A survey to determine the potential impact of foundation year career aims on surgical specialty training

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ABSTRACT

Introduction: The competition for Core Surgical Training (CST) positions and subsequent Surgical Specialty Training (ST3) posts throughout the UK is fierce. Our aim was to conduct a pilot study to assess whether current foundation year doctors were considering pursuing a career in surgery and the reasons guiding their decisions.

Methods: A ten-item questionnaire was voluntarily completed by foundation doctors at a large acute teaching trust. Factors evaluated included: experience working within a surgical rotation; previous consideration of a career in surgery; whether they found a career in surgery appealing; reasons guiding their decision and would they be applying to CST.

Results: All 67 foundation doctors approached agreed to participate: of which 56 (83.6%) had experience working within a surgical rotation. Males were significantly more likely to find a career in surgery appealing (p < 0.001). Although 20 (29.9%) had previously considered a surgical career, only 11 (16.4%) would be applying to CST. Reasons for finding a career in surgery appealing included: job satisfaction (84.2%), diversity of work (79.0%) and working environment/colleagues (47.4%). Of those that did not consider a career in surgery to be appealing, reasons included: working hours (75.0%), work/life balance (62.5%), working environment/colleagues (50%).

Discussion and conclusion: Although only a small proportion of current foundation doctors were surveyed in our study, only 16.4% were considering applying for CST. These figures are lower than previously suggested and would indicate that there will be fewer applicants for CST in future years, which may potentially reduce the current bottleneck of applicants at ST3.

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1. Introduction

The surgical career pathway in the United Kingdom involves several stages of competition. In general a Certificate of Completion of Training (CCT) is obtainable within 9—10 years of graduation, at which time the candidate is eligible to apply for their senior position (Consultant) [1,2]. The initial stage commences with two years of foundation training, rotating through a variety of specialties comprising of both medical and surgical rotations, followed by a two-year period in Core Surgical Training (CST). This is followed by a 5—6 year period as a Specialist trainee (ST3 to ST7 or ST8). (Fig. 1) There is competitive entry involving an application and interview for both CST and Specialty training (ST3) in the chosen specialty and competition at both of these levels is fierce.

Due to the overwhelming demand for positions, candidates who are not successful often take up other non-training positions in a bid to improve their eligibility for future applications and this creates a backlog of future potential applicants.

In 2012, Modernising Medical Careers (MMC) identified that 703 core surgical trainees were recruited throughout the UK, however that same year; only 355 surgical ST3 positions were available [3]. (Table 1) In 2010, what was formerly NHS Medical Education England made recommendations that the number of CST posts recruited to in 2011 should not be greater than the number of ST3 positions available and that any free-standing CST year two posts should be removed [4].

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There are currently 7000 foundation year one doctors in the UK and in 2012, 2666 applications were made for a CST post [3,5]. These figures would indicate that up to 38% of foundation doctors would consider a surgical career (Table 2). In 2009, with the advent of the European Working Time Directive (EWTD), junior doctors were confined to working a 48-hour week with the aim of preventing excessively long hours and thus improve the quality of service delivered [6,7]. It is likely as a result of this initiative, foundation doctors will receive less experience within operating theatres and spend more time confined to the wards performing service provision. We hypothesise that fewer foundation doctors are considering pursuing a career in surgery due to their limited experience within the field, which could potentially reduce future competition ratios.

Our aim was to conduct a pilot study to assess whether current foundation year doctors were considering pursuing a career in surgery and the reasons guiding their decisions.

2. Materials and methods

A ten-item questionnaire was derived based on the authors’ experiences and review of the literature (Appendix 1) [8–11]. Both year one (FY1) and year two (FY2) foundation doctors voluntarily filled out the questionnaires during mandatory teaching sessions at a large acute teaching trust in the UK. All doctors surveyed were five months into their current training year. The questionnaires were delivered in paper form and collected after completion to ensure an optimal response rate. The questionnaires were anonymous to allow the participants to be candid about their experiences and opinions. All participants were made aware that completion of the questionnaires was voluntary and that completion was taken as consent to participate within the study.

The questionnaire evaluated the following factors:

- Experience working within a surgical rotation in their foundation training
- Previous consideration of a career in surgery
- Whether they found a career in surgery appealing
- Reasons guiding their decision
- Whether they would be applying to CST

Statistical analysis was performed using SPSS Statistics 20 for Mac (IBM, USA).

Pearson’s chi-squared test was used to evaluate levels of independence. A p value of ≤0.05 was considered significant and thus reject the null hypothesis. (Degrees of freedom are 1 in all cases.)

Table 2

| Year | Number of posts | Number of applications | Competition ratio |
|------|----------------|-----------------------|------------------|
| 2012 | 703            | 2666                  | 3.8:1            |
| 2011 | 743            | 3000                  | 4.0:1            |

This does not take into account the number of unique applicants.

3. Results

All of the 67 foundation doctors approached, completed the survey. This group was composed of 48 FY1’s and 19 FY2’s. There was a female predominance in the participants (37/67; 55.2%). Of the foundation doctors questioned, 56 (83.6%) had experience of working within a surgical rotation in their foundation training. Of the 67 participants, 20 (29.9%) had previously considered a surgical career. Of those who had not previously considered a surgical career, the most popular specialties considered were general practice (n = 17), paediatrics (n = 10); and general medicine (n = 8); (note that participants may have listed more than one specialty). A surgical career appealed to 19 (28.4%) of those questioned, however only 11 (16.4%) would be applying to CST.

Of the foundation doctors that stated that they found a surgical career appealing (n = 19), the most common reasons cited were job satisfaction (84.2%), diversity of work (79.0%) and working environment/colleagues (47.4%) (Fig. 3a). However, only one participant in this cohort stated that they were discouraged by the working hours and the work/life balance. Of the foundation doctors that did not consider a surgical career to be appealing (n = 48), the most common reasons cited were working hours (75.0%), work/life balance (62.5%) and working environment/colleagues (50.0%) (Fig. 3b).

Male participants were significantly more likely to have previously considered a career in surgery (15/30 vs. 5/37; p = 0.001) and to currently find a surgical career appealing (15/30 vs. 4/37; p < 0.001). Subsequently, a greater proportion of males would also be applying to CST (10/30 vs. 1/37; p = 0.001). A significant difference was not identified in whether participants were more likely to find a surgical career appealing if they had experience working within a surgical rotation (17/56 vs. 2/11; p = 0.413). This was also mirrored in those who would be applying to CST (10/56 vs. 1/11; p = 0.473). A greater proportion of doctors...
stated that they would be applying to CST if they had previously considered a career in surgery (10/20 vs. 1/47; \( p < 0.001 \)). However of the twenty participants that had previously considered a career in surgery, the remaining ten would not be applying to CST.

4. Discussion

In 2013, CST recruitment was nationally managed for the third year by the Kent, Surrey & Sussex (KSS) deanery. Despite previous recommendations made to reduce the number of CST positions available, there were still a similar number available to previous years at 692. However, the competition ratios were reduced in comparison to previous years with only 1295 candidates applying for 692 positions: an overall ratio of 1.9:1 \([12]\). Previous stand-alone CST year two posts have since been removed.

Our study had a response rate of 100% and so despite its relatively small numbers, the results are likely to be representative of foundation year doctors throughout the UK. Our results suggest that a lower proportion of foundation year doctors than previously suggested find a career in surgery appealing (28.4%), however despite this only 16.4% of the foundation doctors surveyed would be applying to CST.

The main factors that influenced a decision whether to pursue a surgical career were job satisfaction, diversity of work and working environment/colleagues; whereas those that did not want to pursue a career in surgery were discouraged by the working hours, the impact on their work/life balance and the working environment/colleagues. Several studies worldwide have cited these lifestyle factors as the main influential factor in not choosing a career in surgery \([13,14]\).

Despite the majority of medical graduates in the UK being female, as reflected by the greater proportion of female doctors surveyed, only a small proportion are considering pursuing a career in surgery. Given that the majority of surgeons in the UK and throughout the world are male, it is unsurprising that a significant correlation was found between male sex and finding a career in surgery appealing \([15–17]\). No correlation was found in whether prior experience working within a surgical rotation influenced a decision to either consider a surgical career or apply to CST. However this may be due to the majority of our participants having experience working within a surgical rotation.

Despite the significant correlation between previous consideration of a surgical career and application to CST, half of the doctors that had previously considered a surgical career had since decided against applying to the specialty. Unfortunately we were unable to identify the specific reasons behind this decision.

Less clinical experience and elective theatre exposure has been attributed to the EWTD amongst junior surgical trainees \([18–20]\). With this decreased exposure amongst surgical trainees, the more junior foundation doctors are also unlikely to gain supervised surgical experience and therefore restricted to ward-based work. We hypothesise that this is a detrimental influence in choosing surgery as a future career option.

Several studies conducted worldwide have assessed the effect of mentoring and role models on medical student and junior doctor career choice \([21–24]\). All of the studies agreed that a positive role model and clinical mentor was an influential factor in career choice. Ravindra and Fitzgerald (2011) highlighted that participants were twice as likely to apply for surgery if they had a mentor and that same sex role models/mentors were also found to be preferential \([21]\).

After the adoption of the EWTD and subsequent shift patterns, foundation doctors in many centres no longer work for specific firms and are responsible for the care of patients under multiple consultants \([19]\). As a result, there is a diminished opportunity for mentoring and the development of a role model. It is important to realise that although senior doctors can act as positive role models, they may also be perceived in a negative manner if junior doctors do not receive adequate support. This was mirrored in our results with 50% of those choosing not to pursue a career in surgery citing working environment/colleagues as an influencing factor. Lack of exposure to surgery as a medical student has also been demonstrated to be a factor in the decreased number of applications for surgical training within the UK \([21]\).
Glynn and Kerrin (2010) carried out a survey of both first and final year medical students, hospital interns and basic surgical trainees in Ireland to identify factors that influenced choosing a career in surgery [11]. Basic surgical trainees were excluded from their initial analysis as they had already committed to a surgical career. Although a further 204 responses were analysed, only 19% (n = 39) of this group were newly-qualified interns. The remaining 81% analysed were responses from medical students who would have had limited knowledge of working within a surgical department. We chose to thus focus specifically on foundation doctors who had experience of working within the hospital setting and particularly those that had experience of a surgical rotation.

Glynn and Kerrin identified 20.6% of their 204 respondents ‘would like a career in surgery,’ but only 13.2% ‘felt like they would realistically end-up choosing surgery’ [11]. These figures are similar to those found in our study. Their study identified prestige as the most important influence in predicting those interested in a career in surgery. Lifestyle during training was found to be an adverse factor. Although prestige was only commented upon as an influencing factor by one of our participants, effect on lifestyle was seen to deter respondents in considering a surgical career.

Although a shortage of general surgeons has been identified in several countries including Australia, South Africa and the USA, competition ratios to obtain surgical training posts throughout the UK continue to remain high [25–28]. While the number of CST recruits remains relatively unchanged and a backlog of previously unsuccessful applicants remain in circulation it is unlikely that the competition ratios for ST3 application will reduce in the immediate future.

Not every CST will continue through to ST3 for a variety of reasons including: change of career path, failure to pass required Royal College Membership examinations and other lifestyle choices [29]. Although a level of competition ensures that the best candidates are selected for further progression, the impact on individual doctors who fail to progress is unmeasured. Achieving the correct balance between competition, service provision and failed progression is inevitably difficult.

If applications to CST do decline as suggested by our survey this may have several implications. It is possible that there will no longer be enough CST posts to fulfil on-call service provision, which may necessitate an expansion of non-training grade doctors and nurse practitioners. This in itself may have a knock on effect on training opportunities.

If CST numbers fall then competition for entry into ST3 posts may be reduced, increasing the importance of selection criteria for entry into CST posts.

We acknowledge that our study has several limitations, including a relatively low number of subjects questioned and that the study was carried out at a single centre. In addition, the number of applications in previous years is likely to be higher than the number of individual applicants. This is due to applicants being allowed to apply to several deaneries and thus the overall competition ratios may be lower than identified by MMC. There were also several participants who although they had considered a career in surgery, they would not be applying to a core surgical training, but we were not able to identify the specific details.

Our study is the first to identify factors guiding a career in surgery focussing on doctors with working exposure to surgery in the UK prior to choosing a training specialty. We would like to follow up this study by performing a national survey of foundation doctors to identify the specific reasons guiding change in career plans from surgery and if limited exposure and competition ratios were influential factors.

5. Conclusion

Although only a small proportion of current foundation doctors were surveyed in our study, only 16.4% were considering applying for CST. These figures are lower than previously suggested and would indicate that there will be fewer applicants for CST in future years, which may potentially reduce the current bottleneck of applicants at ST3.

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Competing interests

All authors have completed the ICMJE uniform disclosure form at www.icmje.org/coi_disclosure.pdf and declare: no support from any organisation for the submitted work; no financial relationships with any organisations that might have an interest in the submitted work in the previous three years; no the relationships or activities that could appear to have influenced the submitted work.

Author contribution

RKP, AES, MJA & IAH were responsible for study conception, design and acquisition of data. RKP & AES were responsible for analysis and interpretation of data. RKP & IAH were responsible for drafting the article. All authors were responsible for final approval of the version to be published.

Appendix A. Supplementary data

Supplementary data related to this article can be found at http://dx.doi.org/10.1016/j.jamsu.2013.12.001.

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