



Has the Bachelor of Surgery Left Medical School? – A National Undergraduate Assessment

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INTRODUCTION: Nearly all trainee doctors would undertake a surgical placement in their clinical training; however, there is anecdotal evidence of variability in undergraduate surgical teaching across the UK. We set out to describe the provision of undergraduate surgery and report graduating students' opinions of aspects of this.

METHODS: We undertook a cross-sectional questionnaire of medical students graduating in 2014 from UK medical schools. An online electronic questionnaire was used to capture demographics, career intentions, and individual's undergraduate experience of surgery. A separate questionnaire was sent to medical schools to assess time devoted to surgical placements and how surgical sciences were taught and assessed.

RESULTS: From 483 responses covering 31 UK medical schools, there were 328 completed student questionnaires. A third of respondents felt that teaching of surgical sciences was inadequate. Medical schools reported time allocated to surgical specialties ranging from 4 to 21 weeks (median 13 weeks). Among all, 1 medical school offered a basic surgical skills course and 1 medical school specifically assessed surgical-related skills. Overall, 65% of medical students felt prepared for a surgical foundation placement and 88% felt prepared for a medical foundation placement. In total, 78% felt ready to participate in an acute medicine on-call and 48% felt ready for emergency surgery on-call. There was a positive association between time dedicated to undergraduate surgery and reported preparedness for a foundation surgical job.

CONCLUSIONS: UK medical students reported uniformly low rates of satisfaction with surgical science teaching.

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Students studying at medical schools with more time in the curriculum dedicated to surgery reported higher levels of preparedness for surgical foundation jobs. There were differences in the rates of perceived preparedness for surgical posts and for emergency surgery. There is a clear need to review undergraduate surgical provision to ensure that students are equipped for safe practice in junior surgical foundation jobs. (J Surg Ed 73:655-659. © 2016 Association of Program Directors in Surgery. Published by Elsevier Inc. All rights reserved.)

KEY WORDS: medical education, general surgery, undergraduate, medical student, medical knowledge

COMPETENCIES: Medical Knowledge, Patient Care, Professionalism

INTRODUCTION

Much recent work has focused on the relationship between undergraduate surgical experience and career intentions.^{1,2} Although encouraging a number of students into a surgical career is important to sustain the discipline, the overwhelming majority of graduating students will only briefly work as trainee doctors in a given surgical specialty. It is important that in specialties that manage patients both before and after surgical intervention, doctors are familiar with the surgical environment. Imparting a suitable quantity and quality of information is, however, challenging in today's time-restricted curricula.

Varying approaches have been taken to address perceived curriculum gaps including the use of clinical teaching fellows,³ near peer teaching,⁴ and basic surgical skills courses.⁵ Despite initiatives, there remains a poor understanding of surgery at undergraduate level. A recent survey of practicing doctors identified general surgery as a specialty that had received insufficient exposure at undergraduate level.⁶

This study aimed to assess the undergraduate exposure to surgery in terms of time spent on placements, perceived preparedness for a junior post in a surgical specialty, and confidence in core skills.

METHODS

This was a cross-sectional study of medical students graduating from UK medical schools in 2014. A second questionnaire was submitted to all 32 UK medical schools.

Ethical approval was granted by the University of Sheffield Research Ethics Committee (Reference SMBRER217). The medical school questionnaire was sent via e-mail to school administrators. Details of ethical approval and guarantee of anonymity were provided. Questions were asked on the design of the curriculum, time dedicated to surgical placements, and how surgical knowledge was assessed. Further questions on teaching and assessment of surgical skills and knowledge were completed. Finally, we asked questions on who wrote the curriculum and the involvement of surgeons in the steering committee.

A questionnaire for final-year UK medical undergraduates was administered via an online platform (SurveyMonkey, Palo Alto, CA) and disseminated through medical schools, student society mailing lists, and social media. This took place between May 2014 and August 2014 to capture responses from final-year students at the end of their studies. Responses were anonymous and informed consent for participation was implied by full completion of the questionnaire. To prevent duplication survey responses were limited to 1 per internet protocol address. The questionnaire was publicized via medical school e-mail lists, student medical and surgical societies, and through social media.

The questionnaire contained Likert-scale (5-point), yes or no and free-text responses to a range of questions. Questions were designed to capture demographics of participants, type and location of medical course they followed, and career intentions. A selection of questions was used to assess reported preparedness for foundation training posts in selected specialties (i.e., General Medicine and General Surgery). Respondents were also asked to report perceived preparedness to undertake a range of basic tasks including scrubbing up, interrupted sutures, tying knots, and local anesthetic infiltration. Students were asked to report their perceived preparedness to undertake a surgical foundation-post using a Likert item. The scale had 5 points as follows: very unprepared, unprepared, neither prepared nor unprepared, prepared, and very prepared.

Correlation of Data

Where schools had 5 or more respondents, proportion reporting feeling 'prepared' or 'very prepared' for a junior surgical post was correlated with amount of time allocated

to undergraduate surgical placements using Spearman's rank. Rho was reported and a $p < 0.05$ was considered significant. The same criteria for comparison were applied to preparedness for a junior medical post and clinical skills.

Finally, data were correlated with the General Medical Council (GMC) Education reports on Postgraduate examination pass rates and reported preparedness for FY1 posts.⁷ This is a historic cohort and as curricula tend to change slowly over time, these might link curriculum to future outcomes.

Statistical analysis of questionnaires was performed in SPSS version 21.0 (IBM, Armonk, NY). Initial assessments were undertaken to compare demography and intended career specialty with published data, with comparison made between proportions. To assess relationships between perceived preparedness and course factors, 2×2 tables were constructed and Chi squared test used with $p < 0.05$ considered significant.

RESULTS

Medical School Survey

All 32 medical schools in the UK were contacted and invited to respond to our questionnaire. Among these, 12 medical schools provided 10 usable responses. In all, 16 medical schools declined to complete the questionnaire (reasons given included recent revision of curriculum, change in senior staff, insufficient staffing to complete, integrated curricula, and unable to discuss). Despite repeated contact, 4 medical schools did not respond.

Medical schools reported variable times allocated to general surgical specialties (Fig. 1). Some of the reported times were identified by the respondent as an estimate because of integration in the curriculum. Compulsory time allocated to surgical specialties ranged from 4 to 21 weeks (median = 13 weeks). Optional time available for

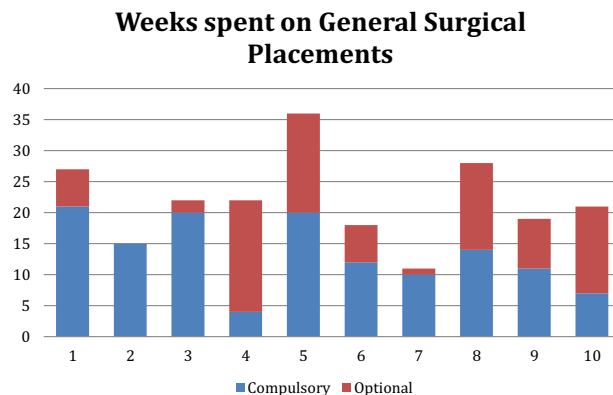


FIGURE 1. Curriculum time available for medical student placements in general surgery.

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