

Ranking in Canadian gastroenterology residency match: What do residents and program directors want?

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BACKGROUND: Matching to a gastroenterology (GI) fellowship position in Canada is increasingly competitive.

OBJECTIVE: To identify factors that determine how residents rank programs across the country, and how program directors rank their applicants.

METHODS: Using input from several current GI trainees and former program directors, two separate surveys were developed. An online survey was sent one month after the match to every resident matched to an adult GI program in the 2007 match. A separate online survey was simultaneously sent to all program directors of 14 accredited GI programs in Canada. Two subsequent cohorts (2008 and 2009) of matched residents were surveyed during the annual GI fellow endoscopy course at McMaster University (Hamilton, Ontario).

RESULTS: The overall response rate was 64 of 91 (70%) for residents and 11 of 15 (73%) for program directors (one program had codirectors). Using a five-point Likert scale for rating the importance of various factors influencing their decision, residents from three years ranked the following factor as most important: suitable location for spouse/partner/family (median score = 5). The overall least important factor was an opportunity for pediatric elective (median score = 2). Using the same scale, program directors ranked the following factors as most important (median score = 5) in ranking residents to their program: the ability to get along with others, outstanding reference letters, exceptional curriculum vitae and applying to only one specialty.

CONCLUSIONS: Several factors important for GI applicants and program directors were identified, as well as a few less-important factors. Based on these results, GI training programs can more effectively market their programs to applicants in the future, and residents applying to GI programs can strengthen their applications in the ever competitive match process.

Key Words: Fellowship match; Gastroenterology; Program director; Training program

Gastroenterology (GI) is a competitive specialty among internal medicine trainees. In the United States, data from 2002 to 2003 (1) indicate that GI was the second most popular specialty after cardiology. This is a dramatic increase from earlier surveys performed in 1998 in which internal medicine trainees ranked GI/hepatology as the sixth most popular specialty (2). Although no Canadian data regarding the popularity of GI exist, trends from the United States may be highly suggestive of a similar pattern in Canada (3).

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Le classement selon le système de jumelage des résidences en gastro-entérologie au Canada : Que veulent les résidents et les directeurs de programmes?

HISTORIQUE : Le système de jumelage aux postes de moniteurs cliniques en gastro-entérologie au Canada est de plus en plus compétitif.

OBJECTIF : Déterminer selon quels les facteurs les résidents classent les programmes au pays et les directeurs de programmes classent les candidats.

MÉTHODES : À l'aide des données fournies par plusieurs résidents actuels en gastro-entérologie et d'anciens directeurs de programmes, les auteurs ont préparé deux sondages en ligne distincts. Ils ont fait parvenir le premier à tous les résidents jumelés à un programme de gastro-entérologie chez l'adulte pour 2007, un mois après le jumelage. Ils ont simultanément envoyé le second sondage aux directeurs des 14 programmes de gastro-entérologie accrédités au Canada. Deux cohortes subséquentes (2008 et 2009) de résidents jumelés ont été interrogées en marge du cours annuel d'endoscopie pour les moniteurs cliniques en gastro-entérologie de l'Université McMaster (Hamilton, Ontario).

RÉSULTATS : Le taux de réponse globale a été de 64 résidents sur 91 (70 %) et de 11 directeurs de programmes sur 15 (73 %) (un programme avait deux codirecteurs à sa tête). À l'aide d'une échelle de Likert en cinq points visant à évaluer l'importance de divers facteurs pouvant influencer sur leurs décisions, les résidents des trois années en question ont jugé le facteur suivant plus important : emplacement convenable pour les conjoints et la famille (score médian = 5). Le facteur globalement le moins important a été la possibilité d'un stage pédiatrique (score médian = 2). À l'aide de la même échelle, les directeurs de programmes ont jugés les facteurs suivants plus importants (score médian = 5) au moment d'évaluer les candidats à leurs programmes : capacité de bien s'entendre avec autrui, lettres de référence irréprochables, curriculum vitae exceptionnel et demande auprès d'une seule spécialité.

CONCLUSIONS : Les auteurs ont relevé plusieurs facteurs importants pour les candidats et les directeurs de programmes en gastro-entérologie, de même que quelques facteurs de moindre importance. Dorénavant, à partir de ces résultats, les programmes de formation en gastro-entérologie pourraient mettre leurs programmes plus en valeur auprès des candidats et les résidents qui se portent candidats pourraient mieux étayer leurs demandes dans ce processus de jumelage toujours plus compétitif.

Canadian fellowship positions are obtained through a post-graduate year (PGY)-4 match every November. Program directors are responsible for recruiting the best applicants into their program. The criteria for successful applicants are slightly different and depend on the goals of the program. Each applicant submits a curriculum vitae, letters of reference and a cover letter to all programs. Most programs conduct interviews; the total number of fellowship positions at any institution is not fixed. There is at least one guaranteed position per specialty

TABLE 1
Applicant responses

| Factor | Year | | | Total (n=64) | Men (n=41) | Women (n=16) |
|---|----------------|----------------|----------------|-----------------|---------------|-----------------|
| | 2007 (n=16) | 2008 (n=24) | 2009 (n=24) | | | |
| The program has a very good reputation | 5* | 4.5 | 4* | 4 | 4 | 5 |
| The length of the program, two or three years, meets my objectives | 4 | 4 | 4 | 4 | 4 | 4 |
| The program can offer guaranteed funding for a third year if desired | 3 | 4 | 2 | 3 | 3 | 3 |
| This program sponsors trainees to attend conferences | 4 | 4 | 4 | 4 | 4 | 4 |
| The program tried to impress/recruit me during the interview | 4 | 3.5 | 4 | 4 | 4 | 4 |
| The location is suitable for my spouse/partner/family | 5 | 5 | 4 | 5 | 5 | 4.5 |
| This program offers endoscopic retrograde cholangiopancreatography as part of its core training | 3 | 3 | 3 | 3 | 3 | 3 |
| This program offers endoscopic ultrasound exposure as part of its core training | 3 | 3 | 3 | 3 | 3 | 3 |
| This program offers exposure to capsule endoscopy | 3 | 3 | 3 | 3 | 3 | 3 |
| This program offers exposure to liver transplant | 4 | 4 | 4 | 4 | 4 | 4 |
| This program offers electives in pediatric gastroenterology | 2 | 2 | 2 | 2 | 2 | 2 |
| This program offers electives in nutrition/total parenteral nutrition | 3 | 3 | 3 | 3 | 3 | 3.5 |
| This program has mandatory research blocks | 4 | 4 | 3.5 | 4 | 4 | 4 |
| This program has a dedicated gastroenterology ward | 3 | 3 | 3 | 3 | 3* | 4* |
| This program has an outpatient clinic run by fellows | 3.5 | 4 | 4 | 4 | 3 | 4 |
| The program will prepare me for an academic career | 4 | 4 | 4 | 4 | 4 | 4 |
| The program will prepare me for a community career | 4 | 4 | 4 | 4 | 4 | 4 |
| Recent trainees were successful in obtaining further fellowships | 5 | 4 | 4 | 4 | 4 | 5 |

Responses presented as median scores based on a five-point Likert scale in which 1 = not important at all, 2 = slightly important, 3 = somewhat important, 4 = moderately important and 5 = very important. Median absolute difference for all values was zero (not shown). *Statistically significant difference

program – the rest depend on the competitiveness among the GI applicants to other specialty applicants.

Once offered a fellowship position, applicants can hold the offer, accept it or decline. Only one offer can be held for the duration of the match (two weeks); a second offer can only be held for a maximum of 48 h. The ability of the candidate to choose theoretically gives the advantage of this match process to candidates and, potentially, places the burden of choice on them. The match process puts programs at a disadvantage because candidates can hold positions – this attrition allows the pool of competitive applicants to dictate who ultimately gets positions. The system will change for the 2010 match to an automated match based on rankings from both parties.

As the popularity of GI increases, program directors of GI training programs will endeavour to recruit the best applicants. Part of the struggle of the match program is the paucity of information regarding relevant factors in the decision-making process from both sides. In the present study, we elicited this information because transparency will facilitate achieving the desired objectives for both parties in the match process.

METHODS

Survey design and development

Two questionnaires in the form of a survey were developed by the authors after collaboration with two former program directors and three current GI fellows. To improve the likelihood of higher response rates, consideration was given to limiting the self-administered survey to less than 20 questions and for it to take approximately 5 min to complete. No pretest validation or piloting of the surveys was undertaken.

The questionnaire for successfully matched applicants focused on several issues believed to influence the choice in accepting an offer from a particular program. These issues included training details, personal suitability and future goals (Table 1). The survey asked the applicants to consider the importance of the factors using a five-point Likert scale (4) in which 1 = not important at all; 2 = slightly important; 3 = somewhat important; 4 = moderately important; and 5 = very important. The questionnaire to program directors focused on several issues including trainees' interests, background and future prospects (Table 2). The survey asked program directors to consider the importance of these factors using the same five-point Likert scale.

Initial recruitment of participants

In December 2006, survey participation of the PGY-4 match co-coordinators of all academic training programs in Canada was requested via e-mail for the successfully matched 2006/2007 applicants. They were asked to forward the link (hosted by the University of Western Ontario, London, Ontario [www.uwo.ca]) of an online survey to all PGY-3 residents who matched to the adult GI training program at their institution.

The program directors of all 14 accredited Canadian adult GI training programs (one program had codirectors) were also contacted by the author (KJK) and forwarded the link to the online survey in December 2006.

Follow-up recruitment

A second and final request was made by e-mail to the PGY-4 match coordinators to resend the link of the online survey to all applicants. For all program directors who did not respond to

the first request within one month, a second request was made and the survey link was sent again. Finally, to further recruit nonresponders, the author (KJK) presented a paper version of the survey at the Program Directors' meeting during the Canadian Digestive Diseases Week 2007 annual meeting in Banff, Alberta, two months after the original request was sent.

For the 2007/2008 and 2008/2009 matches, applicants who attended the McMaster University (Hamilton, Ontario) introductory endoscopy course in July were provided with the survey at the course. No efforts were made to contact the applicants who did not attend the course because attendance for the course was higher than 90% for first-year fellows across the country. Pediatric residents who completed the survey were not included in the analysis.

Responses to the surveys were recorded and analyzed using a spreadsheet (Excel, Microsoft Corporation, USA). The factors were ranked based on the highest median score. The median absolute difference was also determined to assess the variability of the data set within each year. Using StatsDirect software (StatsDirect, United Kingdom), the Kruskal-Wallis test was performed to assess significant differences between years. Subgroup analysis using the Mann-Whitney U test was performed to investigate sex differences in the responses.

RESULTS

Applicant responses

The online applicant response rate was 16 of 25 (64%) for the 2007 applicants. Twenty-four of 26 (92%) participants in the 2008 cohort, and 24 of 34 (71%) participants in the 2009 cohort, completed the paper survey. The overall response rate was 64 of 85 (75%). The responses in three surveys were illegible and, therefore, invalid. Of the 64 total surveys, 41 were completed by men, 16 were completed by women and seven surveys were completed with sex not specified.

The most important overall applicant factor (ie, median score = 5) was suitable location for spouse, partner or family. The least important factor (median score = 2) was the opportunity for a pediatric elective. Comparing the results between years shows consistent median values for most factors. Those with slight differences (median \pm 1 from total) include very good reputation, opportunity for third-year funding and programs whose previous trainees were successful in obtaining further fellowships (Table 1).

Analysis of the median absolute variance within each year showed no difference (variance = 0) for all factors. Between cohorts, the only significant difference was demonstrated in 2007 and 2009 for 'programs with a very good reputation' (P=0.039). Subgroup analysis between sexes demonstrated that women showed a slight preference (median difference +1) for programs with a very good reputation; with a GI ward; outpatient fellow clinic; and success of previous trainees in fellowship positions. Only preference for a GI ward showed statistical significance (P=0.008) (Table 1).

Program directors' responses

The program director response rate was 11 of 15 (73%). One program had responses from two active program directors. All but one of the program directors who responded were men. The most important factors (median score = 5) influencing the ranking of applicants were the ability to get along with others,

TABLE 2
Program directors' responses

| Factor | Total (n=11) | MAD (n=11) |
|--|--------------|------------|
| You believe the trainee will stay in your community after his or her fellowship | 3 | 0 |
| The trainee shows excellent leadership and communication skills | 4 | 0 |
| The trainee has demonstrated the ability to get along with others | 5 | 0 |
| The trainee performs well during the interviews | 4 | 0 |
| The trainee has done an elective in your school | 3 | 0 |
| The trainee has done electives outside of their own school | 3 | 0 |
| The trainee has NOT done all of their previous training with one school | 2 | 0 |
| The trainee has a Masters degree or PhD | 2 | 0 |
| The trainee has an interest in basic science research | 3 | 0 |
| The trainee has an interest in clinical research | 4 | 0 |
| The trainee has published in a peer-reviewed journal | 4 | 0 |
| The trainee has attended a meeting/conference in gastroenterology | 4 | 0 |
| The trainee has attended the Scholars' Program at Canadian Digestive Diseases Week | 3 | 0 |
| The trainee has a strong personal letter | 4 | 0 |
| The trainee has outstanding reference letters | 5 | 0 |
| The trainee has an exceptional curriculum vitae | 5 | 0 |
| The trainee has a high probability of accepting an offer | 4 | 0 |
| The trainee has a high probability of making a decision on an offer within 48 h | 3 | 0 |
| The trainee is only applying to one subspecialty | 5 | 0 |

Responses presented as median scores based on a five-point Likert scale in which 1 = not important at all, 2 = slightly important, 3 = somewhat important, 4 = moderately important and 5 = very important. MAD Median absolute difference

outstanding reference letters, exceptional curriculum vitae and knowing the trainee is applying to only one specialty. The least important factors (median score = 2) included the trainee having completed their training at more than one school and having a Masters degree or PhD (Table 2).

DISCUSSION

Using a survey methodology, we addressed the important question of what influences the ranking of programs and applicants during the Canadian GI match. The response rate to our survey was excellent, owing to the approach of recruitment at the endoscopy course and following up with online surveys.

We collected data from three sets of applicants to assess consistency and validity. We hypothesized that the resident responses varied year to year because applicants' concerns and personal beliefs would be different. We found similar results among residents from three years that indicated most values remained constant. For applicants, the suitability of the residency training program location for loved ones was the most important factor in the ranking. Unfortunately, this is a non-modifiable variable for programs. However, programs could direct more attention to what the location has to offer applicants. Specific program factors such as endoscopic retrograde cholangiopancreatography, endoscopic ultrasound, nutrition and pediatric electives were the least significant factors (Table 3).

TABLE 3
Summary of findings

| Importance | Program directors look for a resident who has... | Gastroenterology applicants look for a program with... |
|---------------------------------|--|--|
| "Very" (median score = 5) | Ability to get along with others Outstanding letters of reference Exceptional curriculum vitae Applied to only one specialty | Location suitable for family, partner or spouse |
| "Moderately" (median score = 4) | Leadership/communication skills Good interview Interest in research Published in peer-reviewed journal Attended a gastroenterology conference Strong personal letter High probability of accepting offer | Very good reputation Sponsorship for meetings Suitable length Recruitment effort Exposure to liver transplant training Mandatory research blocks Fellows clinic Academic career preparation Community career preparation Previous trainee success |
| "Somewhat" (median score= 3) | Stay in your community Elective in your school Elective at other school Basic science research interest Canadian Digestive Diseases Week Scholars Program Decision on offer in 48 h | Possible third-year funding Endoscopic retrograde cholangiopancreatography training Endoscopic ultrasound exposure Capsule endoscopy exposure Total parenteral nutrition/nutrition electives Dedicated gastroenterology ward |
| "Slightly" (median score = 2) | Not all training at one school Previous Masters degree or PhD | Exposure to pediatrics |

Factor importance based on a five-point Likert scale in which 1 = not important at all, 2 = slightly important, 3 = somewhat important, 4 = moderately important and 5 = very important

This suggests that trainees are less interested in details of the training program or a perception that all training programs provide sufficient training for competency in GI.

The differences in responses according to sex were minimal; however, the sample size of the women was approximately one-third of the sample size of the men. This may be reflective of the overall balance of sex split in GI in Canada. Trends are suggesting that this is changing, with data from the United States (5) showing that the number of female GI residents doubled from only 56 in 1996 to 129 in 2006.

Program directors are usually stationed at their position for a few years. Results should not vary year to year. There is limited information and transparency regarding the ways in which an applicant can boost their chances of gaining acceptance to a program. We found that the factors most important to an application were associated with reputation, merit on paper

and commitment expressed in the desire to pursue only one specialty. Potential applicants can now appreciate what is important in the application. Although GI is a competitive specialty, it is not out of reach and individuals should not be discouraged to apply. Furthermore, a Masters degree or PhD is not even required! The data also afford program directors the opportunity to optimize their programs based on residents' concerns and aim to attract the best candidates in future matches.

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