listed at least one EM program in 1996. The findings are subject to selection bias, as we were unable to compare respondents to nonrespondents. We felt that preserving survey anonymity on this sensitive subject was more important than identifying nonrespondents.

The study also had some strengths. Applicants were surveyed during the course of January interviews. We felt that this population of applicants would be most in tune with motives and concerns about an EM career and most representative of commitment to EM as a specialty choice. Applicants did not have prior warning of the survey, and participation was voluntary. Respondents were unable to discuss the survey questions with others before answering, and their answers were not biased by match results. We believe that selection and respondent bias would have been higher had the study been completed by mail before the interviews or after residencies had begun.

Our choice of factors as potential influences may have resulted in selection bias, and there might have been other important influences that we did not include in our survey. The wording of the choices might have elicited particular responses. However, we felt that the alternative (open-ended questions) would have significantly reduced the response rate and our ability to generate usable data, because the subject of career motivation is highly subjective.

We did not identify applicants with prior training, and this subgroup of applicants might have played a significant role in our results. These applicants may have a greater interest in the short duration of EM training and they may favour moonlighting. Conversely, they may emphasize their strong motivation to undertake additional years of training. Applicants with prior training are more likely to have experienced the clinical conditions associated with EM and additional income of moonlighting.

## **Conclusions**

Residency applicants choose EM largely because of clinical factors, followed by factors related to practice flexibility. Salaries, the presence of a residency program at the student's school, mentorship and moonlighting opportunities were less important in career selection. It is important that EM leaders and educators understand the influences that motivate applicants choosing our specialty as a career. Such an understanding is essential to allow appropriate design of

the core curriculum and the scope of practice for EM, and development of the most effective strategies to attract the best applicants into EM residency programs. Future studies should elicit and assess factors that deter applicants from EM, such as concerns about potential burnout or working hours that are discordant with the lifestyle of family and friends. These are important questions for a specialty that is now attracting nearly 5% of US medical graduates and growing more quickly than all other specialties.

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